United Nations Department of Economic and Social Affairs
Division for Sustainable Development

FINANCE for SUSTAINABLE DEVELOPMENT

Testing New Policy Approaches

Proceedings of the Fifth Expert Group Meeting on Finance for Sustainable Development, Nairobi, Kenya, 1-4 December 1999

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PREFACE

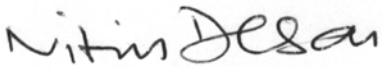
FINANCE plays a pivotal role in implementing the environmental, social and economic policies needed to attain the objectives of Agenda 21. It is also an area that presents immense challenges. These challenges are illustrated at the international level by the international financial crisis of 1997-98 and the stagnant levels of official development assistance throughout the 1990s. At the domestic level, they are illustrated by the difficulties in removing environmentally damaging subsidies and in raising domestic financial resources, particularly in developing countries where poverty and unemployment are high, debt payments burdensome and policy options limited.

Challenges such as these must be addressed and overcome. Current policies must be continuously reviewed and improved upon and, where necessary, new policies must be tested and implemented. During this process, new policies must be debated among experts and scholars, and information about the policies and their implementation must be disseminated.

The purpose of *Finance for Sustainable Development: Testing New Policy Approaches* is to contribute to this process. It contains papers presented at the Fifth Expert Group Meeting on Finance for Sustainable Development, held in Nairobi, Kenya, 1-4 December 1999. Experts from national governments, academia, international and regional organizations, NGOs and the private sector presented and debated the papers in this volume. The overall theme of the papers is testing new policy approaches in financing sustainable development. The major areas of focus are improving the policy framework for sustainable development finance, new policy approaches in international and domestic finance, and innovative mechanisms in sector finance. There is an emphasis on Sub-Saharan Africa, with several papers addressing specific issues related to finance for sustainable development in that region.

The Chairman's Summary of the Meeting and the papers were presented to the Eighth Session of the United Nations Commission on Sustainable Development in May 2000. This publication will also serve as an input to the International Conference on Financing for Development to be held in 2002.

On behalf of the United Nations, I would like to express my gratitude to the Governments of The Netherlands, Ireland and Kenya for sponsoring the Fifth Expert Group Meeting and this publication. I also express my sincere appreciation to the United Nations Environment Programme for hosting the Meeting. Finally, I would like to thank the United Nations Office in Nairobi for supporting us in the on-site organization of the Meeting.■



Nitin Desai
Under-Secretary-General
Department of Economic and
Social Affairs

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Finance for Sustainable Development: Testing New Policy Approaches
Edited by *Juergen Holst, Donald Lee and Eric Olson*

The Fifth Expert Group Meeting on Finance for Sustainable Development was sponsored by the Governments of The Netherlands, Ireland and Kenya, hosted by the United Nations Environment Programme (UNEP) and organized by the United Nations Department of Economic and Social Affairs (UNDESA). The meeting was held at the United Nations Office in Nairobi (UNON) Gigiri Conference Centre from 1-4 December, 1999. Experts from national governments, academia, international and regional organizations, non-governmental organizations (NGOs) and the private sector took part as authors, discussants and participants. Contributors to the Meeting and this volume are:

The Honourable Chrisanthus Okemo, E.G.H., M.P., Minister for Finance, Kenya

J.G. Backhaus, Maastricht University, The Netherlands

Ashok Bhundia, Bank of Uganda

Nicholas Biekpe, University of Stellenbosch, South Africa

John Dilyard, St. Francis College, United States

JoAnne DiSano, UNDESA

Donata Finck von Finckenstein, University College London, United Kingdom

P. Francis, University of Bath, United Kingdom

H. Peter Gray, Rutgers University, United States

Dympna Hayes, Permanent Mission of Ireland to the United Nations

Jorge Illueca, UNEP

Carlos Joly, Storebrand Investments, Norway

Louis Kasekende, Bank of Uganda

Ron Lander, Ministry of Foreign Affairs, The Netherlands

Lin See-Yan, LIN Associates, Malaysia

Nguyuru Lipumba, Civic United Front, Tanzania

Anil Markandya, University of Bath, United Kingdom

John Norregaard, IMF

R.Omotayo Olaniyan, Organisation for African Unity

T.A. Oyejide, University of Ibadan, Nigeria

Jyoti Painuly, UNEP Collaborating Centre on Energy and Environment, Denmark

Theodore Panayotou, HIID, United States

David Pearce, University College London, United Kingdom

Grzegorz Peszko, OECD

Valérie Reppelin-Hill, IMF

Kai Schlegelmilch, Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Germany

Kazuo Takahashi, International Development Research Institute, Japan

Norbert Wohlgemuth, UNEP Collaborating Centre on Energy & Environment, Denmark

Those who took part as formal discussants at the Meeting are: *Thomas Brewer, Eric Chatman, Andre de Moor, Marco Ferroni, Augustin Fosu, Carl Greenidge, Ron Lander, Geoffrey Mwau, Charles Okeahalam, R. Omotayo Olaniyan, Theodore Panayotou and Grzegorz Peszko*. A complete list of those who participated in the Meeting is included in Annex II. The African Development Bank, the United Nations Economic Commission for Africa and the United Nations Development Programme, Kenya recommended several experts from Africa.

The UNDESA staff member in charge of the Meeting's organization was *Juergen Holst*, assisted by *Donald Lee* and *Eric Olson*. Administrative support was provided by *Surinder Punj* and *Masachika Suzuki*. Support for the on-site organization and administration of the Meeting was provided by UNEP and UNON, in particular, *Shafqat Kakakhel*, *Amadeo Buonajuti*, *Shahida Ali-Butt*, *Jessica Wanyama* from UNEP and *Alexandar Barabanov*, *Aidar Karatabanov*, *Gertrude Aguti*, *Galina Kahumbura*, *Alex Makomere*, *Nelson Kahiu*, *Peter Waweru* and *David Ojwan'g* from UNON. On-site English-French interpretation of the Meeting was performed by *J.P. Pama*, *Kebba Jarju*, *Maria-Lily Pavlidis* and *J.K. Muhindi*.

Editing support was provided by *Surinder Punj*, *Alejandro Carpio*, *Masachika Suzuki* and *Madhavi Rongola*; the layout was prepared by *Donald Lee*.

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FINANCE FOR SUSTAINABLE DEVELOPMENT: TESTING NEW POLICY APPROACHES

INTRODUCTION

Juergen Holst, Donald Lee and Eric Olson[*]

THE Programme for the Further Implementation of Agenda 21, agreed upon at the Earth Summit+5 in 1997, contained proposals for new policy approaches in regard to the mobilization and allocation of financial resources for sustainable development. The Fifth Expert Group Meeting on Finance for Sustainable Development (Nairobi, Kenya, 1–4 December 1999) undertook a review of the testing of these approaches in practice.

In reviewing the proposals of the Earth Summit+5, the Expert Group provides inputs to the discussion on finance for sustainable development at the World Summit on Sustainable Development which will be convened in Johannesburg, South Africa in 2002. As financial resources are a crucial element for the implementation of Agenda 21, it can be expected that the discussion of financial mechanisms will be one of the most debated issues at the forthcoming Summit. It is also hoped that the review undertaken by the Expert Group will be a useful input for the forthcoming International Conference on Financing for Development in 2002.

This volume contains the proceedings of the Fifth Expert Group Meeting on Finance for Sustainable Development[1] which was attended by experts from government, international and non-governmental organizations, academia and the private sector.

The volume starts with the introductory statements delivered during the opening session.

The introductory statements are followed by the Chairman's Summary. A draft of this Summary was discussed during the last day of the Meeting, and its final version reflects the comments and suggestions made by the experts. The Summary contains an analysis of major problems in mobilizing and allocating financial resources for sustainable development and provides key policy options for their solution. It is particularly useful for national policy makers and other readers pressed for time.

The volume then addresses the first part of the Meeting agenda, the discussion of how to improve the policy framework for sustainable development finance. T. Ademola Oyejide of the University of Ibadan, Nigeria, addresses this issue by analyzing recent developments in sustainable development finance in Sub-Saharan Africa. The author advocates a policy framework with a better balance of domestic and external resources for investment finance and discusses the potential danger of volatile external resource flows for economic growth. A more narrow but nevertheless important issue of policy design is addressed by Grzegorz Peszko of the Organisation for Economic Co-operation and Development who makes a convincing argument in favor of integrating public environmental expenditure management into general public finance. Based on the experience of economies in transition in Central and Eastern Europe, he argues that public institutions managing environmental expenditures should adhere to acknowledged standards of sound public finance and focuses in this context on autonomous public environmental funds.

The volume then turns to the second part of the Meeting agenda, which deals with new policy approaches in international finance and focuses on new strategies for official development assistance (ODA), a better design of policies for attracting private foreign capital flows and policy action for further debt relief. The contribution of Kazuo Takahashi of the International Research Institute in Japan takes a critical look at the current policy agenda for improving the unsatisfactory situation in regard to ODA and makes several proposals for policy changes. For example, he suggests to resolve the issue of ODA in the framework of a wider strategy dealing with economic

* Juergen Holst is Chief, and Donald Lee and Eric Olson are staff members, of the Finance, Industry and Trade Unit, Division for Sustainable Development, United Nations Department of Economic and Social Affairs.

[1] The proceedings of the Third and Fourth Expert Group Meetings were published as *Sustainable Development Finance: Opportunities and Obstacles* (United Nations, 1996) and *Finance for Sustainable Development: The Road Ahead*, edited by Juergen Holst, Peter Koudal and Jeffrey Vincent (United Nations, 1997), respectively.

and political globalization, develop differentiated strategies toward different categories of aid recipients and start conceptualizing a longer-term strategy for ODA in which global goods would play a central role. Takahashi's conceptual discussion of global ODA issues is complemented by proposals for a reform strategy for ODA in Africa by R. Omotayo Olaniyan of the Organization for African Unity. He emphasizes that the way forward should be a strategy that identifies ways to strengthen the political will in donor countries for higher ODA commitments, outlines measures to disburse aid more efficiently to priority areas in recipient countries, and recommends pressure on policy makers to abandon all forms of tied aid.

Nguyuru H.I. Lipumba of the Civic United Front in Tanzania argues that new strategies for ODA must be matched by strategies for dealing with the debt problem, in particular in Sub-Saharan Africa. In regard to current debt relief strategies he argues that linking debt relief to implementing conditions imposed by the International Monetary Fund and World Bank undermines the principle of policy ownership in debtor countries. Instead, he emphasizes that it will be necessary to implement across-the-board debt cancellation to facilitate poverty-reducing growth strategies in debtor countries.

In addition to dealing with the problems of ODA and debt relief, it has become increasingly important for countries to attract foreign private capital inflows for investment in sustainable development. Peter Gray of Rutgers University, USA, and John Dilyard of St Francis College, USA, focus in their article on foreign direct investment (FDI) and foreign portfolio investment (FPI), which contribute to economic growth and technology transfer, social development and environmental goals. The authors discuss the problems that developing countries may face if they rely heavily on these capital flows and address various policies aimed at strengthening the necessary institutional infrastructure for FDI and FPI. The contribution of Louis Kasekende and Ashok Bhundia of the Bank of Uganda discusses the issue of foreign capital inflows from the perspective of African countries and outlines essential elements of a policy package. The authors analyze why Sub-Saharan Africa has not been able to attract large inflows of foreign capital in the 1990s and highlight negative investor perceptions and political risks. They propose policy options that could remove the impediments to larger capital inflows and emphasize institutional reform, investment in human capital and infrastructure and ensuring macroeconomic stability. A strategy for ensuring increased inflows of capital into Sub-Saharan Africa needs also to include a greater regionalization of capital markets. Nicholas Biepke of the University of Stellenbosch in South Africa analyses the current state of regionalization and makes a number of proposals to accelerate progress towards further regionalization.

The volume then turns to the third part of the Meeting agenda, which addresses new policy approaches in domestic finance and focuses on subsidy reform, the role of environmental taxes and tradable permits as well as ways and means of promoting a greater role of the private sector in financing sustainable development. In view of the heavy burden of subsidies for public finance, subsidy reforms will continue to play a central role in the discussion of finance for sustainable development. However, as David Pearce and Donata Finck von Finckenstein of University College London, United Kingdom, point out in their article, subsidy reforms should not be pursued as isolated policy measures but as a policy package reflecting a wider program of macroeconomic and political reform. This gradualist approach has to consist of pre-announced policy measures and step-by-step subsidy reductions combined with public awareness campaigns and efforts at increasing transparency and accountability.

"Green taxes" and tradable permits for controlling pollution can make important contributions to reducing the financial requirements for sustainable development. Most countries have relied more on taxes than on tradable permits to control pollution. John Norregaard and Valérie Repellin-Hill of the International Monetary Fund conclude that even though in theory neither instrument seems to be preferable to the other, in practice most countries have relied more on taxes than on tradable permits. The authors examine in their paper a number of lessons to be learned from country experiences regarding the design and implementation of both instruments and conclude that the willingness to experiment with tradable permits seems to be growing in view of the Kyoto protocol emission targets. The overview article by Norregaard and Repellin-Hill is complemented by an in-depth evaluation of recent experiences with ecological tax reform with a focus on Europe by Kai Schlegelmilch of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety of Germany. The author concludes that these taxes have been effective and quotes as examples of particularly successful taxes those on sulfur dioxide in Denmark and Sweden, on nitrogen oxides in Sweden, on water pollution in the Netherlands, and the various tax differentiation schemes for fuels in most European countries. In view of the many obstacles

that are still in the way of a more widespread use of environmental taxes worldwide, the article by J.G. Backhaus of Maastricht University, The Netherlands, on environmental taxes with its focus on various conceptual considerations makes a useful contribution to advancing the policy debate.

Much has been written on the proposition that the private sector has a major role to play in the financing of sustainable development. A. Markandya and P. Francis of the University of Bath, United Kingdom, give an overview of the debate and discuss briefly privatization and infrastructure investment as potential sources of finance. In regard to private sources of finance for global environmental protection the authors conclude that progress can be expected if the flexibility mechanisms of the Kyoto Protocol are implemented in the first decade of the millennium. As for investments related to the sustainable use of the local environment, the authors emphasize that it is difficult to make an overall appraisal of investment trends. Positive developments are the increased use of incentives for environmental protection through the use of economic instruments, the reduction of environmentally damaging subsidies and higher standards for investment appraisals. Another positive development is that some investors seek out and are overweight in eco-efficient and socially-aware enterprises. This development is analyzed and evaluated in a contribution by Carlos Joly of Storebrand ASA, Norway, on the greening of financial markets. The author reports that the United States and Europe are seeing to some extent a virtuous circle of environmental legislation, corporate environmentalism and investor preferences in favor of environmentally and socially responsible corporations.

The volume then addresses the final part of the Meeting agenda, which deals with innovative financial instruments and mechanisms in sector finance. The core paper was provided by Theodore Panayotou of the Harvard International Institute for Development, USA. The paper explores innovative financial mechanisms in energy, transportation, water, sanitation and forestry and identifies similarities and differences between these mechanisms. The paper also discusses to what extent instruments and mechanisms that are successful in one sector can be replicated in other sectors. In regard to replicating financial instruments and mechanisms the paper also explores to what extent instruments and mechanisms for sector finance that are successful in developed countries can be replicated in developing countries and economies in transition. The discussion of financing for the energy sector in Panayotou's paper is extended by the article by Norbert Wohlgemuth and Jyoti Painuly of the United Nations Environment Programme Collaborating Centre on Energy and Environment, Denmark, on the financing of renewable energy technologies. The authors demonstrate the importance of introducing innovative mechanisms for the financing of these technologies and emphasize that governments need to play a supportive role in this regard.■

OPENING ADDRESS

The Honourable Chrisanthus Okemo, E.G.H.*

LADIES and Gentlemen, it is my pleasure to join you this morning to officiate the opening of the Fifth Expert Group Meeting on Finance for Sustainable Development Issues of Agenda 21. However, before I make my brief comments, on behalf of the Government and the people of the Republic of Kenya, and on my own behalf, let me welcome you to Kenya and wish you a nice and memorable stay. I especially welcome those of you who have travelled from outside Kenya. I would also like to thank the sponsors of this important meeting, the governments of The Netherlands, Ireland and Kenya, for their support.

Mr. Chairman, the Government of Kenya appreciates the significant role this meeting can play in preparation for the 10th Session of the Commission on Sustainable Development (CSD), to be held in the year 2002. It is expected that this meeting will aim to provide the CSD with the analytical basis and a set of action-oriented policy options for discussions on financing sustainable development.

Looking through the Agenda, this Meeting is scheduled to discuss issues of great interest to developing countries, particularly those of Sub-Saharan Africa. On the subject of improving the policy framework for sustainable development finance, the Sub-Saharan region is facing major challenges. This is because we are struggling to improve an environment that is saddled with many problems and diminishing resources. While some of the problems are regionally based, others arise from the fast changing global scene. For example, only a few countries qualify for the enhanced Highly Indebted Poor Country (HIPC) debt initiative. The impression one gets is that to qualify for HIPC, the country must first fall into intensive care, financially. In other words, the HIPC initiative does not provide for pre-emptive relief. Unfortunately, even for those countries that qualify, the process is such that it takes a long time before the flow of resources arrives and begins to provide relief.

The situation in this region is compounded by the rapid decline of official development assistance resources. Indeed, for many countries, including Kenya, the region is now a net exporter of capital, which means we pay more than we receive. If this was the only problem, perhaps the situation would have been easy to handle. Unfortunately, this is not the case; since the 1997 global financial crisis the region has also experienced a net outflow of private capital. Furthermore, over the past three years, commodity prices have fallen as the financial crisis spread, reducing the export earnings of the region.

In addition, the region seems to have been a victim of the fallacy of the composition. Consequently, as the developing countries have strived to deregulate and privatize public enterprises, it has become a buyers market. The potential buyers of these enterprises have a wide choice and can now dictate the price. Obviously, there are many things the countries of the region can and are doing to improve the environment for development finance. For example, we can and are improving the capacity of the public sector to deliver public services, we are also developing strategies for better use of public finances while improving economic governance. We have removed, and will continue to remove, unnecessary regulations that frustrate investors. In all these efforts, we are demanding greater accountability and transparency of the Government and opening areas previously reserved to public monopolies, such as energy, telecommunications, etc., to private sector investors. All these can and will help. However, the challenge is enormous.

We are taking initiatives to integrate planning and budgeting in an effort to make development finance more sustainable. In this context, we seek to bring development finance into the mainstream of the policy-making arena. As we do this, we face major resource constraints. Indeed, managing this process would have been hard enough without the pressure from globalization of world trade that is threatening our producers, not only in export markets but also in the domestic market. The process of economic globalization poses an additional challenge in that even as we seek to mobilize additional resources from domestic sources, local savings are already being squeezed to finance adjustments for the private sector. For us, the challenge is even greater in that, in our efforts to remain current on our external debt, we have increased domestic borrowing to finance shortfalls in

* The Honourable Chrisanthus Okemo, E.G.H., M.P., is Minister for Finance, Government of Kenya.

external flows.

Mr. Chairman, it is in this context that we find this meeting to be of critical importance to us and the Sub-Saharan region. We believe Kenya is not the only country in this situation. For this region to effectively address the high incidents of poverty and growing unemployment, it will need to mobilize additional resources, both domestic and foreign. If this meeting can help identify avenues and modalities to help developing countries achieve this goal, this meeting will be a success.

Mr. Chairman, Agenda 21 recognizes official development assistance (ODA) as the main source of external financing for developing countries as reaffirmed by the United Nations target of increasing ODA to 0.7 per cent of donor countries' Gross National Product (GNP). It also recognizes the importance of debt relief for the Highly Indebted Poor Countries (HIPC). In addition, it is recognized that ultimately, the main source of financing sustainable development of a country must come from its own private and public sectors. Therefore, Agenda 21 stressed the importance of policy reforms, economic restructuring, and innovative financing mechanisms. However, since the Rio meeting, the situation has significantly differed from the expectations of Agenda 21.

Resources from ODA have actually declined to 0.27 per cent of donor countries' GNP in 1995. As regards the debt situation, the result has been somewhat mixed with significant progress achieved in the reduction of debt burden of middle income countries through improved economic policies, export performance, debt rescheduling, and new financial instruments. By contrast, the debt burden of low-income countries, especially in Sub-Saharan Africa, has remained unchanged or increased, despite the HIPC initiatives and some success in reducing bilateral debt, partly because of poor export performance.

Mr. Chairman, the most positive and largely unexpected outcome since Rio in external financing to developing countries has been the rise in private capital flows, which more than doubled. However, private capital flows cannot substitute for official development assistance because the poorest countries that need it most receive the least. Another positive development in the international scene has been the evolution of international environment funds such as the Global Environmental Facility (GEF) and the Montreal Protocol Environmental Fund (MPEF). These funds have succeeded in transferring some resources from the North to the South for investments that have global environmental benefits, however, these are modest. Another area of promise but with little progress has been international taxation, which identified some innovative instruments which were proposed and discussed. However, there has been little progress in this area because states are reluctant to surrender taxation powers to international institutions.

On domestic resource mobilization, the trends have been in the right direction but modest and variable. Developing countries have undertaken and continue to accelerate economic policy reforms, trade liberalization and financial reforms with efforts to increase savings and reduce public sector deficits. Those economies which have been successful have attracted foreign capital and mobilized domestic resources. Privatization of state enterprises have enabled public enterprises to access capital and technology for modernization and service improvements. Some countries have also developed innovative instruments to mobilize private sector funds which have been utilized for investments in economic and environmental infrastructure, power generation, water supply and sanitation, waste water treatment, solid waste collection and disposal, and reafforestation.

An encouraging trend since Rio has been the reduction of environmentally damaging subsidies on energy, water, agro-chemicals and land clearing, among others. An increasing number of countries have eliminated or reduced these subsidies leading to more efficient use of these resources. These efforts have reduced environmental degradation.

Ladies and gentlemen, as regards economic instruments such as environmental taxes and charges, significant progress has been made in the understanding and acceptance of their roles both as incentives to reduce environmental degradation and also as a source of revenue for sustainable development. Many developed and developing countries have introduced energy taxes, pollution charges and environmental bonds, among others. Empirical evidence shows that revenues from these sources have not been utilized for environmental investments. This has partially necessitated the establishment of national environmental funds (NEFS). The other reason for the establishment of these funds is the underdeveloped capital markets in developing and transitional economies.

Mr. Chairman, from the performance review of sustainable development finance that I have already alluded to, it is evident that there is a great need for the international community to institute additional efforts to address the challenges posed by chapter 33 of Agenda 21. It is worth noting that this subject was discussed by the CSD at a special session of the

United Nations General Assembly in 1997, more popularly known as "Earth Summit plus 5" or "Rio plus 5". This discussion was greatly facilitated by the work undertaken by the Expert Group Meeting on Financial Issues of Agenda 21 at its meeting in Santiago in early 1997. It is in this context that I would, therefore, like to underline the significance of this meeting. It is expected that the meeting will develop a set of action-oriented recommendations for consideration by the forthcoming sessions of CSD in the years 2000 and 2002. In your deliberations, it is expected that you will take on board the recommendations of the "Earth Summit plus 5" which concluded as follows:

First, for developing countries, ODA remains a major source of external funding requiring intensified efforts to reverse the downward trend of ODA. At the same time, all countries should address the underlying causes of this trend.

Second, private domestic and foreign capital is a major tool of economic development which requires governments to ensure a stable macro-economic environment, open trade and investment policies, and well-functioning legal and financial systems.

Third, financing the implementation of Agenda 21 will come from countries' own public and private sector resources. This requires developing appropriate policies for promoting domestic resource mobilization, including as prerequisites reforms to achieve a sound macro-economic environment, reform of existing subsidies, promotion of personal savings and access to credit. This meeting should examine these conclusions and evaluate their appropriateness in light of the fast changing global situation.

Ladies and Gentlemen, it is expected that at the end of this meeting some tangible results composed of actionable policy options will emerge for consideration by the CSD in its subsequent sessions in the year 2000. Therefore, this meeting should facilitate the work of the forthcoming CSD to enable considerable progress to be made in the areas of:

- Updating the impact assessment of the lack of financial resources and heavy external debt problems on the implementation of Agenda 21 in countries in Sub-Saharan Africa;
- Evolution of an actionable strategy to reverse the decline of ODA flows to Sub-Saharan Africa;
- Formulation of a policy strategy to attract increased flows of foreign private capital;
- Assessment of the role environmental taxes and charges could play in Sub-Saharan Africa;
- Suggestions of how policies for increasing the mobilization of financial resources for sustainable development could be integrated into the mainstream policy formulation;
- Proposals of how environmental finance schemes could be made more consistent with wider principles of economic and social policies and strategies;
- Achievement of significant progress on the issue of increasing the flow of ODA to all developing countries, not only by expressing commitment to the agreement reached at the Earth Summit but also working on developing and updating a strategy for translating the agreement into resources flows;
- Undertaking an in-depth consideration of issues concerning contribution and effects of foreign portfolio investments to sustainable development;
- Preparing a proposal for both developed and developing countries on the need for addressing the issue of subsidies in tandem with other economic, social and environment policies as well as their impacts on international trade;
- Undertaking an assessment of the prospects of more comprehensive environmental tax reform and the role that these taxes could play in developing countries in the foreseeable future; and
- Encouraging discussions on the need for increased environmental investment by the private sector given the inherent financial resource limitations of the public sector.

Ladies and gentlemen, these are major issues which require your full attention, discussions, and linkage to finance for sustainable development. No doubt, the task before you is great, however, given the high level of expertise present in this room, the team is more than equal to the challenge. I am, therefore, confident that excellent results will be achieved at the end of this meeting. I wish you very fruitful discussions.

Ladies and gentlemen, it is now my pleasure to declare this Fifth Expert Group Meeting on Finance for Sustainable Development officially open.■

WELCOMING ADDRESS

Jorge Illueca*

MR. Chairman, Distinguished Participants of the Meeting, Ladies and Gentlemen; Dr. Klaus Töpfer, the Executive Director of the United Nations Environment Programme (UNEP) wanted very much to be here with you today to launch this important Fifth Expert Group Meeting on Finance for Sustainable Development. However, he has to be present in Seattle at the launch of the next round of global trade talks. The environment is emerging as a key issue to be addressed during those discussions—in particular, the scope and extent to which environmental considerations will or should be incorporated in the new negotiations. Notwithstanding this, UNEP attaches great importance to this meeting and therefore Mr. Töpfer requested me to represent UNEP and to convey to you his support and commitment to what you intend to achieve during these deliberations.

This Expert Group Meeting is key to providing the Commission on Sustainable Development (CSD) with the analytical basis and policy options that will be discussed as part of its deliberations on the financing of sustainable development. We must also bear in mind that it will also contribute to the substantive preparations for the 10th session of the CSD in 2002, which will review progress since the United Nations Conference on Environment and Development in Rio de Janeiro in 1992.

To meet existing and impending environment and development requirements, practical and innovative thinking about revenue generating mechanisms and market incentives to bring a greater financial contribution to the environmental component of the environment and development package is required.

This practical and innovative thinking must take into account the experiences of the past decades, which show, if anything, that the causes of environmental destruction lie in poverty and in misguided development. They lie in mismanagement of natural resources, in inequity, in unfavourable terms of trade, in debt burden and in agricultural and energy subsidies. They also lie in the barriers to the transfer of technology and know-how and in short term economic planning that views natural resources and ecological processes as free goods and that does not provide due regard to the depletion and degradation of the environmental and natural resources stock.

The Fourth Expert Group Meeting in 1996 reached three broad conclusions in relation to the trends in finance for sustainable development since Rio. Firstly, the interest and activity in relation to developing innovative instruments had risen. Secondly, both official development assistance (ODA) and domestic resource mobilization have fallen far short of the commitments made at Rio. And lastly, that private flows of financial resources from developed to developing countries have expanded enormously. Foreign private capital has become the dominant source of capital for many developing countries, especially those in Asia and increasingly those in Latin America.

In the area of foreign private capital flows the Meeting reported that these flows had grown rapidly since Rio but had shifted from commercial lending towards foreign direct investment (FDI) and portfolio investment. This trend has continued and the UNCTAD 1999 World Investment Report advised that although FDI flows to developing countries declined in 1998 that decline was confined to a few countries. Technology flows, as measured by technology payments, continued to grow, partly reflecting the increased importance of technology in the production process.

The trend towards the liberalization of regulatory regimes for foreign direct investment continued, often complemented with proactive promotional measures. Out of 145 regulatory changes relating to FDI made during 1998 by 60 countries, 94 per cent were in the direction of creating more favourable conditions for FDI.

The testing of new policy approaches has many dimensions and I would urge you in your deliberations to consider a wide inclusive approach in this meeting. For example, various private and public organizations estimate FDI flows. However, there are differences in the estimates made by different institutions for the regions or countries they cover. These differences arise from differences in the time of year at which estimates are made and different methods of

* Jorge Illueca is Assistant Executive Director, Division of Environmental Conventions, United Nations Environment Programme.

estimation. UNCTAD estimates that FDI flows to developing countries and Central and Eastern Europe as a whole were $183 billion in 1998, whereas J.P. Morgan, for example, estimated flows to a group of selected developing countries and Central and Eastern Europe countries to be US $101 billion.

This simple example illustrates the difficulty of interpreting the signals of change and reporting the consequences of such change. Your challenge over the next four days in the complex area of the assessment of differing policy approaches is to read and interpret the trends so as to inform policy-makers of national governments. If the existing signals are unclear, such as through lack of data collection as suggested by the IPCC special report on technology transfer, then that message must be given to governments, along with proposals to improve such collection.

In the field of innovation we have seen continued and continuing development, particularly in relation to the Kyoto Protocol, on global warming and the market instruments embodied within the Agreement. The specification of binding commitments for industrialized nations to reduce their emissions of greenhouse gases offers an excellent opportunity to highlight how economic instruments can help realize the objectives of these agreements.

In addition to the creation of energy taxation schemes at the national and regional level that seek to internalize the costs of global warming, there are a number of other market incentives being created at a national level. There is an embryonic carbon trading system being developed by the private sector, ahead of national governments agreeing upon the modalities for such trading on an international level. Additionally, we see the creation of corporate bond issues, which seek to capture the environmental, as well as the financial attributes of an enterprise, and the World Bank has launched its US$150 million prototype Carbon Fund.

The World Bank has estimated that developing countries alone, over the next four decades, will require five million megawatts of new electrical generating capacity to meet anticipated electricity needs. This new capacity will require approximately five trillion dollars of new investment. If renewable energy technologies can capture several per cent of that market, we are looking at a potential for several hundred billion dollars of renewable energy technology sales worldwide and creation of many new jobs over the next decades.

We have high expectations for this Meeting. The United Nations Environment Programme has a special and abiding interest in sustainable development finance. We started working with forward-looking institutions in the financial services sector at the beginning of the decade and launched the UNEP Statement by Financial Institutions on the Environment and Sustainable Development at the time of the Rio conference. More than 170 financial institutions have now publicly endorsed the principles of sustainable banking and more than 80 major insurance or reinsurance concerns have endorsed a similar commitment to the environment for the insurance industry.

The economic rewards of placing environmental concerns high on the agenda are considerable. Socially responsible investment is growing at a much faster rate than the market as a whole and the interdependence of environmentalists and business is making itself more and more evident.

We have much to gain from your perspectives on the subject. This Meeting offers us a new opportunity to step out boldly from the cocoons of our disciplines to confront the various aspects of market instruments in all their complexity, and furnish cogent and creative solutions that can help governments in their drive towards sustainable development. We count on your support and the support of governments in our deliberate efforts to face the challenges — daunting as they are — that lie ahead of us.

Once again, I would like to welcome you to this meeting and wish you an intellectually stimulating discussion in looking at practical ways of creating a new architecture within which we can stimulate sustainable development finance. There is a full agenda and while the presentations may be relatively short I am sure the discussions that follow will embrace all the aspects of policy creation and implementation. I wish you well and look forward to learning of the results of your deliberations.■

INTRODUCTORY STATEMENT

Ron Lander*

YOUR Excellency, ladies and gentlemen, It gives me great pleasure to represent my Government at the Fifth Expert Group Meeting on Finance for Sustainable Development. This Expert Group has a reputation to maintain. The first four meetings were very good and they have had a valuable impact on discussions at the Commission for Sustainable Development. Rightfully so; it is not often that a group of experts of this level from academia, international organizations, governments, banks and NGOs has a chance to discuss an issue that is so essential to sustainable development. It is easier and more common to discuss the *concept* of sustainable development than to discuss its *financing*. And it is not too often that you find something that is even more complicated than the concept of sustainable development!

This is the first meeting of this Group in Africa. And it was about time. In fact, the only condition that we imposed upon the United Nations when we decided to finance this Meeting was that it should take place in Africa. The experience of the past four Meetings shows that regional issues and, more importantly, regional views and perspectives emerge during these Meetings. Of course, we are all experts and we all know what is good for the world, including Africa, but to be honest, there was not much opportunity for African voices to be heard at the past Meetings. I am sure that this Meeting will benefit from the African expertise in this room and that the documents to come out of this Meeting will therefore even be richer than on previous occasions.

The discussion on finance for sustainable development in the Commission on Sustainable Development (CSD) tends to be too much of a discussion on Official Development Assistance (ODA). I hope we can help the CSD to get beyond this discussion. Don't misunderstand me: I am not saying that ODA is not important; it is and it will be for quite a while from now. My Government therefore will maintain its present level of 0.8 per cent of our GNP for ODA. We would truly wish to see all other donors reach the internationally agreed target of 0.7 per cent. Although I am realistic enough not to expect much progress here, we should not let any country that accepted this target off the hook. But this is not the end of the discussion. And it is not even the most relevant part of the discussion. ODA is not going to solve the world's problems and the discussion should be as much on the use of ODA as on the levels of ODA. Foreign direct investment is becoming more and more important. I strongly disagree with those who for that reason say that ODA can go down. The discussion should focus on how we can make ODA instrumental in making foreign direct investment reach more countries than it does today. The discussion should also focus on how to make sure that FDI is sustainable. And the discussion should have an open eye for those countries where significant levels of FDI are not foreseeable in the near future. For those countries it may take even longer before we can start to not worry about declining levels of ODA.

I have said enough about ODA for the moment. I'm sure that ODA and the prerequisites for making it work, such as good governance, will get due attention in the upcoming meeting on Financing for Development in New York. As Agenda 21 says, the largest part of funding for sustainable development has to come from domestic sources. In this respect we all still have enough homework to do, industrialized and developing countries alike. Tax systems are not always beneficial to sustainable development, to say the least; neither are subsidy schemes. Allocation of government budgets can improve in that sense. Legislation is not always the best for reaching sustainable development. The same goes for the formal distribution of responsibilities. The societal costs of all these issues are not easy to identify, but they do exist. And the costs for reaching sustainable development are much higher if they have to compensate for these issues. In that sense it is all a matter of getting the prices right. Getting the prices right is not distorting economies, it is getting rid of existing distortions. This Group should get that message across and, more importantly, should provide concrete guidance on how to do this and guidance to the right actors.

This Meeting is important. But there is another

* Ron Lander is Head, International Environmental Policy, Instruments and Water Management Division, Environment and Development Department, Ministry of Foreign Affairs, The Netherlands.

meeting going on in Seattle that may even be more important for sustainable development. We can say what we want over here and in the CSD, and we may be absolutely right. But are we talking to the right people? Are we satisfied when the CSD report for 2000 is even better than the previous seven? Or are we satisfied when our delegations to the WTO use our documents? Or our ministers of finance? In order to make a difference, we will have to make sure that what we are saying here during these few days is not just right, but convincing and operational and has an open eye for what is considered important outside, in the real world.

My biggest frustration with sustainable development is that the concept has been kidnapped by environmentalists. Rio was not just about the environment, it was about the environment and development. Some of the documents that will be presented here have sustainable development in their title, but only environment in their content. That is a very recognizable phenomenon. Not many OECD countries send their ministers of development cooperation to the CSD anymore, they send their ministers of environment. From developing countries, we seldom see ministers of finance or planning. We should change that. We have allowed the agendas for the environment and for development to drift apart again, leading to silly discussions about sustainable *economic* development or about *environmentally* sustainable development. In our discussions, we will have to force ourselves to respect the concept as it was used by the Brundtland Commission, encompassing environmental, social and economic development. Otherwise, sustainable development may end up as we all do in real life: we are born wet, slippery and ugly and from there it only gets worse.

In short, I hope that we will be able to be analytically correct, concrete, action-oriented and follow an integrated approach. That is a lot to ask, I know. There is a saying in The Netherlands that one fool can ask more than ten wise men can answer. I have played the fool. Now it's up to you.■

INTRODUCTORY STATEMENT

Dympna Hayes*

I would like to begin by saying how pleased the Irish Government is to have had the opportunity to co-sponsor this Meeting with the Governments of Kenya and the Netherlands. I would also like to express our appreciation to the United Nations Environment Programme (UNEP) for hosting the meeting and to the United Nations Department of Economic and Social Affairs (UNDESA) for its organization. On a personal note, I would like to thank UNDESA for inviting me to attend this Meeting and also say how much I look forward to working with all of you over the next few days.

This Fifth Expert Group Meeting on Finance for Sustainable Development is continuing in its role as the preparatory process leading up to each formal discussion of financial issues of Agenda 21 in the CSD. This year's meeting of the CSD has before it for consideration the cross-sectoral theme of financial resources, trade and investment and economic growth.

The theme is certainly timely given this week's ministerial conference of the World Trade Organisation (WTO) in Seattle. The storm of protest in Seattle is delivering the clear message that many believe that globalization has not delivered on its promise of better lives for ordinary people. What is coming through loudly and clearly is that there is a strong perception that unchecked globalization can undermine consensus on open economics and societies, leading to growing political instability which, in turn, could threaten trade, investment and economic development.

If the global economy cannot be made to work for all, it will lose legitimacy in the eyes of the people of developed and developing countries alike. Harnessing the forces of globalization for the benefit of all requires action at both the national and international levels.

Economic development will promote sustainable development only when it leads to:

- increased material welfare and quality of life for everyone;
- a reduction in poverty; and
- resources for environmental protection and management.

Sustainable growth is not simply a function of investment, production and trade; it must rely also on a safe and stable environment and on good governance. Governments must work nationally and cooperate internationally to:

- pursue policies which enable those in poverty to share more of the benefits of economic growth;
- assess the sustainability of economic growth by monitoring more closely the impacts of growth on environmental and natural resource capital; and
- internalize environmental externalities using an appropriate mix of instruments.

Like our partners in the European Union, Ireland is fully committed to development cooperation and to the provision of resources to address development challenges. We have been steadily increasing our expenditure on ODA — our ODA budget has more than quadrupled in the course of the last six years. The European Union is also fully supportive of the High-level Discussion on Financing for Development which is taking place in New York at the moment.

However, most financial resources for development will come from domestic and foreign private sources. Countries should, with donor assistance where appropriate, create an environment which encourages domestic and foreign investment on suitable terms. This enabling environment should include in particular a sound macro-economic framework, participatory development and efforts to fight corruption. Public-private partnerships could also be explored across a wide range of development assistance fields to identify potential new and innovative sources of finance.

Finally, the question of the more effective use of financial resources should also be addressed. ODA must be made more effective through, for example, improved allocations between countries and sectors to better reduce poverty, and must be targeted on the poorest countries who are pursuing effective strategies to achieve sustainable development.

The need for, and importance of, coordination is continually stressed in the United Nations. However

* Dympna Hayes is First Secretary, Permanent Mission of Ireland to the United Nations.

this is a principle which should also be taken on board by the donor community. Better co-ordination of donor efforts, using, for example, the United Nations Development Framework and the Comprehensive Development Framework of the World Bank, would do much towards achieving a holistic approach to poverty eradication. We also need better performance measurement through the elaboration of indicators to measure quality as well as quantity of development assistance.

I look forward to the discussion of these themes over the next few days.■

INTRODUCTORY STATEMENT

JoAnne DiSano*

HONOURABLE Minister, distinguished representatives of Kenya, donor countries, international organizations, ladies and gentlemen; I have the honour of presenting a statement on behalf of Ms. JoAnne DiSano, Director of the Division for Sustainable Development of the United Nations Department of Economic and Social Affairs. Ms. DiSano has asked me to express her regrets for not being available to attend this meeting because of other commitments.

First, I wish to express my thanks and appreciation to the Government of Kenya and the United Nations Environment Programme (UNEP) for their kindness and generosity in hosting this Fifth Expert Meeting on Finance for Sustainable Development. At the same time I would like to thank the sponsors of this meeting, the Governments of the Netherlands, Ireland and Kenya, for their generous support. Finally, I would like to thank the policymakers and experts from Africa and other regions for their participation in this meeting.

The brief comments which I would like to make fall under three headings. First, I would like to comment on the reasons behind the current revival of the international debate on finance for development.

Next, I would like to illustrate how this Expert Group and the United Nations Commission on Sustainable Development (CSD) have taken into account the broad concept of sustainable development in their discussions on financial issues. This concept, as you are aware, emphasizes the need for pursuing simultaneously economic, social and environmental objectives, recognizes the interdependence of specific developmental policies, assigns the state a vital role, and stresses the importance of processes such as public-private partnerships.

Finally, I would like to suggest that starting with this Meeting the Expert Group on Finance for Sustainable Development will put greater emphasis on the link between capacity building and the implementation of policy reforms.

Let me elaborate briefly on the first point, the revival of the international debate on finance for development.

As you are aware, in the last two or three years the international debate on development has moved the issue of finance to centre stage. Let me give you two examples. In 1997, Governments reiterated the key role of financial resources and mechanisms for the implementation of Agenda 21 at a Special Session of the United Nations General Assembly, the so-called "Earth Summit+5". Furthermore, in November of this year the General Assembly decided to convene a high-level International Conference on Financing for Development, to be held in the year 2001.

There are a number of reasons for the current revival of interest in the financial issues of development:

The international financial crisis, which started in East Asia in 1997, caught policy-makers by surprise. Subsequent analysis revealed that there were some serious flaws in the financial infrastructure of several developing countries and that the international financial architecture also required some alterations.

Another important reason for the increased interest of policy-makers in the issue of development finance is that against the backdrop of rapidly changing production technologies, intensified international competition in export markets and growing environmental constraints, much larger injections of capital for the modernization and industrialization of developing country economies are needed than was assumed at the beginning of the 1990s.

A third reason for the increased interest in the issue of finance is that policymakers are aware that implementing the concept of sustainable development will require a number of further reforms of the national and international financial architecture. As you know, in recent years important work has been undertaken in further refining the concept of sustainable development by international organizations. In this regard, I would like to highlight the work of the OECD on indicators and the work of the World Bank on conceptualizing a comprehensive framework of development. Guidance for implementing the necessary policy reforms will come from various sources, in particular the agreements reached at the several global

* JoAnne DiSano is Director, Division for Sustainable Development, United Nations Department of Economic and Social Affairs. This speech was delivered on her behalf by Juergen Holst, Chief, Finance, Industry and Trade Unit, Division for Sustainable Development, United Nations Department of Economic and Social Affairs.

conferences of the United Nations in the 1990s.

I will now turn to the second point I would like to address, namely the extent to which the new thinking on development that is subsumed under the concept of sustainable development is reflected in the discussion on finance of this Expert Group and the deliberations of the CSD.

The concept of sustainable development recognizes that in addition to the traditional objective of economic growth, development has many other equally important objectives in areas such as social welfare and environmental protection. It is recognized that the Earth Summit in 1992 pioneered the development and endorsement of this broader set of developmental objectives and that the CSD discussion on finance in the follow-up to the Earth Summit has reflected this approach. For example, in its discussion on ODA the CSD reviewed the shift of focus to technical co-operation projects aimed at poverty alleviation and environmental protection, and in regard to international financial flows the CSD discussed the impact of foreign direct investment (FDI) on labour conditions and environmental degradation. Furthermore, based on Agenda 21 the CSD has regularly discussed the adequacy of financial resource allocation for various sectors and how resource flows could be increased through innovative mechanisms.

The concept of sustainable development recognizes also that development policies are interdependent. This applies to a number of financial policies. For example, the CSD concluded that in many cases policies aimed at increasing the inflow of private foreign capital would at the same time be beneficial for stimulating domestic private investment in sustainable development projects.

Moreover, the concept of sustainable development recognizes that governments play a vital role in development. This also applies to the role of government in the mobilization of financial resources for sustainable development. The CSD highlighted, for example, the important role of governments in institution building for financial sector development.

Finally, the concept of sustainable development recognizes that processes are as important as policies and emphasizes the particular importance of partnerships and other arrangements between government and the private sector. In regard to the mobilization of financial resources for sustainable development the CSD has advocated, for example, the leveraging of ODA through public-private co-financing arrangements.

I believe that these examples show clearly that the discussion at the CSD on finance for sustainable development has kept pace with the new thinking on development.

As far as finance for the protection of the global environment is concerned, the CSD has taken note of the financial assistance made available to developing countries through the Global Environment Facility (GEF) and other financial mechanisms of the major multilateral agreements. However, the CSD has not examined their adequacy in any great detail since this would duplicate the work of other intergovernmental bodies.

The third major issue that I would like to address is the need for donors and international organizations such as the United Nations Development Programme (UNDP), the World Bank and Regional Development Banks to become more supportive of national capacity building aimed at facilitating the increased mobilization of national and international resources for sustainable development. I would therefore like to ask this Expert Group to discuss in more specific terms than in the past the ways in which donors and international organizations could strengthen their support for national initiatives aimed at capacity building for improving the mobilization of financial resources. This could enable the CSD to better reflect the issue of capacity building in its policy recommendations and thus create a stronger link between policy development and the assessment of technical cooperation needs.

As you are aware, the work on policy development and capacity building of this Expert Group is expected to provide important inputs to the debate of the CSD on financial instruments and mechanisms for the financing of Agenda 21 at its 8th session in April 2000, which will be preceded by an intersessional meeting of the CSD in February next year in New York. The debate on finance at its 8th session is part of the 5 year work programme of the CSD which was approved at the Earth Summit + 5 in 1997. The CSD will resume its general debate on finance in 2002 when it will assess the implementation of Agenda 21 in the first 10 years after the Earth Summit.

This meeting and the forthcoming 8th session of the CSD are also expected to provide inputs for the International Conference on Financing for Development to be held in the year 2000.

I am confident that the work that you will undertake at this meeting will fully meet the expectations of the CSD and look forward to receiving the assessment and recommendations that result from this meeting with its focus on "Testing new policy approaches".■

CHAIRMAN'S REMARKS

Lin See-Yan[*]

LADIES and gentlemen, first, let me extend a warm welcome to all of you to the Fifth Expert Group Meeting on Finance for Sustainable Development. I should take this opportunity to thank the sponsors of this Meeting, the Governments of the Netherlands, Ireland and Kenya for their generous support and commend the host, the United Nations Environment Programme (UNEP), for its hospitality. I should also thank the organizer of the meeting, the United Nations Department of Economic and Social Affairs, for developing the substantive concept of the meeting and taking care of its organization.

The main purpose of this meeting is to assist the United Nations Commission on Sustainable Development (CSD) in advancing the debate on mobilizing financial resources for sustainable development at its eighth session scheduled for April 2000, which will be preceded by an inter-sessional meeting of the CSD to be held in February next year in New York. The last time the CSD debated the issue of financial resources for sustainable development was at a Special Session of the United Nations General Assembly in 1997. You will recall that the more popular name of the special session was the "Earth Summit plus 5" or "Rio plus 5" because it reviewed the implementation of Agenda 21 five years after the Earth Summit in Rio.

No doubt, the General Assembly's assessment of progress made in the mobilization of financial resources since the Earth Summit was greatly facilitated by the technical work undertaken annually by the Expert Group on Finance for Sustainable Development, particularly its Report emanating from the Fourth Meeting held in Santiago, Chile, in early 1997. For our purpose, I would like to highlight three of the major conclusions of the Assembly's assessment which, I think, are relevant for us to keep in perspective in our work here in Nairobi.

First, for many developing countries, particularly those in Africa and the least developed countries, ODA remains the main source of external funding; it is essential for the prompt and effective implementation of Agenda 21 and cannot be replaced by private flows. Hence, intensified efforts should be made to reverse the downward trend of ODA, and the underlying causes of this adverse trend should be addressed by all countries in the spirit of global partnership.

Second, private domestic and foreign capital act as a major stimulus to spur economic development and to encourage higher levels of private investment. Governments should aim at fostering a conducive environment through ensuring macroeconomic stability, implementing open trade and investment policies, and instituting well-functioning legal and financial systems. To ensure that private foreign investment is supportive of sustainable development objectives, it is essential that the national Governments of both investor and recipient countries provide encouragement, helpful regulatory frameworks and incentives for private investment.

Third, while international cooperation is very important in assisting developing countries in their development efforts, in general a significant part of the financing to implement Agenda 21 will, in the end, have to come from countries' own public and private sectors. Policies for promoting domestic resource mobilization for sustainable development must be decided by each country and should encompass sound macroeconomic reforms (including fiscal and monetary policy reforms), review and reform of existing subsidies, and the promotion of personal savings and ready access to bank credit.

Ladies and gentlemen, the agenda of this Meeting will focus on testing new policy approaches for the mobilization of financial resources for sustainable development. In this regard, the agenda has been so structured to take into consideration the main conclusions of the 1997 "Earth Summit plus 5" as well as important developments that have occurred after 1997, such as changing perspectives on ODA, the reversal of foreign private short-term capital flows and rising foreign debt in the aftermath of the financial crisis in Asia, and recent policy reforms aimed at improving the mobilization of financial resources for sustainable development.

The papers that have been prepared for this meeting are intended to provide a solid technical basis for discussion, and it is our goal to bring to the attention of the CSD a number of important policy issues and

[*] Lin See-Yan is Chairman and Chief Executive Officer, LIN Associates, Malaysia.

options that have not been (or have not been sufficiently) dealt with in the past.

I am confident that our inputs to the forthcoming session of the CSD will enable the Commission to make significant progress on at least eight important policy areas:

First, the CSD will have an opportunity to take into consideration a number of issues in financing sustainable development that are particularly critical for countries in Sub-Saharan Africa. In this regard, I expect the CSD to be in a better position to update its assessment on how the lack of financial resources and insufficient debt relief have delayed the implementation of Agenda 21 in countries in Sub-Saharan Africa. Furthermore, the CSD is expected to spell out particular strategies which may be required to reverse the decline in ODA flows to Sub-Saharan Africa and to adopt a clear policy package approach to attract an increased flow of foreign private capital, especially FDI. In addition, a review of the role which environmental taxes and charges could possibly play in Sub-Saharan Africa would be useful.

Second, I expect the CSD to discuss the dilemma of public policies aimed at effectively integrating the mobilization of financial resources for sustainable development into mainstream policymaking in more detail than it has done so in the past. In this context, it will be important to focus on the core problem of how to make environmental finance schemes consistent with the wider principles of economic and social policies, and develop the needed institutional coordination mechanisms for such integration.

Third, I expect the CSD to make significant progress on the issue of increasing the flow of ODA to all developing regions. It is now generally acknowledged that reversing the decline of ODA requires not only a commitment to the agreements reached at the Earth Summit but also continuing work at developing and updating the strategy for effective implementation. I hope that the CSD will be able to come up with a number of definite proposals on how best to update the strategy on reversing the decline of ODA that it endorsed at the "Earth Summit plus 5" in 1997.

Fourth, I expect the CSD to undertake an in-depth discussion on the contribution of foreign portfolio investment to sustainable development. The Asian financial crisis has amply demonstrated the potential for volatility in foreign portfolio investment flows and their negative impact on sustainable development. These financial flows certainly deserve greater attention by the CSD.

Fifth, in view of the severe negative impact of unsustainable external debt burdens, I expect the CSD to make a significant contribution to the most recent initiatives for debt relief and provide credible answers to key questions such as: Will the enhanced HIPC initiative lead to sustainable debt levels? Is the moral hazard problem of cancelling poor countries' debt exaggerated? And what is the contribution of debt relief to initiating and sustaining a poverty reducing development strategy?

Sixth, I expect the CSD to be in a position to suggest that both developed and developing countries need to change their current approach and mindset in tackling the issue of subsidies in isolation of other economic, social and environmental policies. The CSD will have to make a clear and convincing case for undertaking subsidy reforms as part of a wider programme of macroeconomic, social and political reform.

Seventh, as far as environmental tax reforms in developed countries are concerned, I expect the CSD to assess the prospects for more comprehensive environmental tax reforms in these countries and arrive at a realistic assessment of the role that environmental taxes could possibly play in developing countries in the foreseeable future.

Finally, I expect the CSD to continue to remain committed to its initiative to actively promote discussion on the need for increased environmental investment by the private sector. Given the scale of global environmental needs and the fact that public sector flows are not likely to increase substantially, private capital is increasingly being recognized as the primary instrument for financing sustainable development. However, for the private sector to play its full part, it must be recognized that environment friendly investment must be commercially attractive.

Ladies and gentlemen, in view of the high expectations on the outcome of the forthcoming CSD debate on finance for sustainable development, the challenges before this Expert Group are real, serious and difficult. However, given the composition and expertise of this Group and the pleasant work environment provided by this conference centre, I am sure that we will all rise to meet the challenges head-on and, at the end, will not disappoint in providing valuable inputs to the CSD.■

CHAIRMAN'S SUMMARY AND RECOMMENDATIONS

Lin See-Yan[*]

OVERVIEW

THE Fifth Expert Group Meeting on Finance for Sustainable Development was held at the United Nations Office in Nairobi, Kenya, on 1-4 December 1999. The Meeting was sponsored by the Governments of The Netherlands, Ireland, and Kenya, organized by the United Nations Department of Economic and Social Affairs (UNDESA) and hosted by the United Nations Environment Program (UNEP).

The main goals of the meeting in Nairobi were:

- to generate analysis and policy options that can assist the Commission on Sustainable Development (CSD) in preparing for its discussion of financial issues of Agenda 21 at its eighth session in 2000;
- to identify trends in finance for sustainable development since the 1997 Earth Summit + 5;
- to discuss a number of financial issues of sustainable development that are particularly critical for countries in Sub-Saharan Africa;
- to continue the discussion of a strategy for increasing official development assistance (ODA) and dealing with the issue of external debt;
- to further develop policy options for promoting the mobilization of private foreign and domestic capital for investment in sustainable development;
- to discuss the possibilities of subsidy reform in the framework of a broad policy package;
- to assess the potential and actual contribution of environmental taxes and charges to the financing of sustainable development; and
- to provide an overview of how innovative financial mechanisms are applied in major economic sectors of developed and developing countries.

Over fifty international experts on finance and development from both developed and developing countries attended the Meeting. These experts included representatives from the private and public sectors, universities, non-governmental organizations (NGOs), government ministries, and international institutions. The participants expressed their personal opinions as experts, and not necessarily the viewpoints of the organizations with which they are affiliated. Dr. Lin See-Yan, former Deputy Governor of Bank Negara Malaysia, now a private banker, served as chairman of the Meeting. Carl Greenidge, Deputy Secretary-General of the African, Caribbean and Pacific Group of States Secretariat, served as Deputy Chairman. The Agenda of the Meeting and a list of participants can be found in Annexes I and II.

The Meeting recalled that sustainable development is characterized not only by economic growth in terms of GDP per capita, but also by environmental protection and improved social conditions such as poverty reduction, increased literacy and life expectancy. While there may be trade-offs among these economic, social and environmental dimensions of sustainable development, policies that address them simultaneously were the focus of the meeting.

Achieving the goals of sustainable development requires both international and domestic commitments. Any assessment of progress towards these goals needs to include a review of bilateral and multilateral aid effectiveness, the impact of private investment, and the effectiveness of domestic public investment policies. While the Meeting strongly endorsed the urgent need for arriving at a rising trend of ODA, it recognized that this by itself would not be sufficient to reach the goals of sustainable development in developing countries. Attention must also be paid to improving the effectiveness of ODA, the responsiveness of private investment to sustainability concerns, and the effectiveness of domestic investment and regulatory policy. In the context of Sub-Saharan Africa, the low level of private savings and investment, including foreign direct investment (FDI), is a particular cause for concern.

This Summary is not intended to reflect all the views and suggestions made at the meeting, nor does it represent a negotiated text. Rather, its aim is to provide a comprehensive summary of the themes of the discussions. The Summary is organized as follows: section 2 reviews recent trends in sustainable development finance; section 3 focuses on the integration of environmental finance into mainstream public finance; section 4 analyses new policy approaches in international finance; section 5 reviews new policy approaches in domestic finance; and section 6 gives an overview of innovative mechanisms for sector fi-

[*] Lin See-Yan is Chairman and Chief Executive Officer, LIN Associates, Malaysia.

nance. The final section contains some proposals for future work on finance for sustainable development.

RECENT TRENDS IN FINANCE FOR SUSTAINABLE DEVELOPMENT

While the Fourth Expert Group Meeting in Santiago (Chile) in 1997 reviewed trends in development finance since the United Nations Conference on Environment and Development (UNCED), this Meeting reviewed and updated events since 1997, in particular the impact of the Asian financial crisis and the continuing negotiations on the implementation of the Kyoto Protocol. Particular attention was given to finance for sustainable development in Sub-Saharan Africa.

The Asian financial crisis that began in July 1997 dealt a significant blow to the previously high-performing economies of East and South East Asia. It also had reverberations in other regions. Many countries that faced financial contagion in 1997 have had to significantly devalue their currencies and, in some cases, accept stringent conditions from the International Monetary Fund (IMF) and World Bank in return for emergency infusions of resources to keep their economies afloat.

Recovery from the financial crisis in Asia and other regions represents a major challenge for sustainable development. In various countries there is a renewed interest in institutional reform, particularly in the financial sector, and an urgent need for new approaches to broader-based policies that address poverty, as well as sustainable resource use and environmental management.

The on-going negotiations over the Kyoto protocol and an international climate change regime have introduced a new means for sustainable development finance. The Clean Development Mechanism (CDM) allows signatories to the Kyoto protocol to meet their emissions targets under the treaty by financing cleaner development in developing countries as an alternative to making relatively expensive emissions reductions at home. While the details of the CDM remain to be negotiated, there has been significant interest shown by the private sector in this mechanism. Developing countries would be compensated with financial resources and technology transfers in exchange for providing environmental services such as emissions reduction. However, the promise of CDM, which provides an opportunity to increase financial flows to developing countries for sustainable development, is yet to be realized.

Sustainable development in Sub-Saharan Africa remains an elusive goal, despite progress in democratic and economic reforms in several countries. The subcontinent is not well integrated into the world economy and remains poor. Poverty and unsustainable economic practices reinforce each other, and conflicts in some Sub-Saharan African countries have diverted funds away from expenditures for sustainable development. The AIDS epidemic and tropical diseases, such as malaria, continue to extract both an economic and human toll.

However, economic growth in Sub-Saharan Africa has improved somewhat, mainly as a result of macroeconomic reforms that many countries have been pursuing throughout the 1990s. According to the World Bank, real GDP grew at an average rate of 3.8 per cent in 1994-1997, compared with an average annual rate of about 2.0 per cent in the 1980s and early 1990s. Unfortunately, this fragile recovery is to a large extent financed by the exploitation of natural resources, and social groups have not equally shared the gains. Continued poverty means that Sub-Saharan Africa remains a prime candidate for increased levels of ODA from bilateral and multilateral sources, but experience to date suggests that aid alone will not effectively solve Africa's problems. In addition, national governments need to continue building a political consensus for sustainable development.

INTEGRATION OF ENVIRONMENTAL FINANCE INTO MAINSTREAM PUBLIC FINANCE

The policy framework for the mobilization of financial resources is based on the concept of sustainable development with its economic, social, and environmental dimensions. Since the bulk of financial resources for sustainable development needs to come from domestic sources, the policy framework for mobilizing domestic resources is of particular importance. The main options include efforts at strengthening domestic financial markets, public expenditure reforms, implementing environmental taxes and political commitments to redirect financial resources through macroeconomic and structural reforms.

As domestic financial resources need to be supplemented by external flows, national policy frameworks need to facilitate the inflow of ODA, Other Official Financial Flows, FDI and net foreign portfolio investment. Furthermore, the management of external debt needs to be addressed.

An important issue in designing the policy framework for the mobilization of domestic financial resources is the integration of environmental finance into mainstream public finance. Implementing the environmental component of sustainable develop-

ment goals requires cooperation between various ministries, in particular the ministries of finance and environment. Many times, cooperation becomes difficult because of conflicts of interest between these ministries. Therefore, there is an urgent need to develop guidelines that can alleviate short-term conflicts and mainstream the financing of the various components of sustainable development, in particular environmental expenditures.

It is generally accepted that public finance should be designed to achieve allocative efficiency. This requires that all funds collected by the government from taxation and transfers (including environmental taxes and transfers) should be consolidated and then disbursed to specified activities so that the marginal benefit from all activities is equalized. Allocative efficiency is most likely when government revenue allocation is determined in an atmosphere of transparency and accountability.

Moreover, allocative efficiency is achieved if no funds collected from a particular source are specifically earmarked, i.e., funds can only be spent on a designated activity. In practice, however, there is evidence that citizens are more in favour of financing increases in environmental investments when earmarking is used. When governments face tight budget constraints because of external obligations or a small tax base, earmarking may be an acceptable last resort method of financing the environmental dimension of sustainable development. Accepting this pragmatic approach may alleviate the tensions between traditional public finance responsibilities and responsibilities for environmental investment. Therefore, the following policy options could be considered:

- Since earmarking is only a second best solution, attempts should always be made to finance environmental investment from general revenues;
- When earmarking is necessary to finance environmental expenditures, it should be explicitly acknowledged that this method of financing is expected to be temporary;
- Ministries should be required to disclose all earmarked funds in their control and the specific uses of these funds. This tends to make officials more accountable for the effective use of earmarked revenues;
- Measures that mitigate possible inefficiencies of earmarking should be taken. For example, cost-benefit analysis should be used to identify investment priorities. Furthermore, strict expenditure control, accountability and transparency should be achieved;
- Developing countries should receive additional assistance for increasing their capacity to carry out effective cost-benefit analysis of projects.

NEW POLICY APPROACHES IN INTERNATIONAL FINANCE

As noted at the 1997 Fourth Expert Group Meeting in Santiago, the structure of external financial flows to developing countries in the 1990s is vastly different from that of previous decades. The role of private financial flows in the financing of sustainable development has increased significantly, while the share of ODA has decreased.

In general, new policy approaches to international finance, both public and private, must take into account the impact of globalization on public and private flows to developing countries. They must also take into consideration the heightened interest in large scale debt relief as a result of the enhanced Heavily Indebted Poor Countries (HIPCs) Debt Initiative agreed upon at the 1999 meeting of the G-7 countries in Cologne. An assessment of the effects of globalization also needs to take into account the implications of the Asian financial crisis for sustainable development.

With regard to external public flows of resources, key considerations include the need for arriving at an increasing trend of ODA as a percentage of GNP, and the need for improving the effectiveness of ODA in achieving sustainable development goals. This is particularly important in Sub-Saharan Africa, the poorest developing region and the region that receives relatively little private capital. As for private capital flows, the implications of the narrow range of recipient countries of these resources for aid policy must be considered. In addition, an assessment of the potential of private resources to advance sustainable development needs to be undertaken.

Finally, given the importance of debt relief for HIPC countries, a review of policies to improve finance for sustainable development must consider whether the promotion of sustainability provides an additional rationale for debt relief, and to what extent sustainable development goals will be furthered if more substantial debt relief becomes a reality.

Official Development Assistance (ODA)

Defining a new policy agenda

It was noted that the Earth Summit+5 in 1997 called for working out strategies that would increase donor support for aid programmes and revitalize the commitments that donors made at UNCED in 1992. At the Fourth Expert Group Meeting in Santiago,

Chile, three elements of a new aid strategy were emphasized. First, both donors and recipients need to reassert the primacy of the sustainable development goals of aid over short-term commercial and political motivations. Second, aid recipients need to maintain progress towards implementing sound economic, social and environmental policies. And third, donors and aid recipients need to improve aid coordination to reduce the risk of programme duplication and programmes working at cross-purposes.

It was agreed that since UNCED+5 three developments had a major impact on the aid debate: the international financial crisis in 1997-98, the increasing concerns related to globalization, and the growing awareness of the importance of international public goods such as the global environment and international peace. While developing countries are recovering from the 1997-98 financial crisis, their growth prospects for the foreseeable future are lower than the levels achieved in the pre-crisis 1990s. Little is left of the euphoria that characterized the first half of the 1990s when private flows to emerging markets soared. Furthermore, the benefits of globalization in terms of employment and wealth creation have been disproportionately reaped by developed countries, so that the GDP per capita gap between the rich and poor countries has further increased. In addition, income inequality has risen in a number of developing countries. Finally, in the second half of the 1990's the preservation of international public goods has been increasingly considered by donors in their aid policies.

As a result of these developments since UNCED+5, a number of policy changes have become necessary. For example, in view of the current unsatisfactory trend of ODA, donor countries that do not yet meet the 0.7 per cent of GNP Rio commitment should do so as soon as possible.

In addition, in view of the rising wealth inequality between developed and developing countries and within some developing countries, development strategies and aid policies must begin to focus on inequality in addition to the current focus on the reduction of absolute poverty.

Furthermore, in view of the Asian financial crisis and other relevant experience with aid conditionality, it is now generally agreed that conditionality that is unilaterally imposed by donors does not promote lasting reform. It was emphasized that the spirit and process by which economic policies are identified and agreed upon between donor and aid recipients is very important, and that the goal should be consensual policies that are based on mutual commitment to bring about policy improvements that are needed to make aid work.

Finally, in order to better use ODA to facilitate the integration of developing countries into the process of globalization, it is useful to differentiate between various types of developing countries and address their particular concerns. At one extreme are the middle-income countries that have become largely integrated into the world economy (emerging market economies). At the other extreme are the poorest countries that have become increasingly marginalized. And somewhere in between are the developing countries that face both forces of integration and marginalization (countries that are prone to bouts of integration and exclusion).

Emerging market economies, particularly those in Asia and some Latin American countries, receive the vast majority of FDI and foreign portfolio investment. ODA is less important to these countries for poverty alleviation and environmental protection, but support from international financial institutions is necessary to help these countries improve the institutional infrastructure of their financial sectors. The poorest countries, in particular in Sub-Saharan Africa, are most in need of continued and increased ODA. In these countries poverty remains the paramount concern. ODA should be more focused on these countries and should be carefully targeted for maximum effectiveness. For developing countries that are prone to bouts of integration and exclusion, aid should be focused on reducing poverty and inequality and target, for example, the promotion of small businesses.

ODA and sustainable development in Sub-Saharan Africa

Sub-Saharan Africa remains the region most dependent on ODA relative to FDI and other flows of private capital. Nonetheless, ODA flows to Sub-Saharan Africa have declined over the past two decades. According to the latest OECD data, net aid flows from all sources, i.e., flows from Development Assistance Committee (DAC) governments and multilateral agencies, to Sub-Saharan African countries were $19.6 billion in 1993, $18.1 billion in 1995 and $16.4 billion in 1997. As a share of total aid disbursed, Sub-Saharan Africa's portion remained approximately constant in the 1990's, at around 30 per cent.

There are few indications that the level of ODA will significantly increase in the near term. It is thus all the more important for developing countries in Sub-Saharan Africa to concentrate on improving the effectiveness of aid. Aid works best in an atmosphere of political and macroeconomic stability and its effec-

tiveness should be assessed using the criteria of sustainability. Aid coordination and management could be improved in various ways:

- At the national level, African governments could increase their cooperation with aid distribution agencies. In addition, checks and balances are needed to coordinate the demands of bilateral and multilateral donors, to deter corruption, and to ensure that aid meets stated sustainability goals;
- African countries need to ensure effective use of ODA; administrative, political, and economic bottlenecks to full disbursement must be identified and removed. Donors also need to ensure that conditionalities that tend to impede effective utilization of ODA are removed. Governments should direct more of the ODA they receive towards promoting the small business sector;
- The role of regional institutions should be strengthened. In Sub-Saharan Africa, many environmental issues such as deforestation and desertification are transnational in nature and cannot be adequately addressed by any individual government. Therefore regional development banks could play an effective role, subject to their charters and defined objectives;
- Aid projects should be chosen on the basis of their potential for capacity building and their ability to further sustainability goals.

Debt

It was recalled that the Earth Summit+5 in 1997 had welcomed the Debt Initiative for the Heavily Indebted Poor Countries (HIPC) as an important development to resolve the multilateral debt problem. In addition, the Expert Group had concluded at its Fourth Meeting in Santiago that effective and flexible implementation of the Initiative promises to reduce debt as an impediment to sustainable development in participating countries. After three years of experience with the HIPC Debt Initiative, it was felt that while the Initiative was an improvement over previous rescheduling exercises, its process was too slow and the debt relief provided was not adequate to achieve debt sustainability, in particular for countries that export primary commodities with volatile prices. Therefore, the Enhanced HIPC Debt Initiative proposed at the G-7 Cologne Summit should be particularly welcomed since it not only aims at bringing about sustainable debt levels but also assists in promoting poverty reduction.

The magnitude of the debt burden of HIPC countries, most of which are in Sub-Saharan Africa, has been well documented. Recognizing that the debt-export ratio of these countries is unsustainable and that there is little realistic possibility of existing debt ever being paid off, countries committed to reform will be eligible to receive significant debt relief. In Sub-Saharan Africa, some countries have already qualified for the Enhanced HIPC Debt Initiative.

To the extent that under the Enhanced HIPC Debt Initiative additional resources are made available and used for social investments, the prospects for sustainable development will improve. However, little additional revenue for public expenditure may in fact become available as a result of the Enhanced HIPC Debt Initiative if debt relief is financed from funds that were earmarked for ODA or if the debt that is cancelled had little prospects of being serviced anyhow. Moreover, debt relief cannot resolve the problem that HIPC countries will remain vulnerable to commodity price volatility and declining terms of trade.

Foreign Direct Investment and Foreign Portfolio Investment

Foreign direct investment (FDI) and foreign portfolio investment (FPI) are increasingly important sources of external finance for developing countries. According to the OECD, private flows to developing countries totalled $53 billion in 1991 and $292 billion in 1996. These private flows are concentrated in several important emerging economies such as China. FDI in Sub-Saharan Africa is directed primarily towards resource-rich economies.

The volume of FDI and FPI needs not only to increase but also be made more supportive of sustainable development goals. Furthermore, in particular the volatility of FPI needs to be reduced.

A critical concern is the increase of private capital flows to Sub-Saharan Africa, both by enhancing the attractiveness of national economies and the access of investors to regional financial markets. There is also a need for capital exporting developed countries to create conditions that will encourage the flow of private capital to Sub-Saharan Africa.

Increasing the contribution of FDI and foreign portfolio investment to sustainable development

Environmental FDI, such as investments in cleaner production technologies, is generally not considered attractive by foreign investors. Furthermore, their preference for resource extractive investments tends to compromise sustainable development goals, even though these investments have brought much needed capital to poor countries.

The Fourth Expert Group Meeting in Santiago noted that most FDI does not gravitate towards countries with lower environmental standards or lax en-

forcement. Recent research has brought further empirical evidence to support this conclusion. Nevertheless, increased efforts should be made to monitor the environmental performance of foreign investors in different sectors, in particular the resource-using sector.

To insure that FDI helps raise the average environmental performance in recipient countries, host countries may consider entering into benchmarking agreements with foreign companies in which they commit themselves to maintaining the highest social and environmental standards and reporting regularly on their performance.

In referring to recent work undertaken by the OECD, recommendations were made to improve policy and institutional frameworks for further integrating FDI and environmental policy goals. This would also require the strengthening of cooperation between different ministries and between government, industry and NGOs.

There was general agreement that more research needs to be undertaken to formulate policies for the promotion of FPI and assess its impact on sustainable development. It was pointed out that FPI could promote sustainable development in various ways because it is fungible, flows mainly to domestic firms and helps strengthen the process of domestic capital market development. However, at the same time FPI can also lead to disruptions of sustainable development because it tends to be more volatile than FDI.

Attracting increased flows of private foreign capital to Sub-Saharan Africa

It can be expected that private capital flows into developing countries, especially to emerging markets, will continue to grow rapidly into the foreseeable future. The challenge is to attract more foreign investment into the poorer countries, and direct it to sustainable development activities. Of particular concern is foreign private investment in Sub-Saharan Africa.

Private investment rates in Sub-Saharan Africa are much lower than in other developing regions. This suggests that the returns to investment in the region are not sufficiently high to compensate private investors for real or perceived risks. In other words, in risk-adjusted terms, returns to investment tend to be inadequate. A policy package that reduces the risk factors to foreign investment should include the following elements:

- A strong commitment to needed macroeconomic reform along with political stability;
- Strengthened domestic institutions, including the central bank and the judiciary;
- Legal recourse in the event of default or non-performance, greater sophistication of statutes and enhanced legal capacity for dispute resolution;
- Regional market integration and regional harmonization of standards and practices;
- Rationalization of capital markets to increase liquidity and provide access to venture capital for domestic investors, particularly smaller businesses. This will require, for example, an upgrading of national financial infrastructures and greater reliability and comparability of national financial data;
- Deployment of ODA to enhance the financial infrastructure of countries;
- Incentives and voluntary agreements that enhance corporate governance to ensure that FDI does not compromise long term sustainable development goals.

NEW POLICY APPROACHES IN DOMESTIC FINANCE

Subsidies

It was reiterated that there is still a need for both developed and developing countries to reduce or eliminate subsidies that conflict with sustainable development goals because they encourage over-use of inputs and tend to reduce social welfare. Examples of such subsidies include price supports for final goods and subsidization of key inputs.

It was agreed that the removal of subsidies is extremely difficult politically. In effect, the subsidies create economic rents, which become an economic asset for their recipients. Moreover, the competition for these rents can promote corruption.

Subsidy reform is complex and unlikely to succeed without a gradualist approach that is pursued in the framework of wider political, economic and social reforms. A policy package aimed at subsidy reduction should therefore include the following elements:

- To deal with the political dimension of subsidy reform, public awareness campaigns concerning the nature and scale of prevailing subsidies should be initiated. For example, the transparency of subsidy policies should be increased by registration of special interest donations to political campaign funds, and the influence of special interest groups should be curtailed by limiting the size of such donations. Furthermore, to build political will for subsidy reduction and increased transparency, annual national reports that identify major subsidies and provide estimates of their costs should be prepared and published. Based on these reports, an

international reporting system should be established to assess the worldwide economic, environmental and social impacts of subsidies;
- In regard to the economic dimension of subsidy reform, there is a need to measure the efficiency of subsidies in reaching their stated goals and a need for phasing out subsidies gradually, according to a pre-announced time schedule. Furthermore, efforts should be made to determine who is bearing the cost of subsidies. The contribution of privatization to subsidy reduction appears to be ambiguous. Privatization tends to reduce subsidization because it exposes firms to market forces, but it may also create unintended rents for the private sector;
- With regard to the social dimension of subsidy reform, it is necessary to acknowledge that one of the main goals of subsidies, the protection of the poor, in many cases is not achieved in practice. Examples include the subsidization of water, agricultural inputs and housing. Subsidy reforms need to be accompanied by measures that address their social implications for the poor. In some cases, temporary compensation of those who lose from reform could be considered.

Unfortunately, experience with testing this "package approach" is still too limited to draw general conclusions. In particular, more work must be done to determine how governments can ensure that explicit subsidies are not simply replaced with hidden subsidies. Furthermore, more guidance needs to be given to governments with respect to environmental subsidy policies. For example, it has been shown that subsidies for pollution abatement tend to make the polluting industry more profitable, attract more firms into the industry and therefore worsen pollution in the long run.

Environmental Taxes and Charges

There is an increasing amount of experience with environmental taxes and charges, in particular in developed countries. This experience confirms that these instruments can improve cost-effectiveness relative to conventional regulations as well as bring positive environmental effects. Tax fraud with environmental taxes is more difficult than with income taxes; this provides an additional benefit to the use of environmental taxes. A major barrier to the use of environmental taxes and charges in developing countries is the lack of institution building. Furthermore, there are complex tax design requirements and the mainstream public finance agencies have limited experience in dealing with the introduction of such taxes.

In developed countries, environmental tax reform has accelerated in European Union (EU) member countries. These countries are embarking on broad-based environmental tax reform in which distortionary taxes on labour are being gradually replaced with environmental taxes in a revenue-neutral fashion. These countries have found that the barriers to the implementation of such taxes, particularly energy taxes, can be mitigated through careful tax design. The most important of these barriers is political opposition resulting from concerns over the negative effects of pollution taxes on international competitiveness. This is commonly referred to as the "pollution haven" hypothesis, which is not supported by empirical evidence. In any event, international coordination may lessen any such effect.

There are also concerns that energy taxes will result in a loss of jobs in energy-intensive sectors. This has been addressed by the use of differentiated tax rates on transport, industry, households, and the gradual implementation of the new taxes. Environmental taxes are also indexed to inflation to ensure that they remain effective.

The experience in the EU suggests that developed countries may benefit from the increased use of environmental taxes and charges, provided that they are carefully designed. Furthermore, environmental taxes can help to integrate environmental dimensions into traditional fiscal policy.

Developed countries should be encouraged to further promote green budget reform by charging for environmental services and infrastructure and internalizing costs through environmental taxes. Moreover, green budget reform commissions involving major stakeholders could help to overcome political barriers to environmental taxes.

Private Sector Participation

While the issue of private sector participation in the financing of sustainable development has featured prominently in the work of the CSD and the Expert Group in the UNCED follow-up, there is still a lack of a unifying analytical framework that brings together the wide range of experiences in both developed and developing countries. Moreover, the largely anecdotal success stories of private sector participation tend to focus on the environmental dimension of sustainability and neglect the important social aspects of sustainability.

In analyzing recent trends in private sector participation, the Meeting focussed on the impact of private sector investment on the local environment and in this context addressed also the impact of privatiza-

tion. Participants expressed particular concern over the impact of the strong growth of private transportation and the increased exploitation of natural resources on the local environment. Furthermore, participants emphasized the importance of privatization as a source of finance for sustainable development. There was also some discussion on the role of the private sector in the financing of global environment protection, and participants felt that in the next decade the private sector can be expected to play a much greater role than in the past once the mechanisms of the Kyoto protocol are fully implemented.

The policy discussion identified major weaknesses in the promotion of private sector participation in the financing of sustainable development. As far as the enforcement of environmental regulations is concerned, it was emphasized that the whole system of regulations, monitoring and compliance requires capacity-building and greater involvement of civil society.

As to the role of privatization, the important role of the regulatory framework for achieving a positive impact on sustainable development was emphasized. Moreover, it was felt that there is a need to further analyze why a number of privatizations had a negative impact on sustainable development.

In the area of private sector portfolio investment, there is increasing evidence that corporate environmentalism is becoming mainstream practice; pension fund managers and trustees of charitable organizations have expressed interest in financing socially responsible investments (SRIs). This interest is heightened by evidence that financial markets do reward firms for good environmental performance. The following policies for promoting socially responsible portfolio investments should be considered:

- Introducing environmental liability legislation. This creates an explicit link between environmental risk and financial risk that can be priced by the equity markets;
- Enacting regulations that promote environmental and socially responsible screening of investments. For example, the United Kingdom requires all pension funds to report on their SRI policy. Transition economies now designing pension schemes should also consider such rules;
- Developing and standardizing a screening methodology for benchmarking and ranking investments according to sustainability criteria;
- Reforming fiduciary legislation to approve SRIs;
- Identifying and explicitly packaging SRIs, particularly in emerging markets.

INNOVATIVE MECHANISMS IN SECTOR FINANCE

The past ten years have witnessed the development of innovative instruments for sector finance, especially for the infrastructure sectors such as power, water, sanitation and public transport. This is a result of (i) an increasing realization that experience with the traditional model of public provision and financing has been disappointing in terms of quality of service, coverage and costs, and (ii) declining sources of finance as ODA stagnated and public expenditures were cut. Governments are seeking private capital at home and from abroad to meet the infrastructure-financing gap and as a means of introducing market mechanisms to improve the quality of service.

At the same time, financial markets have evolved in complementary directions by developing innovative financing instruments. These include public-private partnerships, new forms of credit guarantees, sub-national financing without sovereign guarantees, new micro-financing mechanisms for the informal and rural sectors and joint ventures. Some of these instruments, for example, have been of interest to institutional investors for infrastructure projects. Similarly, institutional changes in developing countries such as decentralization and devolution of taxing power to local governments have created opportunities for sub-national governments to access the international capital market without relying on central government guarantees.

While these innovative financing mechanisms have accessed new, previously inaccessible sources of funds for sector investments and, in combination with a more realistic pricing of services, have enhanced the financial sustainability of sectors such as power, water, sanitation and transport, they have not necessarily enhanced environmental sustainability. Furthermore, despite the obvious similarities among the innovative financing instruments in sector finance, there are also significant differences.

In the power sector, for example, the main innovations have been in terms of deregulation and the introduction of competition through independent power producers (IPPs). Deregulation has allowed energy prices to be gradually freed to reflect the full cost of supply. The energy utilities have begun to access domestic and foreign capital markets by demonstrating to investors acceptable financial practices and competitive returns. However, the new financing mechanisms for the power sector are not without problems with regard to environmental sustainability. The financial incentives to investors favour conventional thermal power, and low energy prices for consumers

(as a result of competition) favour increased energy consumption.

Renewable energy is generally more expensive for consumers than conventional technology, in part because of fossil fuel subsidies, a failure to internalize the environmental benefits of renewables and the environmental costs of fossil fuels, low costs of fossil fuels, lack of support for research and development in the sub-sector, and untapped scale economies. Recent innovations include "percentage renewable energy requirements" for power distribution companies and green energy procurement policies. Policy reforms should promote full cost pricing of fossil fuels, incentives for R&D, and financing mechanisms tailored to the scale of renewable energy.

In the water sector, the major innovation of the last decade is the increased access to domestic and international capital markets through (i) build-operate-transfer (BOT) arrangements, (ii) public offerings of shares of municipal water utilities, (iii) issuance of municipal revenue bonds secured by user fees, and (iv) establishment of municipal development banks. For further development of these financial mechanisms, it is imperative that there is a stable investment environment in the sector, including: predictable fiscal relations between local and central governments; autonomous public utilities with secure income; transparent city budgets; protection of creditors' rights; and an independent regulatory body. Bundling water and sanitation services, fee amortization and micro-financing schemes have also contributed to increased financial sustainability of the sector.

The transport sector has benefited from many similar financial mechanisms. BOT and related mechanisms have been used in the construction and operation of toll roads. Privatization through public bidding has been used to improve urban transport systems, such as metro and rail services in Latin America. To ensure environmental sustainability along with financial sustainability, environmental costs must be fully internalized into the cost of private vehicle ownership and use. Public bidding process must be designed to encourage bidders to take into account the environmental costs and benefits of their potential investment. In Africa, earmarked taxes and fees have been combined with the creation of autonomous road agencies to maintain the rural road system and improve the collection of fuel taxes.

Sustainable forestry management, which has traditionally been difficult to finance, has received a financial boost from emerging carbon markets, the Clean Development Mechanism (CDM), bio-prospecting contracts with pharmaceutical companies, and the rapid growth of eco-tourism. Furthermore, some countries have introduced systems of payments for watershed protection and other environmental services. Despite this progress, much remains to be done to actually implement CDM, to further develop carbon markets, to fully price access to national parks, to develop trust funds for forest protection, and to ensure that local stakeholders benefit from these innovative financing mechanisms.

PROPOSALS FOR FUTURE WORK

It is proposed that the CSD supports research in the following areas:

- Research is needed to determine the relationship between foreign investment and sustainable development. This would help to identify which types of foreign investment contribute most significantly to sustainable development and to determine which policy levers should be used to increase the compatibility of foreign investment with sustainable development;
- Research is also needed to investigate whether globalization and sustainability goals provide a new and compelling rationale for debt reduction and a rising trend of ODA;
- Calculations of the magnitudes and costs of unsustainable subsidies should be improved to provide additional political support for their continued reduction as well as insight into the effect of subsidy removal on the poor;
- Research should be undertaken on green budget reforms;
- Research should be undertaken on capacity and institution building for the mobilization of financial resources for sustainable development in order to respond better to developing countries' requests for technical assistance;
- In all proposed research work the cooperation of civil society should be sought.

In view of the complex issues related to the mobilization of financial resources for sustainable development, it is suggested that the CSD continue promoting expert meetings on cross-sectoral and sectoral issues with a focus on finance for sustainable development for the implementation of Agenda 21.

Finally, recognizing that focus was put on developing countries in Asia, Latin America and Africa in previous Meetings, and to support the preparations for UNCED+10 in 2002, it is proposed to convene the Sixth Expert Group Meeting on Finance for Sustainable Development in 2001 and include in the agenda a number of financial issues of Agenda 21 that are of particular importance for countries in Central and

Eastern Europe. The OECD expressed its interest in co-organizing such a meeting and proposed to convene it at the Regional Environmental Centre in Budapest, Hungary.■

TAKING STOCK OF SUSTAINABLE DEVELOPMENT FINANCE IN SUB-SAHARAN AFRICA

T. Ademola Oyejide[*]

EXECUTIVE SUMMARY

Taking stock of long-term finance for sustainable development in Sub-Saharan Africa (SSA) involves several tasks. This paper addresses these tasks by reviewing the broad trends in investment and savings in Africa, examining the investment-savings gap that suggests the need for external resource inflows, and identifying the key components of external resource flows to SSA. Finally, the paper discusses the impact and the effectiveness of external resource inflows and draws some policy conclusions.

The paper builds on the observation that the economic growth performance of SSA countries has been poorer than that of other developing regions. Attempts to explain this growth performance uncovered inadequate investment and low returns to investment as key contributory factors. They also suggest that long-term finance remains the key to the region's investment and growth.

The average gross domestic investment as a proportion of GDP in SSA countries has been lower than the corresponding average for all developing countries. In addition, the gap in investment rates between SSA and other developing regions has widened from 6-8 percentage points in the 1960s to 10-15 percentage points in the mid-1990s. Low investment rates in SSA countries can be traced to low domestic savings, which are, in turn, explicable in terms of the region's low income, underdeveloped financial institutions and markets that constrain savings, and massive capital flight from the region. Against this background, various estimates suggest that African countries will need substantial, foreign long-term financing if they are to achieve reasonable, poverty-reducing, real GDP growth rates.

This is not new. Domestic resources were inadequate to finance even the limited investment rates that Africa achieved since the 1960s; the difference has typically been sourced externally. But while the share of SSA countries in total private capital flows to developing countries in 1977-82 was almost 9 per cent, the share had fallen to less than 2 per cent by 1990-96. In spite of this fall in relative share, however, as a percentage of gross domestic investment, the stock of FDI in the SSA countries in 1995 was 17 per cent compared to 14 per cent for Asia and 18 per cent for Latin America.

Official development assistance (ODA) flows have played a predominant role in financing development in SSA since the early 1960s. As late as 1996, ODA accounted for as much as 53 per cent of the total net external resource flows to SSA. Although total ODA to developing countries fell by 20 per cent in real terms during 1992-97, ODA flows to SSA have remained largely static in the 1990s. However, some analysts suggest that ODA flows to SSA are likely to suffer a long-term substantial decline beyond the 1990s.

The literature suggests that the heavy reliance of SSA countries on external development finance is not without some inherent disadvantages. In general, the level of ODA and per capita economic growth of recipient countries have shown no systematic relationship. Aid and growth appear to be correlated only in countries where economic management was good. In addition, large private capital flows may, through exchange rate appreciation, threaten macroeconomic stability and impair the export competitiveness of SSA countries.

In general, foreign private capital typically finances only a small fraction of total domestic investment. Hence, external resource inflows are not a substitute for domestic capital formation. The solution to the problem of low growth in SSA must be sought through policies that increase both domestic investment and savings.

* T. Ademola Oyejide is Professor, University of Ibadan, Nigeria. The author wishes to gratefully acknowledge the generous assistance of Abiodun Bankole.

INTRODUCTION

THE economic growth performance of the countries of Sub-Saharan Africa has been poorer than that of any other region of the developing world, particularly since the mid-1970s. Africa's real GDP annual growth rate was 4.7 per cent during 1965-73. While this performance was poorer than that of East Asia (7.4 per cent) over the same period, it was better than South Asia's 3.7 per cent annual real GDP growth rate. The subsequent trajectories of growth of Africa and the other developing regions diverged quite significantly; while Africa's growth decelerated, that of other regions accelerated.

In particular, Africa's average annual real GDP growth fell to 2.8 per cent during 1974-82 (a decline of 40 per cent when compared with the growth performance over 1965-73) and declined further to 2.2 per cent in 1983-91. A tentative recovery appears to have been under way from the mid-1990s when Africa's GDP growth rate approached 5 per cent in a couple of years. But the average annual real GDP growth over the 1992-98 period was only 3.0 per cent or a full three percentage points below South Asia's growth rate and six percentage points below that of East Asia over the same period.

Translated into growth of real GDP per capita, Africa's growth performance fell from an annual average increase of 2.3 per cent in 1965-73 to -0.3 per cent during 1974-82 and -0.7 per cent in 1983-91. The tentative recovery noted above shows up in the 0.4 per cent growth rate of per capita GDP during 1992-98. The rather chronic and dramatic failure of economic growth which Africa has suffered over the last 2-3 decades has turned it into the world's lowest-income region.

A fairly large and growing literature has developed around attempts to explain this growth performance and to identify the key factors that have influenced it. In providing what is perhaps the best review of this literature, Collier and Gunning (1999) zero in on several important explanatory factors whose impact on African growth performance is mediated primarily through their negative implications for investment, particularly private investment. In their view, "Cumulatively, the...variables have contributed to a capital-hostile environment that has lowered the rate of return on investment...This in turn has reduced the rate of return on private investment. Since the 1980s the private capital stock per worker has declined by 20 percent and is now only one third of that in South Asia, the next most capital-scarce continent. Hence, the most capital-scarce region has nevertheless had low returns on investment" (Collier and Gunning, 1999, 75).

In spite of the high-risk and other elements of Africa's "capital-hostile" environment, finance remains the key to the region's investment and hence growth. As the World Bank (1989a,27) argues, savings determines the rate at which productive capacity and income can grow. In particular, long-term finance tends to be associated with higher productivity and growth (Caprio and Demirguc-Kunt, 1998). Since the typical enterprise in developing countries uses significantly less long-term finance than its counterpart in the developed countries, a policy priority for more rapid growth would be to improve the supply of long-term credit to enterprises in the developing countries. In the specific case of Africa, it is important to examine the extent to which domestic savings has financed investment, and whether the realised investment has been adequate for generating the rate of GDP growth that would be required to significantly increase the region's per capita income and alleviate its deep poverty. Both tasks are involved in taking stock of development finance in Africa.

Hence, this paper offers a brief review of broad trends in investment and savings in Africa in the next section, which pays particular attention to the decomposition of both investment and savings into their public and private components. It examines the investment-savings gap and suggests that since both the historical and current investment levels are lower than what would be required to generate adequate GDP growth rates, the gap probably underestimates the need for external resource inflows.

The paper also takes stock of the key components of external resource inflows. It focuses specifically on the composition and trends, their sources and regional distribution. The paper then reviews the literature regarding the impact and effectiveness of some components of these external resource flows, and draws some policy conclusions. The last section concludes the paper.

INVESTMENT AND SAVINGS IN AFRICA

The sluggishness of the recovery of African economies, after almost two decades of adjustment, remains a source of deep concern because the low growth rates of these economies significantly and negatively impinge on the welfare of the people in the region. In understanding the factors that will substantially increase the growth rate of African economies and thereby improve welfare in the longer term, the role of investment, both in human and physical capital formation and accumulation, is central.

Recent theoretical research, typified by endogenous growth models, suggests that high investment rates can result in a permanent increase in an economy's overall growth rate (Roemer, 1986; Lucas, 1988). In particular, different variants of these models identify investment as one of the most important determinants of economic growth. In addition, there is now strong empirical evidence that capital accumulation is a fundamental cause of economic growth. In this context, evidence of development experience

strongly suggests that the best performing countries in the developing world have achieved this status largely on the basis of their high rates of investment. More specifically, as a group the developing countries that have experienced growing per capita incomes over the last two to three decades have had investment to income ratios in the range of 20 to 25 per cent. In the particular case of the East Asian countries, which have grown consistently faster over this period, their investment rates have averaged 25 to 30 per cent. There is some evidence to suggest that the phenomenal economic growth performance of East Asian countries owes much more to their sustained high rates of investment than to productivity growth (Young, 1993). Based broadly on these theoretical and empirical considerations, it is argued that differences in the stocks of accumulated capital across countries are the prime determinant of corresponding differences in national incomes and their growth rates.

The average gross domestic investment (GDI) of SSA countries as a proportion of their GDP has been lower than the corresponding average for all developing countries, and especially for the East Asian countries since the 1960s. In 1965, the investment rate in SSA countries was 16 per cent compared with 22 per cent for the East Asian countries and 20 per cent for all developing countries. The investment rate in SSA countries improved to around 18 per cent in 1970, when the East Asian rate was 26 per cent while the rate for all developing countries was 23 per cent. This upward trend in investment rates was maintained until 1980; thus, the average investment rate in SSA countries moved up marginally to 20 per cent, the average for all developing countries rose to 25 per cent while that of East Asia increased to 30 per cent. Thereafter, the investment growth trajectory in SSA countries diverged as its investment fell back by 1985 to 15 per cent, a rate that was marginally below what was achieved two decades earlier.

In contrast, investment in East Asian countries maintained its upward trend so that by the beginning of the second half of the 1990s its investment rate was 35 per cent compared to an investment rate for SSA countries that was still less than 20 per cent, or still below the rate achieved around 1980. Three points are worth making with regards to the trend of aggregate investment performance in SSA countries. First, since the 1960s, aggregate investment performance has been generally poorer than that of other developing regions. Second, the region has not quite succeeded in recovering from the investment collapse suffered in the late 1970s and early 1980s. Third, since other developing regions have had a virtually uninterrupted growth of investment since the 1960s, the gap in investment rates between SSA countries and other developing regions has widened from 6-8 percentage points in the 1960s to 10-15 percentage points in the mid-1990s.

Buried in Africa's sea of poor investment growth performance are a few islands of impressive achievements. Around 1980, just before the generalised investment collapse in SSA, as many as 14 SSA countries had achieved investment rates of at least 30 per cent. Included among these were Botswana, Cape Verde, Congo, Gabon, Guinea-Bissau, Nigeria, Somalia, Sao Tome and Principle, Somalia, Togo, Kenya, Lesotho, Mauritania, Swaziland, and Seychelles. Another set of four countries–Malawi, Gambia, Liberia, and Côte d'Ivoire–had investment rates of between 25 and 29 per cent. By 1993, only a handful of SSA countries had achieved sufficient recovery of their investment capacities to record investment rates of at least 25 per cent. Of these, Guinea-Bissau and Mauritius achieved investment rates in the range of 25-29 per cent; while Mozambique, Tanzania, and Lesotho recorded investment rates in excess of 35 per cent. It is important to note, however, that the impressive investment performance of four of these countries–Mozambique, Tanzania, Lesotho, and Guinea-Bissau–rests precariously on large external resource transfers. It is only in the case of Mauritius that the investment rate has strong support from a similarly impressive domestic saving rate.

The analysis so far has focused on total investment at the aggregate SSA regional level or at the individual country levels. The split of total investment into its public and private components is also important. To begin, it is worth noting that, overall, public investment rates in developing countries have been declining since the early 1980s and by the mid-1990s were down to about 6 per cent of GDP. This is a rather steep decline from the average level of 10 per cent achieved in the late 1970s. For the 1990s, data on total investment disaggregated into its private and public components are available for only a small number of SSA countries, including Benin, Central African Republic, Côte d'Ivoire, Kenya, Malawi, Mauritania, Mauritius, South Africa, and Togo. The weighted-average of public investment rates for these countries declined from 7 per cent in 1990 to 5 per cent in 1995. In comparison, the weighted-average of private investment rates remained stable at around 12 per cent over the same period. This data set, despite its limited coverage, clearly confirms the major contribution of the private sector to investment spending in the SSA context.

There are three notable trends that should, perhaps, be highlighted because they suggest significant implications for future trends in African investment (Iwayemi, 1997). First, private investment increased by just over 50 per cent between 1990 and 1996. Second, private investment has become the dominant source of domestic demand in the 1990s, as the public sector share has declined. Thus, private investment averaged 65 per cent of total domestic investment in 1996. Third, private investment growth is becoming more widespread. These three trends represent a re-

markable departure from the pattern that prevailed during the previous two decades. The rise in private investment, particularly since the mid-1990s, suggests increasing confidence in the region as the macroeconomic environment is becoming more stable and government policies more credible.

One of the critical questions that motivate any serious discussion of the poor economic performance in SSA is: Why are investment rates in Africa so low? Attempts to address this question have invariably turned to an analysis of the key determinants of investment in Africa. There are two closely inter-related but separate elements to this analysis. One may, for instance, focus on the determinants of private domestic investment, but one may also zero in on the determinants of private capital inflows into SSA countries. To the extent that investors, both domestic and foreign, are motivated by broadly similar considerations, the results of both these types of analysis should be quite similar, although there may well be some specific differences that could have important policy implications. In this section, the focus is on the determinants of private domestic investment; analysis of the determinants of private capital inflows is presented in the next section.

Both approaches start from the same broad conceptual framework built around four key characteristics of investment (see, for example, Serven, 1996). Both approaches regard these features as relevant for understanding the process of private investment response. First, most investments in fixed assets are, by and large, irreversible. Second, future returns on fixed capital investments are inherently uncertain. Third, economic agents typically have considerable discretion over the timing of the investment in fixed assets that they may wish to undertake. Fourth, and lastly, investors often worry about the potential loss of value of their fixed capital assets on account of several risks, including that of damage to property due to war, civil unrest, weak contractual enforcement, or sheer expropriation. In the context of this conceptual framework, the combination of these four key features in investment generates a powerful and comprehensive principle of investment decision-making. This is, economic agents who are potential investors may, and very often do, exercise their option to delay their decision to commit until the front-loading of investment returns is sufficient to compensate them for risk (perceived or real) of long-term investment. The implication of this is that investment can be expected to be sensitive to the variability (rather than levels) of prices and interest rates and to perceived risks of loss of value (Elbadawi, Ndulu and Udung'u', 1997).

This conceptual framework suggests that the main determinants of private investment can be classified into the following five broad groups: profitability of investment; macroeconomic uncertainty; external shocks and their associated risks; political, social and quality-of-institution risks, and the level and structure of public investment. Projected returns and cost of capital affect the profitability of private investment. Indicators of these include real growth of output, real interest rates and availability of credit, as well as human capital, which influence productivity, and hence return on fixed capital. Macroeconomic uncertainty captures policy-related risks that affect the variability of prices and interest rates and, hence, expected net returns on investment.

In this context, the credibility of macroeconomic policy may be perceived through at least three main indicators: inflation rate and its variability; real exchange rate variability; and sustainability of fiscal balance. These three indicators interact with an economy's degree of openness to trade and the ease of cross-border financial transfers, as moderated by foreign exchange control regulations. Risks associated with external shocks basically take the form of rate of change and volatility of external terms of trade and/or debt overhang. Risks associated with the political and social environment and quality-of-institutions relate broadly to such concerns as civil strife, instability of governments, violation of civil liberties, the degree to which property rights are protected, corruption and other bureaucratic constraints that may increase the cost of doing business. Finally, the level and structure of public investment may impinge on private investment positively or negatively. For instance, public investment that builds up efficient infrastructure raises the productivity of private investment and hence "crowds-in" such investment. But public investment in commercial activities would compete and probably "crowd-out" private investment.

In one way or another, and in varying degrees, both the actual behaviour of government and the perceived credibility of its policy pronouncements and actions affect all five categories of the private investment determinants identified above. Thus, even when specific policy reforms are initiated and implemented to address a particular deficiency in the investment environment, there could be a lag investment response due to two key phenomena. First is the lingering negative effect of the legacy of previous bad policies; second is the spillover of bad reputation or instability in a regional or sub-regional context.

This conceptual framework offers a powerful tool for exploring what explains the sluggish private investment response in the SSA region after almost two decades of structural and policy reform. An empirical analysis by Elbadawi, Ndulu and Udung'u (1997), based on this framework, indicates that factors related to risks (especially those emanating from the macroeconomic environment and external shocks to the political, social and institutional conditions) are the main causes behind the sluggish investment response to reforms in Africa.

Since, in general, domestic savings typically largely finance domestic investment, the trend of ag-

gregate investment performance in the SSA region described above is very closely matched by the region's trend of aggregate domestic savings performance. Thus, gross domestic savings as a percentage of the SSA region's GDP was roughly 13 per cent in the early 1960s, and rose gradually from about 15 per cent in 1970 to 18 per cent in 1980 before collapsing to about 10 per cent from the mid-1980s and beginning to rise again in the second half of the 1990s. It remains problematic, however, that the increasing trend of private investment could be frustrated unless a similar upward trend emerges on the side of domestic savings. The average savings rates in the SSA countries of around 16 per cent in the mid-1990s is below the region's current investment rates. It is far below the 23-25 per cent range for developing countries and it is very much below what is needed to boost the investment rates to the level required for more rapid economic recovery and sustained growth in the region.

The low savings rate in the SSA region is attributable to several factors. The region's low income is key among these. But the generally under-developed financial institutions and markets which constrain savings mobilisation are probably more important. In addition, the massive capital flight from the region, propelled by poor macroeconomic policies as well as the unstable social and political environment, robs the region of much-needed long-term development funds. The fact that African wealth owners have chosen to shift their wealth abroad, rather than to invest in the region, provides an important reason why investment rates in the SSA countries have been so low.

Available evidence suggests that, based on domestic capital flight data between 1970s and 1990, SSA has located 37 per cent of its wealth portfolio abroad compared to 17 per cent for Latin America and 3 per cent for East Asia (Collier, 1997). If the SSA region could reduce its capital flight to the level for Asia, the region's capital stock could increase by as much as 50 per cent.

Africa's investment-savings gap has widened since the general economic collapse that began around the mid-1970s. More significantly, since the investment levels of the 1980s and 1990s are very much lower than that which would be required to generate appreciable growth rates, this "gap" may be viewed as an underestimate of the required investment resources that cannot be financed by domestic savings. One more such "realistic" estimate of the resource gap is offered by the World Bank (1989b). In estimating African financial needs in the 1990s, the World Bank study uses a two-gap model in which the difference between domestic savings and gross investment plus obligations to repay past loans must equal the difference between imports and exports of goods and services. It is assumed that gross external capital or foreign savings finances this gap. Based on a target real GDP growth rate during the 1990s of 4-5 per cent, annual export growth of 5 per cent and a savings rate of around 20 per cent, the estimated gross foreign financing requirement for Africa was an average of $28 billion per year during the 1991-2000 period.

EXTERNAL RESOURCE INFLOWS

Clearly, the historical and current savings and investment rates in the SSA region are too low to sustain the growth rates that could make a substantial impact on poverty alleviation. This leads to the question: How can such high investment rates be achieved?

In seeking an answer to this question, one might usefully examine the experience of other developing countries in this regard. This experience reveals that although most private investment is financed by domestic savings, increased access to foreign investible resources has played (and continues to play) a significant role in mobilising resources for private sector growth in developing countries. Translated into the context of the SSA region, the need to attract more private investment could reflect two important concerns: One is the wish to increase the equity/debt ratio of foreign capital, given the region's current external debt burden. The other is to acknowledge that growing aid fatigue makes continued heavy reliance on official development finance unrealistic.

The stock of external debt in the SSA region rose from about $123 billion in 1991 to over $195 billion in 1995. The debt service associated with this obligation currently claims almost 20 per cent of the region's savings and represents about 4 per cent of its gross domestic product (GDP). Other forms of capital inflow that would enable the SSA region to increase its investment rate without a corresponding rise in the region's debt burden would clearly be preferred. However, recourse to large-scale official flows does not appear to be a realistic option. Aid fatigue and fiscal pressures in donor countries are making it more difficult for SSA and other developing countries to attract adequate official development finance flows. Hence, SSA countries must strive to tap as much private foreign capital as possible if they are to achieve the investment-induced productivity levels necessary for a sustained increase in living standards.

To the extent that foreign capital inflows bring badly needed foreign exchange to SSA countries and boost their investment rates, they would assist in raising their growth rates. But foreign capital inflows can take various forms, which also determine what specific benefits they bring to the host economy (Cockcroft and Riddel, 1991; Meier, 1995). When these inflows occur in the form of portfolio investment, the foreign investor simply buys a stake in an enterprise without assuming any management responsibility. In this case, the local enterprise benefits from the finance and a sharing of risks with the for-

eign investors. Foreign direct investment (FDI) involves more than just providing part of the equity of an enterprise; the foreign investor is also involved in the management of the enterprise. FDI provides additional benefits besides finance, particularly in terms of access to better management techniques, market links and marketing expertise as well as technology. Thus, FDI is often associated with several productivity-raising channels while also contributing, as other types of investment, in creating additional economic activity that could, in turn, raise income, employment and tax revenue. Where FDI is implemented through the entry of new firms, it can also increase competition in the host economy, assist in eliminating monopoly profits and help to stimulate quality upgrades of goods and services produced in the host economy. To the extent that the critical ingredients of rapid economic growth such as technology, created assets, intellectual capital, and organisational competence are increasingly embedded in multinational firms, the access of developing countries to these ingredients is gained largely by attracting such firms to invest and operate in their economies.

Of particular relevance to many debt-distressed SSA countries are the special advantages of FDI over foreign loans. First, equity investment requires payment of dividends only when the enterprise earns a profit, whereas external debt has to be serviced irrespective of the state of the host economy. Second, part of the earnings from FDI is often reinvested, and third, the maturity structure of the earnings from an equity investment and payments on its financing tend to be more closely matched thus avoiding the typical liquidity problems encountered when countries borrow short-term to finance long-term investments.

As indicated above, domestic resources have clearly been inadequate to finance even the limited investment rates that the region has achieved since the 1960s. The difference has typically been sourced externally and, in doing this, the SSA region has had an experience that is, in some respects, similar to those of other developing regions.

Private Investment Flows

Fed by a rising trend of closer integration of national economies in a rapidly liberalising global economic environment, foreign investment has been growing in a spectacular way since the 1980s. The developing countries, as a group, have benefited from this increased flow of foreign investment. In fact, since the mid-1980s, foreign private investment flows have overtaken official development finance as a source of external financing for economic expansion in the developing world (UNCTAD, 1997).

Long-term foreign capital flows take several different forms. The broad groups include foreign direct investment, portfolio equity investment, and foreign private loans. The last of these groups can be further sub-divided into commercial bank loans, bond finance, and other private loans. Both FDI and foreign portfolio investment were relatively small until the mid-1980s, but since then have grown quite rapidly.

It is easy to demonstrate the growing importance of foreign private resources to developing countries. The proportion of total external development financing accounted for by these private sources increased almost two-fold from 44 per cent in 1990 to over 85 per cent in 1996. FDI has emerged not only as the leading component of all private foreign investment financing sources but also substantially exceeds official development finance. In 1996, FDI averaged roughly 1.7 per cent of the aggregate GDP of developing countries. In the same year, FDI provided 30 per cent of the $284.6 billion worth of external finance flows to developing countries while private debt flows accounted for 31 per cent, portfolio equity investment 16 per cent and official development finance contributed 14 per cent (UNCTAD, 1997).

Cockcroft and Riddell (1991) show that foreign investment flows to the SSA region have gone through several phases since the 1960s. During the first phase, most SSA countries pursued "inward-oriented" development strategies and foreign investment flows were attracted largely to protected import-substitution industries and the exploitation of natural resources. The "tariff jumping" incentive which motivated FDI flows into import-substitution industries was particularly effective in SSA countries with relatively large markets, such as Nigeria. Countries such as Mauritius also benefited from location advantages and natural resources that gave their products preferential access to export markets.

In the context of this account, a second phase of FDI flow into the SSA region is broadly associated with the commodity booms of the 1970s. These had at least three effects on FDI flow. First, escalating commodity prices increased the flows of FDI into the extractive sectors, especially oil and gas, in the SSA region and enabled such countries as Congo and Nigeria to experience sharply increased FDI flows in the 1970s.

Second, the rapidly accumulating balance- of-payments surpluses generated by rising commodity prices enabled some commodity- exporters to meet their own investment needs from domestic savings and without recourse to FDI flows. As a result, a number of countries, including Kenya, Nigeria and Zambia, imposed new restrictions on FDI which generated sharp declines in the level of such flows in all three countries, in spite of the abundant natural resources in Nigeria and Zambia. In the particular case of Nigeria, a significant effect of the "indigenisation" decrees of 1972 and 1977 was to reduce the proportion of the total production in the manufacturing and service sectors attributable to foreign-owned assets from 40 per cent in the mid-1970s to roughly 20 per

cent a decade later. Third, the recycling of part of the accumulated balance-of-payments surplus of the commodity-exporting countries through large-scale sovereign lending by commercial banks enabled private loans to, at least temporarily, push aside FDI as a major source of external finance for development in some SSA countries.

The third phase of FDI flows to the SSA region coincides broadly with the region's period of structural adjustment and policy reform of the 1980s and 1990s when sustained efforts began to be made to restore macroeconomic stability, to liberalise the business environment including the trade and payments arrangements, to privatise certain economic activities and to deregulate the conditions governing the entry, scope and operations of FDI. This phase has also featured the strengthening of the region's capital markets, including the establishment of several thriving stock exchanges. It seems reasonable to attribute the gradual return of foreign investors to the SSA region and the boost in foreign capital flows to the region in the 1990s to the increasing confidence in African economies associated with these institutional developments and policy reforms.

Aspects of these phases are broadly reflected in the relative position of SSA countries in the league of FDI recipients between 1970 and 1996 (UNCTAD, 1997). For instance, during the 1970-79 period, only two SSA countries ranked among the top 12 developing country recipients of FDI. These countries were Nigeria (ranked 3rd) and South Africa (ranked 7th). During the next decade (1980-89), only Nigeria (ranked 10th) made the list; during 1990-96, no SSA country was among the top 12 recipients of FDI. However, it is important to note that this ranking of FDI recipients in terms of absolute amounts is inherently biased against the low-income economies of Africa which may be too small to attract amounts of FDI that are more likely to be drawn to economies with large markets. Thus, when FDI is expressed as a proportion of each country's GDP, SSA countries appear to do much better. In 1996 for example, a third of the top 12 FDI recipients, based on this relative ranking, are SSA countries: Angola, Tanzania, Ghana, and Mozambique were ranked first, seventh, eleventh and twelfth respectively.

A narrow focus on the comparison of absolute amounts of private capital flows across regions may also lead to the conclusion that the recent boom in these flows has bypassed the SSA region. Thus, while SSA accounted for as much as 8.9 per cent of total private capital flows to developing countries during the lending boom of 1977-82, the region's share during 1990-96 has been less than 2 per cent. This assessment should be qualified by the following considerations. First, absolute levels of FDI flows to the SSA region grew five-fold between 1975-80 and 1990-96, compared to 4.7 times for Latin America. Second, FDI stock as a proportion of the SSA region's aggregate GDP more than doubled over the 1985-95 period. Third, as a percentage of its GDI, FDI stock in the SSA region in 1995 was 17 per cent as compared to 14 per cent for Asia and 18 per cent for Latin America. Finally, in relation to gross fixed capital formation, Africa's FDI flows during 1990-95 accounted for 5.4 per cent which was roughly the same for Asia, although lower than the 8.4 per cent recorded for Latin America.

This upward trend from the late 1980s has been sustained and FDI flows have grown to dominate aggregate foreign capital flows to the SSA region in the 1990s. But the legacy of the past continues to impact on this upward trend: along with Latin America, the SSA region experienced the sharpest decline in foreign private capital inflows in the wake of the debt crisis of the early 1980s. Hence, for most of the years since 1982, annual long-term foreign private capital flows have been less than half the peak of $5.5 billion achieved in 1982.

One can classify individual SSA country recipients of FDI in various ways. For instance, according to Cockcroft and Riddell (1991), long-term FDI recipients include Botswana, Mauritius, Seychelles, Swaziland and Zambia whose net FDI flows have probably reached a plateau. Countries that have achieved relatively large increases in the 1990s include Angola, Cameroon, Gabon, Ghana, Guinea, Lesotho, Madagascar, Mozambique, Namibia, Nigeria and Zimbabwe. A large proportion of these increases has been directed to the oil and mining sectors of these economies. The SSA country that has achieved the most drastic turn-around, in terms of FDI flows, in the 1990s is Uganda–its FDI flows reached $112 million or 2 per cent of GDP in 1996.

The classification of SSA countries in terms of the relative importance of their FDI inflows to the rest of their economies in 1996 reveals the following picture: In the single case of Angola, FDI flows accounted for more than 5 per cent of GDP. In the range of FDI flows greater than 3 per cent but less than 5 per cent of GDP fall three SSA countries, Ghana, Mozambique, and Tanzania. Countries whose FDI flows account for more than 1 per cent, but less than 3 per cent of GDP include Botswana, Cameroon, Gabon, Gambia, Guinea, Lesotho, Namibia, Nigeria, Uganda, and Zambia.

In terms of total dollar amounts, FDI flows to SSA were dominated by the following countries over the 1991-96 period; Nigeria ($8.5 billion), Angola ($2.2 billion), South Africa ($1.1 billion), Ghana ($0.9 billion), Namibia ($0.4 billion) and Zambia ($0.3 billion).

Compared to FDI, portfolio equity flows to SSA countries are still extremely small. The notable exception here is South Africa. Since 1994, more than 40 Africa-oriented funds have been established with a total investment size of more than $3 billion. Starting from South Africa, the base of these funds has been expanding to cover Botswana, Côte d'Ivoire, Ghana,

Kenya, Mauritius, Zambia, and Zimbabwe. Portfolio equity investment (PEI) flows to SSA countries outside South Africa rose dramatically from $17 million in 1993 to $641 million in 1994 but fell back to $297 million a year later. The flows to South Africa experienced a more spectacular increase, from $144 million in 1992 to $4.6 billion in 1995, the largest such flow to any developing country that year.

PEI flows to Africa are still relatively low in comparison with other emerging markets. Since 1994, interest has been generated in this source of development finance as African stock markets open to foreign investment. The stock markets in Africa are revitalised and rank among the top two or three best performing markets in the world in the late 1990s. For instance, Côte d'Ivoire, Kenya and Zimbabwe were the top ranking markets, respectively, in 1995 and 1996. This is because more countries in Africa are increasingly embracing and benefiting from privatisation. In 1996, a $2.5 billion increase in revenue from the level in 1995 was generated, while foreign investors provided about 50 per cent of the privatisation revenue. Africa's stock exchanges still possess a disproportionate representation of listed private firms, though this is being altered with the rising spate of privatisation of public assets.

Loans to SSA have traditionally been bilateral or multilateral in nature. Private loans form an insignificant portion of non-concessional flows. For all countries in the SSA region, commercial bank loans remain negative or at very low levels in the 1990s. Private loans as a percentage of GDP declined from an average of 2.9 per cent in 1980 to 0.6 per cent in 1990 and to -0.2 per cent in 1995 (Bhattacharya, Montiel and Sharma, 1997). The creditworthiness ratings for African countries have also remained low, explaining the trend, while a marginal improvement in the ratings in the 1990s has not bolstered lenders' confidence in the region, particularly in the presence of high political risk, weak export performance, low economic growth and high debts.

Both sectoral and home country distributions of FDI have altered significantly. FDI has traditionally been concentrated in the primary sector, but has changed to accommodate services and manufacturing in the 1990s. Manufacturing accounted for 50 per cent of FDI stock in Nigeria in 1992, while services and the primary sector accounted for about 20 per cent and 30 per cent, respectively. Also, FDI from Germany is increasingly targeting manufacturing while those from the United Kingdom and the United States are targeting services (UNCTAD, 1997). Though FDI potential exists in tourism, it is largely unutilised compared to manufacturing and services sectors.

The important sources of FDI for Africa are the European Union, Japan and the United States. These also constitute the traditional sources of FDI. France, Germany, the United Kingdom and the United States accounted for 80 per cent of FDI inflows during 1982-1996. In 1992, four countries accounted for three-quarters of FDI stock in Africa (UNCTAD, 1997). Other non-traditional investor countries – the Netherlands, Switzerland, Portugal and Spain – have helped to increase FDI flows into Africa by raising their share of outflows to Africa from 2 per cent in 1982-86 to 22 per cent in 1996. South East Asian countries, for example Malaysia and Korea, are new sources of FDI to SSA.

The extent to which African countries can attract foreign capital inflows to supplement their domestic savings and enhance their investment levels depends on a number of factors. Some of these can be derived indirectly from the analysis presented above. A more systematic method for identifying these factors looks more directly at the determinants of these private flows.

The approach which focuses primarily on the determinants of private capital flows to the SSA region typically starts from the premise that long-term private capital flows from one country to another are influenced by relative rates of return at home and abroad and the relative risks associated with such investments. It also assumes that expected rates of return, risk perceptions and the climate for foreign investment are affected by certain characteristics of the host country as well as the international environment. Host country characteristics are proxied by the economy's growth rate, domestic investment rate, openness of the economy, ratio of external debt to GDP, and volatility of real effective exchange rates. The most important external factor typically recognised is international interest rates, which proxy the opportunity cost of investing abroad.

An empirical analysis of private capital flows to the SSA region by Bhattacharya, Montiel and Sharma (1997), based on this framework, reveals that the host economy's output growth, gross fixed capital formation and the economy's degree of openness to trade positively and significantly affect the volume of private capital inflows. By contrast, a large external debt relative to GDP adversely affects private capital inflows. Moreover, different combinations of factors affect the two main components of private capital flows to SSA countries. While FDI is attracted to growing open economies with relatively stable real effective exchange rates, private loans appear to respond more favourably to growing economies with low levels of external debt to GDP and higher rates of domestics investment.

Countries in the SSA region seem to be considered too risky. This appears to be the most plausible factor behind the sluggish response of private domestic and foreign investment to structural and policy reforms by SSA countries. Clearly, these reforms have brought about significant changes in the economic fundamentals that should influence investment. Profitability of private investment has improved over the

period 1980-94. Survey results also show that returns to FDI are very high in Africa. In particular, between 1990 and 1994, rates of return on FDI were estimated to be between 24-31 per cent; these are about 60 per cent higher than the rates of return to FDI in other developing regions. Similarly, policy reforms have substantially improved the macroeconomic environment in the SSA region. Inflation rates have declined from an average of over 10 per cent in the early 1980s to less than 8 per cent a decade later. Fiscal deficits were reduced by about 50 per cent over the same period while real exchange rates also improved significantly. However, significant policy reversals in a number of SSA countries continue to feed the uncertainties regarding whether the achievements noted above will be sustained. Developments regarding risks associated with external shocks emanating from terms of trade changes and the external debt burden are much less favourable to investment. In addition, while some progress has, no doubt, been made with respect to risks associated with Africa's political and social environment as well as the region's quality of institutions, they remain paramount in the minds of investors and appear to outweigh the improving profitability of investment.

Official Development Assistance Flows

Official Development Assistance (ODA) flows have played a predominant role in financing development in many African countries since the early 1960s (Lancaster, 1999). There are several indicators of the dominance of ODA in the flow of external resources to Africa. For example, ODA accounted for about 53 per cent of the total net external resource flows to Africa estimated at $26.1 billion in 1996. During the 1970s and 1980s, ODA flows were as high as 10 per cent of the GNP of African countries. By providing half or more of the total investment in many African countries, ODA flows financed significant proportions of the budgets of many African governments.

Lancaster (1999, 6) traces the rise and subsequent decline of net ODA flows to Africa as follows; the flows were relatively low up to the early 1970s, then grew significantly between the mid-1970s and early 1990s before starting to decline after 1993. Thus, by 1996-97, the share of ODA in the GNP of African countries had fallen to 5 per cent, from around 10 per cent earlier. In spite of these changes, African countries continue to rely on the ODA flows more heavily than other regions of the developing world. For instance, while ODA flows to Africa were as much as $33 per capita in 1991, this was higher than the average ODA per capita of $14 per capita for other low-income countries. By the time that Africa's ODA receipts per capita fell to $26 in 1996, other low-income countries received on average less than half of that, at $12 per capita. Similarly, while ODA flows contributed 6.3 per cent and 5.3 per cent of African GNP in 1991 and 1996, respectively, the corresponding proportions for other low-income countries were lower, at 4.7 per cent and 3.5 per cent, respectively, in 1991 and 1996.

Although total ODA flows to developing countries fell by 20 per cent in real terms between 1992 and 1997 (GCA, 1999), ODA flows to African countries have remained more or less static in the second half of the 1990s. But there are analysts such as Van de Walle (1998, 22) who suggest that the decline in ODA flows to Africa since 1993 "may constitute the beginning of a long-term more substantial decline." That prediction may well reflect what happens among the key donors to Africa. In fact, there has been a lower concentration of sources of ODA flows to African countries. As Lancaster (1999, 8) reports, the five largest donors (France, the World Bank, Germany, the EU, and the US) accounted for 75 per cent of net ODA flows to Africa in 1981-82. By 1997, Japan had replaced the US in the top five sources of African ODA inflows while the new top five provided just over 50 per cent of these inflows. As ODA flows decline, the African countries that may be most directly affected are also changing. In 1981-82, the top five recipient countries included Sudan, Tanzania, Kenya, Somalia and Congo (Zaire). But by 1997, only Tanzania remains in the top five; the four newcomers include Mozambique, Uganda, Madagascar, and Ethiopia.

IMPACT AND EFFECTIVENESS OF EXTERNAL DEVELOPMENT FINANCE

The primary attraction of external development finance to low-income countries is obviously its "gap-filling" role. It helps such countries to attain level of investments that are sufficiently high to generate a desirable rate of economic growth that they could not otherwise achieve, given their low level of domestic savings. When this external development finance comes in the form of FDI, there may be additional advantages that can be derived from improved managerial and technical expertise, technology transfer and enhanced access to certain marketing networks.

But heavy reliance on external development finance is not without its inherent disadvantages. There is a large and growing literature on the impact and effectiveness of different forms of external development finance. A full articulation of the issues and arguments lies outside the scope of this paper and we limit ourselves to a rather selective summary of the debate and evidence. While affirming that ODA has achieved some notable success in Africa, the literature concludes, generally, that the overall contribution of ODA to African development has been disappointing (Lancaster, 1999). Though no systematic relationship appears to have been found between the level of ODA and per capita economic growth of the

recipient countries, it seems that there exists a significant and positive correlation between aid and growth in countries where economic management was good.

However, there is little relationship between changes in aid and policy reform (Burnside and Dollar, 1997). Elbadawi (1998) suggests that heavy "dependence on foreign aid could substantially impair the export competitiveness of" African countries and thus derail their export-oriented development strategies. Finally, Kasekende, Kitabire and Martin (1996) provide evidence showing that private capital inflows have had some negative effect on macroeconomic stability in a number of African countries, especially through exchange rate appreciation.

The enthusiasm with which SSA countries seek to attract capital inflows, of whatever sort, should be tempered, in addition, by several other considerations. Foreign private capital typically finances only a small fraction of total domestic investment. This implies that domestic savings almost wholly finance domestic investment: In 1995, the developing world financed an average of only 7 per cent of its total investment through FDI. Clearly, therefore, foreign investment is not—and should not be treated as—a substitute for domestic capital formation.

Empirical evidence reveals a high correlation between the share of FDI that a country is able to attract and its amount of domestic private investment (UNCTAD, 1997). Experience also suggests that non-enclave type FDI generally flows to countries that already have vibrant private sectors nurtured in a good investment climate (Bouton and Sunlinski, 1996). Taken together, these considerations would indicate that neither foreign capital inflows in general nor FDI in specific can be the solution to the problem of low growth in the SSA region. The problem derives from domestic investment, particularly its private component, which is too low. This is starkly reflected by the fact that in 1995 only half of total investment in the SSA countries was financed by domestic savings compared to 80-100 per cent in other developing regions (UNCTAD, 1997).

CONCLUSIONS

In taking stock of long-term financing for sustainable development in Africa, this paper argues that that the SSA region's poor economic growth performance since the mid-1970s is not unrelated to its low investment rates. In addition, it is suggested that since the region's domestic savings have been inadequate for financing even these low investment rates, it has historically relied rather heavily on external resource inflows. It is tempting, in these circumstances, to suggest that the solution to the growth problem in the SSA region is increased investment that is financed even more than in the past by inflows of foreign capital, both official and private.

The paper shows the predominant role of ODA inflows in financing Africa's development and notes the increasing importance of FDI flows as well. But both types of flows are heavily concentrated in a handful of SSA countries and hence may not constitute an equitable basis for sustainable development of the entire region. Furthermore, ODA flows may decline and drastically affect the SSA countries that are now heavily dependent on them. In any case, heavy dependence on external resource flows may be associated with other undesirable effects, such as macroeconomic instability and real exchange rate appreciation, that could significantly impair the export competitiveness of SSA countries.

These considerations suggest that SSA countries should rely primarily on domestic savings to provide the long-term finance needed for boosting their investment and overall economic growth rates. Policies that discourage capital flight and induce African wealth-holders to invest in Africa, as well as those that stimulate domestic savings by reforming and enhancing the region's financial institutions and markets, should assist in the mobilisation of domestic savings for financing the region's development. Key policies, among others, are those that provide for fully funded public and private sector pension arrangements. The experience of other developed and developing regions suggests that long-term financing for sustainable development comes largely from domestic resources. The SSA region cannot for long continue to be an exception to this general rule.■

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INTEGRATING PUBLIC ENVIRONMENTAL EXPENDITURE MANAGEMENT AND PUBLIC FINANCE IN TRANSITION ECONOMIES

*Grzegorz Peszko**

EXECUTIVE SUMMARY

In many countries with economies in transition, environmental expenditures seem to be less than optimal. The standard explanation by environmental economists and environmental policy analysts is that of government failure to provide environmental public goods or to correct market imperfections related to environmental externalities. These arguments often appear to hold. However, part of the problem may also be that public institutions managing environmental expenditures may attract fewer resources if they do not corroborate with the acknowledged standards of sound public finance.

The focus of this paper is on public, domestic institutions managing environmental investment expenditures in the transition economies of Central and Eastern Europe (CEE) and the New Independent States (NIS). Special attention is paid to autonomous, public environmental funds due to their distinctive role played in the management of public environmental expenditures in these countries. Despite acknowledged problems, environmental funds have usually been recognised as useful tools for countries coping with problems of transition, on the condition that they meet minimum performance standards outlined in the 1995 OECD guidelines on Environmental Funds.

A few environmental funds that made the greatest progress in implementing OECD guidelines are internationally recognised and were often able to attract significant external resources. However, these funds usually operated in the most successful market reform countries where transition is coming to an end and the main rationale for earmarked, extra-budgetary environmental funds disappears. Other CEE environmental funds, as well as almost all funds in the NIS, have so far not succeeded in being neither effective tools of environmental policy nor efficient, transparent and accountable instruments of public finance. Environmental ministers are under pressure to reconsider if it is worth paying the social cost of earmarking to maintain institutions that have so far brought so little value added. The great challenge facing the funds that stay alive will be to improve their performance. A great deal of improvement is needed in the area of fiscal prudence, efficiency, cost-effectiveness, transparency, accountability and non-intrusiveness.

This paper identifies key principles of sound public finance and proposes a comprehensive algorithm for strengthening the management system of domestic public institutions managing environmental expenditures in transition economies. This could provide for a more complete integration of environmental expenditure management with sound public finance.

* Grzegorz Peszko is an Environmental Finance Team Co-ordinator in the Non-Member Countries Branch of the OECD Environment Directorate. This paper benefited enormously from the wide consultations held within OECD and comments provided by the participants at the United Nations' Fifth Expert Group Meeting on Finance for Sustainable Development held in Nairobi, Kenya, in December 1999. The views expressed in this paper are those of the author and do not necessarily represent those of OECD or of its member countries.

MANAGEMENT OF PUBLIC ENVIRONMENTAL EXPENDITURE IN TRANSITION ECONOMIES

Barriers to Expenditure

At the end of the decade, economic conditions in CEE countries have become essentially different from those prevailing in the NIS. All countries of the NIS face severe public sector budget constraints, which result from a fall in national income compared to the pre-transition period and the difficulties in collecting tax revenue. This has reduced the availability of public finance to all investments, including environmental investments (World Bank, 1998). Budget constraints in CEE countries are much less severe, although these countries are also undergoing often painful, fiscal consolidation. However, not only are the fiscal systems in (almost all) CEE countries much more healthy and sustainable, but also municipal finance and utilities have undergone radical reforms and are now able to support financial maintenance and, increasingly, the development of environmental infrastructure (EBRD, 1999b).

In the NIS, government economic policies themselves are often perceived as a source of unfavourable framework conditions for investment. Detrimental conditions include inconsistent policy development, an unstable macroeconomic environment, high interest rates, elevated inflationary expectations and fluctuating exchange rates (EBRD, 1999a). Distortions in the revenue side of fiscal policy, such as inconsistent and ill-designed taxation, as well as failures in budget planning and expenditure control, have led to chronic public deficits. Tight monetary policies induced low liquidity in the enterprise and banking sector in most NIS countries (EBRD, 1998; EBRD, 1999c). Obstacles to trade and bank credit, barriers to entry, especially for SMEs and foreign firms, and barriers to FDI and long term foreign capital investments have not helped to relieve capital shortages (OECD, 1999c). These obstacles were by and large removed in CEE countries. The economic policy failures in the NIS have been further exacerbated by the lack of the rule of law, soft budget constraints, absence of competition in government procurement, institutionalised corruption, underdeveloped civil society, absence of government accountability to citizens and democratic institutions, lack of transparency and the low profile of the rule of law in the budgeting process (OECD, 1998b). This may have fostered a microeconomic incentive structure that rewards "rent-seeking" behaviour and undermines the drive for efficiency and fair competition among private sector entities (EBRD, 1997; EBRD 1998; Gady and Ickes, 1998).

In the NIS, country sovereign risk is still high, causing constrained access to foreign capital and a high cost of borrowing by governments. Increased nominal interest rates and related discount rates applied by governments usually inhibit financing for most public environmental investments that are typically characterised by relatively low internal financial rates of return.

A distinctive feature of transition in many NIS countries has been an increasing demonetisation of their economies, involving a rapid increase in arrears and shares of money surrogates in industrial transactions and budgetary operations (Commander and Mumssen, 1998). Such surrogates include commodities (barter), various bills of exchange (*veksels*), federal, regional, and local government securities, and (often complex) offset arrangements. In Russia, by 1998 the share of various forms of money surrogates had reached over half of industrial transactions and consolidated regional budgetary revenues (OECD, 1999c). In a number of regions in Russia, this share exceeded 70 per cent (OECD, 1999c). In Ukraine, barter alone has reached over 40 per cent of industrial sales and the share of non-cash revenue in total government revenues was 30 per cent in 1997 (IMF, 1999). The public sector (especially local budgets and extra-budgetary funds) is often not only involved in such schemes but also perceived as a driving force for demonetisation (Commander and Mumssen 1998; Brana and Maurel, 1999; OECD, 1999c).

Distortions in the Budgeting Processes

In CEE countries, planning of the government budget was not carried out without failures, but towards the end of the decade budgets have been increasingly implemented as planned and budgetary commitments to environmental expenditure items were met. The process of accession to the EU has encouraged realistic expenditure programming and control, as the European Commission requires the Accession Countries to prepare realistic investment programmes for the implementation of the most costly pieces of EU environmental law (Commission of the European Communities, 1998). The focus is on realism, and in the course of negotiations the robustness of assumptions and estimates is being carefully scrutinised.

Quality of budget preparation was generally lower in the NIS. Government revenue has usually been overestimated leading to overly optimistic assumptions about amounts of money available for government expenditure. Failure in expenditure planning was aggravated by little progress made in most of the NIS with tax reform, broadening the tax base or improving collection of government revenue (Himes, 1999). The consequence of weak budget preparation was budget implementation flawed with ad hoc adjustments and non-transparent expenditure cuts undertaken during the course of a year. Most government commitments, including environmental programmes, were chronically under-funded. For example, in 1996 the Government of the Russian Federa-

tion approved 25 environmental federal targeted programmes. However, limited financing was provided for only 11 of them (OECD, 1999a). Budgetary expenditures are almost always delayed and significantly smaller than commitments. The under-funded federal environmental programmes did not differ from other federal mandates. In 1998, only 30.6 per cent of obligations stemming from major legal federal mandates were actually financed (OECD 1999c). This notwithstanding, public agencies have continued to proliferate a great number of new expenditure programmes every year with additional cash requirements. This has continued the Soviet legacy of strategically overestimating expenditure requirements actually so that, in the anticipated and likely event of budget cuts, actual disbursements would be closer to what was needed (or wanted).

Efficient allocation of public expenditure requires a clear and realistic long-term strategic framework. Virtually all CEE and NIS countries have prepared, during the years 1994-1998, National Environmental Action Programmes (NEAPS). Unfortunately, contrary to elevated expectations, very few NEAPS have provided the anticipated framework for public expenditure management. Most of them lacked specific, measurable and realistic objectives, real priorities, instruments for implementation and institutional reform programmes (especially for improving enforcement) which would assign responsibilities (OECD, 1998e). Normally, there are no specific, time-bound targets in NEAPS with robust estimates of costs and affordability of achieving these targets. Two efforts to prepare strategies for financing environmental programmes (for Lithuania and Armenia) stood as academic exercises but were not useful as tools in making policy choices (COWIconsult, 1998).

Environmental programmes in the NIS are usually dominated by the "needs" or "wants" mentality rather than "affordability" mentality. They contain lists far too long of problems to be tackled and corresponding large gaps between expenditure needs and money available, particularly public finances. Environmental authorities have been developing action plans that were often too ambitious without due consideration that, even if financing was available for all capital investments needed to meet the planned targets, the subsequent cost of the entire action plan could be unaffordable for the economy. This would be the case if the country (region) could not finance–out of current national (regional) income–the operating and maintenance costs of new (higher) levels of fixed assets plus the operating costs of the new institutions that need to be put in place.

In the NIS, probably the most sizeable opportunity to enhance government expenditure on environmental investments in the short and medium term is through revising public sector expenditure choices. This could reduce spending in areas that both increase emissions and impoverish societies, thereby releasing resources for investments that enhances both the environment and welfare. One obvious area of the wasteful use of public resources, particularly in the NIS countries, is ongoing subsidies to loss-making state-owned or even private enterprises that subtract value from, rather than add value to, the economy (OECD, 1998b; EBRD, 1998). Reducing excessive military expenditures could also potentially release large resources for the environment and development (Partridge, 1996; Gandhi and others, 1997).

Budget expenditure cuts in the NIS usually involved ceilings for investment expenditures while financing was made available for operation costs of exiting technologies or infrastructure. This often led to the continuing operation of inefficient and polluting assets, even if their replacement through investment would bring a high rate of return. In many countries of the former Soviet Union, the municipalities are equipped with extensive environmental infrastructure, such as immense waste water treatment plants designed by optimistic Soviet planners to serve a population several times larger than the current level.

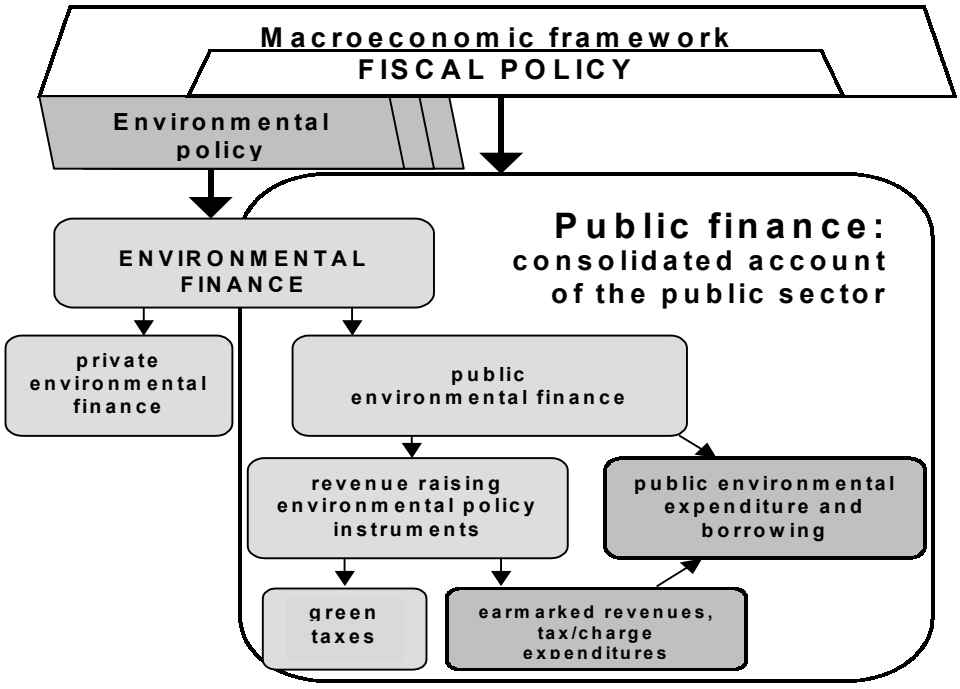
Institutional Responses to Barriers

Public sector environmental expenditures in transition countries have relied on three major domestic institutional sources of financing: local governments, transfers from central government budgets, and environmental funds (USAID, 1996; Peszko and Zylicz, 1998). Foreign aid played a crucial role in selected countries (for example, Estonia), but overall, transition economies in the CEE have never been aid dependent countries (Klassen and Smith, 1995).

In the CEE countries, budget transfers for environmental purposes have been gradually replaced by private financing and autonomous public environmental funds. For example, in the Czech Republic, the government budget share of total environmental financing dropped by more than half in 1997, compared with 44 per cent in 1992 to 1997 (OECD, 1999d). In the Baltic States, substantial budget resources have been channelled through Public Investment Programmes (PIPs), primarily to support environmental infrastructure investments.

In the CEE countries, the relative importance of national versus local budgets varies from country to country reflecting, among other things, the relative autonomy of local communities and the strength of municipal finance. In 1994, local governments in Hungary provided 79 per cent of budgetary PAC investments compared with 21 per cent from the central government. In 1996, local governments in Poland provided 84 per cent, against 16 per cent from the central budget. In Lithuania, however, local governments provided only 3 per cent of PAC budgetary

Figure 1. Environmental Investment Expenditure by Source of Financing in Selected Transition Economies



Sources: OECD ENV/NMCB common data base; for Belarus: OECD 1997b; for Ukraine: UN ECE 1999
Note: In the Ukraine, bank credit was not used for financing environmental investments, therefore commercial domestic sources of financing include mainly enterprises' retained earnings.

investments and the central government 97 per cent.[1]

The decline in environmental expenditure in the NIS could be attributed mainly to the contraction of public sector financing. Budget transfers, which historically had financed infrastructure investments, have largely dried up in the NIS during the transition and the associated economic downswing, with local governments turning to other sources such as debt issue and, increasingly, postponing investments (OECD, 1999d).

Access to financing of investments by utilities (water, transport, district heating, waste management) often depends on their ability to cover the full costs of their services through prices. For several generations municipal services were cross-subsidised in the planned economy (EBRD 1997). Now, often a significant increase in user charge levels is necessary to cover the capital and operating costs as well as the debt service. Most municipalities in CEE countries (re-) gained ownership of utilities and control over the rates. Utilities have been corporatised and commercialised, and tariffs are moving steadily towards cost-recovery levels. This has led in some countries to tariff shocks and arrears accumulated by households, especially in the lowest income groups where the share of household budgets allocated to utilities was particularly high. In the absence of protection mechanisms, the poor were disproportionately affected by the price increases and their unwillingness or inability to pay has undermined the financial viability of many investments (EBRD 1997). Some local governments, however, have not made commitments to full cost recovery pricing in energy, transport and environmental service utilities even if it would be affordable in the longer run.

In the NIS, utility restructuring has yet to be done. In several countries utility rates are still set by central governments (World Bank, 1998). Local budgets are overburdened by maintenance of extremely

[1] Based on the abater principle. Environmental fund spending is excluded. The breakdown across central and local government is based on investments made by investors with more than 50 employees only. (OECD, 1999c).

costly blanket subsidy schemes for utilities that transfer rents to rich households. Financial viability of utilities deteriorates further because of political pressures to maintain the provision of services to the non-paying customers. At the same time many liquid, commercial customers are disconnecting utilities because the tariff structure makes them subsidise households and insolvent customers and those who are able, but strategically unwilling, to pay.

Comprehensive Environmental Funds

Numerous barriers to adequate budgetary appropriation for environment purposes have motivated many environmental ministries in transition economies to look for earmarked and extra-budgetary arrangements for expenditure management. The principal stated rationale was to boost public environmental expenditures and to shield them against myopic fluctuations and budgetary cuts inevitable in the heat of fiscal consolidation.

Most CEE countries and the NIS have set up comprehensive environmental funds on national, regional and/or local levels. Comprehensive environmental Funds are domestic public entities that provide earmarked financing for a wide range of environmental improvements for both the public and private sector. Nearly all countries in the CEE/NIS region have at least one national environmental fund, and a few (Poland, Lithuania, Latvia, Bulgaria, Russia and Ukraine) have from two to several thousand, including regional and local funds. On the local level such funds also exist in China. National environmental funds of a similar status are under development in Mexico and China with technical support from the World Bank. There is no exact equivalent to the CEE/NIS environmental funds in "old" OECD countries. Some institutions have similar characteristics, although they are not comprehensive, but sector specific with targeted mandates (for example, French or Dutch water agencies, Superfund in US) and time limited (for example, French agencies managing revenues from air pollution and noise fees phased out before 2000). The government of Austria has contracted commercial banks and Germany state-owned banks to manage soft-loan programmes to support municipal environmental infrastructure investments.

The reliance on subsidies provided through earmarked environmental funds is by itself an indicator of weak enforcement of other, less distortionary instruments of environmental policy such as environmental standards, permits and taxes. The increasing effectiveness of enforcement of the latter instruments in the private sector, under the conditions of hard budget constraints, will augment the role of private financing (Panayotou, 1997). Also, tightening budget constraints in the public sector will contribute to improved cost recovery in the provision of environmental services by utilities (Gentry, 1997). In particular, in the CEE countries the main bottleneck to environmental finance is the lack of a credible policy framework to stimulate demand for investments, rather than the lack of finance (OECD, 1999d). In the NIS, persistent, serious obstacles to access to capital have additionally troubled the weak policy framework.

In many CEE countries, environmental investment funds (EIFs) have played an important role in financing environmental expenditures. In Poland, they financed about 30 per cent of environmental investments in 1998 (down from their earlier level of more than 50 per cent in the beginning of the 1990s) and in Hungary, Lithuania and Slovenia about 20 per cent (OECD 1999d), and 12 per cent in the Czech Republic. In Bulgaria, however, the share of EIFs in financing total environmental expenditure was negligible, only 0.13 per cent-0.26 per cent, although weak data were available on environmental investment expenditures (Ministry of Environment and Water of Bulgaria, 1999; COWIconsult, 1999).

In the NIS, the role of EIFs versus other sources of environmental financing was rather small. For instance, they covered only about 6 per cent of environmental investments in Russia (OECD 1999a; Goskomekologia, 1997) and less than 0.5 per cent in Ukraine (UNECE, 1999). However, a disproportionate amount of attention has been paid to these funds in debates on environmental policies in the NIS.

Legal status

The legal basis of EIFs ranges from a decree of the Ministry of Environment (for example, the Lithuanian Environmental Investment Fund), to a government Decree (Russian Funds and the Latvian Environmental Investment Fund), to a Parliamentary Act (for example, Poland, Czech Republic, Hungary). Funds established by the latter are generally stronger and more stable than those established by executive government acts. The legal status of some funds is well defined and rooted in the pre-existing legal order of the state. For example, the Polish debt-for-environment fund has a status of a public foundation defined in the Law on Foundations. The Slovenian Fund is a joint stock company registered under the commercial code. The Lithuanian EIF is registered under the Law on Public Enterprises as a non-profit enterprise and the Latvian EIF is registered as a non-profit, state-owned limited liability company. The independent legal status of some funds, such as the Polish or Czech funds, is defined in a special parliamentary act or by the Act on Environmental Protection.

Some funds (for example, in Bulgaria, Ukraine and some regional Russian funds) do not have independent legal status. Their assets are reduced merely to annual appropriations on a special budget line earmarked for environmental purposes. Disbursement is

made (or not) by the Treasury upon the authorisation of the environmental administration. These funds are institutionally embodied in the administrative structure of environmental authorities without independent management, staff and balance sheets. In most CEE countries and the NIS, environmental agencies in charge of supervising the funds have faced growing pressures from finance ministers to consolidate independent funds into budgets and increase financial scrutiny of their operations.

In the Russian Federation, the Federal Fund is incorporated into the state budget through an earmarked account and virtually all regional funds are consolidated into the budgets of regional administration. Apart from obvious drawbacks from the point of view of flexibility, budget consolidation has a few advantages. In several regions it helped prevent the revenues from disappearing because tax authorities became involved in the collection of environmental fees and fines. Incorporation of funds into the budgetary cycle of the regional administration enabled direct withdrawals from enterprises' bank accounts to occur in the event of delayed payments. Budget consolidation also enabled tighter supervision of the funds by financial authorities and enhanced financial discipline in the public sector, which is not famous for accountability and efficiency (PROEKO, 1998).

Management

The legal foundation and institutional set-up of the funds have not always ensured their operational integrity in terms of freedom from political interference in appraisal and selection of individual projects. The legal documents often do not clearly define and separate lines of responsibility of management, supervisory and control bodies. Responsibilities often overlap leading to situations where it is difficult to hold somebody accountable for individual decisions and for the performance of the institution. Violations of the principle that those who supervise should be separated from those who are supervised have not been uncommon. Situations involving conflict of interests have also occurred. In all cases, the participation of external sources of capital to funds (donors, international financial institutions) helped in effectively shielding Funds from political interference in specific allocations. Polish and Bulgarian debt-for-environment funds or the Slovenian Fund represent often quoted examples of this phenomenon. In the majority of funds that manage only domestic resources, management autonomy of the fund was largely dependent on accidental, fortunate personal configurations in the management and control bodies, rather than systemic institutional and regulatory provisions. Certainly management autonomy without effective accountability and transparency systems could quickly turn into the misuse of public funds.

In the most successful funds, the role for the responsible government body (for example, the Ministry of Environment) is curtailed to setting environmental priorities, key operational principles and performance standards, as well as project eligibility and selection criteria. Government bodies have an indispensable role and obligation to monitor and evaluate the performance of the funds. But appraisal and financing of individual projects is vested with independent management, strongly held accountable for performance.

In the funds that do not have independent legal status, various departments of the environmental administration usually carry out day-to-day operational management and the project cycle. It is only by rare coincidence that the ministry staff have sometimes revealed high competence in project development and financing, such as in the case of the water sector investment projects supported by the Estonian Fund. In the NIS, even on a national level, very few funds have well established executive offices with qualified staff and clearly defined responsibilities. The Federal Fund in the Russian Federation is an exception. Environmental funds in the NIS suffer political pressures limiting managerial autonomy and resulting in a low level of performance (OECD, 1998c; OECD, EU-PHARE 1999). However, as the case of the Polish National Fund shows, independent legal status does not, *per se,* shield the fund from political interference in the selection of individual projects.

Revenues

The amount of revenues administered by the funds gives an illustration of the fundamental differences between different funds. In 1997, aggregate revenues of the eight CEE "national" environmental funds surveyed by the OECD and EU Phare team (OECD/EU Phare 1999) totalled about $720 million, or $9.44 per capita.[2] In contrast, the corresponding figures for the eight NIS "national" environmental funds surveyed were about $36 million, or $0.16 per capita. Even within the CEE and NIS regions the funds differ dramatically, at least in size. The 1997 revenues of Russia's Federal Environmental Fund ($18 million), for instance, exceed the combined revenues of all other national funds in the NIS for that same year ($17 million).[3] However, in the whole region, Poland's National Fund for Environmental Protection and Water Management stands out with its

[2] These figures exclude the Polish and Bulgarian Debt-for-Environment Funds.

[3] Some regional funds in NIS were nominally larger than national funds. For example Environmental Fund of Tatarstan Republic reported nominal revenue of $48 million (PROEKO, 1998).

1997 revenues of about $403 million, surpassing the aggregate revenues of all other national funds taken together.

The total volume of annual revenue of all environmental funds in CEE (including regional and local funds) is estimated to exceed $1 billion in 1997 (over $13 per capita). About two-thirds of this sum accounts for Poland. In the NIS, the aggregated revenue of all public funds probably exceeded $100 Million ($0.4 per capita), however much of it may be in non-monetary form.

Environmental funds are usually capitalised by current revenues from earmarked charges and fines on pollution (for example, air emissions and waste water discharges), as well as from charges on natural resource use (such as water consumption, mining) and particular products (such as fuel, packaging). For some funds in Slovenia, Estonia and the Czech Republic, proceeds from privatisation have provided significant revenues. A few funds, for example, in Poland and Russia, have generated substantial profits from their operations in financial and capital markets. For those funds that used debt financing, revenue from loan repayments (with or without interest) has also increased, accounting sometimes for up to 50 per cent of annual revenues (some Polish funds). Foreign sources are also increasingly contributing to the revenues of funds in the regions. Two funds have been formed on the basis of debt-for-environment swaps (the Polish and Bulgarian Debt-for-Environment Funds). Slovenia's Environmental Development Fund, the Lithuanian Environmental Investment Funds and the Polish National Environmental Fund have been used as intermediaries by foreign financing institutions (the World Bank and the EU). As a special case, Russia's National Pollution Abatement Facility (NPAF) has been set up to manage the World Bank environmental investment loan to the Russian Federation.

The NIS have inherited from the former Soviet Union an extremely complicated and burdensome system of emission charges, levied on a large number of pollutants, which makes the administration of these charges very ineffective and costly relative to the revenue they generate. Poor design and enforcement of pollution charges create ample opportunities for polluters to evade payments leading to very low revenue collection rates, such as 19.4 per cent in 1998 for Ukrainian Funds, according to the Ministry of Environmental Protection and Nuclear Safety of Ukraine, (1999b). The revenue base of the Funds in the NIS is further eroded by high inflation and ineffective indexing of the charge rates (Golub 1998). Pollution charge offsets and widespread use of money surrogates, as well as generally excessive discretion and opportunities for individual bargaining, further undermines the disposable resources of NIS Environmental Funds.

Expenditure

The expenditure focus of the funds varies among countries and institutions. Pollution abatement investments in the air and water sectors account for the lion's shares of the expenditures of funds in the CEE. In these countries, the chief beneficiary has been the municipal environmental infrastructure sector. Environmental funds have provided a relatively small share of their financing support to the enterprise sector.

In contrast, in the NIS fund resources are commonly allocated to non-investment activities such as running costs and equipment for environmental authorities, monitoring equipment, nature protection or international co-operation. For instance, in 1998 the Ukrainian State Fund allocated 85 per cent of its expenditure to administration and research (Ministry of Environmental Protection and Nuclear Safety of Ukraine, 1999a) and the Federal Environmental Fund of the Russian Federation (FEF) in 1997 allocated almost 55 per cent (OECD, EU PHARE, 1999). Only a few funds, such as the Russain FEF or the Republican Fund in Tatarstan, financed significant investments in the real sector. For instance, in the years 1993-1997, FEF supported two typical project profiles. The first was relatively large (on average about $0.5 million) equity investments in partially or fully private companies that undertook investment in recovery of resources from industrial wastes. The second was rather small grants provided for the administration to purchase monitoring equipment or to support current activities (PROEKO, 1998). One reason for this non-investment focus of funds in the NIS is that their revenues are too low to allow significant spending on investment projects. For example, expenditures of the Ukraine State Fund in 1998 were $1.1 million, and those of the Russian Federal Environmental Fund in 1997 only $17.7 million, while a single waste water treatment plant for a medium-to-large size city with main sewerage may easily cost over $100 million. In addition, these small resources were scattered thinly among too many funds (several thousand local funds in Russia and Ukraine) and too many small projects to satisfy several stakeholders. Another reason was that the wages for environmental administration in the NIS were very low even compared to other government sectors and staff were often not paid for several months. Therefore, funds were under strong pressure from their controlling (and often managing) bodies to finance running costs and salaries of the regular government staff.

Environmental funds in the transition economies of the CEE and NIS usually represent little fiscal risk, as their liabilities are usually explicit and not contingent (see definitions in section III). The funds are typically restrained in assuming debt and do not face liquidity problems, although the turnover may be very low in the case of small revenue. There were

a few cases, however, of politically driven build-up of future obligations that could not be fulfilled. In several countries, there are legal provisions in place explicitly protecting the budget from assuming liabilities of environmental funds. These explicit clauses, however, may not be sufficient to shield the budget from implicit liability for a fund's obligations. Such implicit liabilities may stem from expectations fuelled by the generally soft budget constraint in the public sector.

Disbursement instruments

In CEE countries initially the principal form of financing was through grants, but this has increasingly been complemented or replaced by the provision of soft loans. Few funds are allowed to use other subsidy instruments, such as loan guarantees and equity investments.

The quality of the loan portfolios in these CEE funds that have historically relied most heavily on debt instruments (Slovenian and Polish Funds) was surprisingly high. There were few non-performing loans in their assets. In both cases, the Funds have often contracted commercial banks to perform credit analysis or comprehensive loan management (Peszko and Zylicz, 1998). The quality of bank services, however, always decreased if servicing banks were not selected through competitive processes, as in the case of the Polish National Fund. To improve loan performance, the Slovenian Fund maintains strong in-house human resources for loan management, and the Polish Funds are using a carrot in the form of an option to convert a part of loan principal into a grant at the end of a repayment schedule if loan servicing is undisturbed. The limited experience with loan guarantees and equity has been mixed. For example, overcommitment of loan guarantees and forward commitments of grants (in lieu of expected revenue) has caused serious liquidity risk to the Environmental Fund of the Czech Republic and triggered management replacement.

NIS funds have provided finance mostly in the form of grants. The stark exception is the Russian FEF, which invested almost half of its resources as equity in private, usually resource recovery, firms (OECD, 1998d). Direct loans have been used by the NIS funds but usually without appropriate skills and expertise to manage them with acceptable risk control. As a result, few of them have ever been repaid. This variety of instruments is justified but it carries a price tag as well. Disbursement mechanisms became non-transparent and a 'subsidy-equivalent' offered to an investor is rarely calculated, which makes cost-effectiveness difficult to measure, and therefore to achieve.

It is important that these disbursement instruments be adjusted to the needs of the projects to be financed. Some funds have found it difficult to disburse disposable resources because the transaction costs of obtaining grants or the total cost of loans (interests, fees plus transaction costs) were too high to attract recipients. There were also cases when funds sprinkled grants so thinly among different projects for equity reasons that, because of the lack of a full financing package, only a few of them actually triggered the projects implementation.

It is equally important for these instruments be adjusted to the institutional and managerial capacity of the funds. Usually it is best to first allow the fund to use simpler instruments, such as direct grants and interest subsidies, in order to accumulate experience with financial management, contracting, project appraisal and implementation monitoring. These instruments of disbursing subsidies are also more transparent. Major financial failures occurred when newly created, understaffed funds issued resource-intensive financial products such as direct loans, equity or loan guarantees. Unless a loan department was created with at least 2-3 experienced credit analysts to analyse creditworthiness and collateral of borrowers, or this task was contracted to commercial banks (for a fee), the loan portfolio usually quickly turns into a stock of worthless assets.

The experience of environmental funds in CEE countries indicate that contracting due diligence to, and sharing risk with, commercial banks have been good tools to mitigate hazards connected with issuing soft loans. Most successful environmental funds in Poland, for instance, retain the full responsibility for appraisal of the environmental and technical feasibility of the investment project, including verification of the project's cost-effectiveness and the project's (not the borrower's) cash-flows (Peszko and Zylicz, 1998). The banks are contracted (and paid) by the funds only for the analysis of borrowers' creditworthiness and collateral. The typical risk sharing agreement between the bank and the fund was 50 per cent each, which proved to provide a sufficient incentive for the bank to use sound, conservative banking principles. Such an arrangement also allowed the fund managers and stakeholders to retain control of the project's appraisal, implementation and monitoring of environmental benefits.

Very few funds were given explicit mandates to leverage private sector finance for environmental projects (Peszko and Zylicz, 1998). The Lithuanian EIF and the Polish Debt-for-Environment Fund are among notable examples of successful market creation by environmental funds through such instruments as matching grants. Polish national and regional funds have successful track records of leveraging bank credit (including micro-credit) to environmental investments through interest subsidies, notwithstanding the lack of the explicit mandate. However in most cases in the region, particularly in the NIS, the selection of financial products has been typically driven by such

considerations as political feasibility (favouring grants) or institutional growth and sustainability of the fund itself (favouring loans or equity). Several funds have fallen into a trap of directly competing with private sector financiers (banks, equity funds), crowding them out of the environmental investment market and bringing long-term damage to the sustainability of environmental finance. This is a particularly sensitive issue in the countries that are most successful in market reforms and economic development, such as Slovenia and Poland. An important component of their successful transition is a growing maturity and stability of financial markets. Private financial institutions are offering financial products that are increasingly well suited to finance healthy investors (including municipalities and utilities) implementing viable projects, with modest rates of return (EBRD, 1999c; Caprio and Demirgüç-Kunt, 1997)).

Programming and project appraisal

The absence of spending programmes and of transparent, rigorous project selection criteria is often an Achilles heel of environmental funds in the region. Still, virtually no fund is determined by a well-defined programme to implement. In most cases the idea of creating an institution came first, and later a "programme" was added-on for mainly formal reasons. Neither legal nor operational documents specify real objectives to be achieved by the funds. "Real" objectives would be those that are specific, measurable, accepted, realistic and time-bound. (SMART). Instead, the funds typically have (far too long) lists of vaguely specified tasks, which cover almost all possible environmental issues. Only in a very few cases, such as the Polish and Bulgarian Debt-for-Environment Funds, the Slovenian Fund and the Lithuanian EIF, are the mandates of the funds more narrow and targeted. The absence of such objectives makes it impossible to assign accountability for results and resource use and to evaluate a fund's performance. It is a comfortable way for those who control the funds and those who manage them to avoid responsibility for achieving environmental policy objectives. Absence of SMART objectives does not allow performance to be measured. This comfort may backfire, however, because without a clear spending programme with SMART objectives it is not possible to determine whether the fund is needed in the first place. Virtually no country has so far carried out an *ex ante* analysis to determine whether such a policy instrument as an environmental fund is an indispensable tool to achieve given policy goals. There is also not a single robust *ex-post* evaluation of whether the funds were indeed necessary to achieve any environmental results that have been achieved. The questions of what would happen without the funds or could these results be achieved with other policy instruments remain unanswered.

Most successful funds have a two-stage appraisal process. In the first, a simple 'pass/fail' criteria is applied as an initial screening to assess if the project is eligible. Subsequently, scoring criteria are used for comparing and ranking of eligible projects. This effectively "screens out" non-eligible projects and saves resources of both the fund and the applicant. Most effective appraisal criteria are relatively simple, measurable and objective, allowing as little discretionary judgements as practically possible. Most funds, however, still use, at best, eligibility criteria only, and then apply more discretionary approaches to prioritise eligible projects. The role of the political body, such as the Minister, is often overly important in making final decisions about project selection. Usually Funds provide support on a “first-come-first-served” basis and objective criteria, such as cost-effectiveness, do not appear to have much influence in the project selection process. Only two funds in the CEE/NIS region, the Polish Debt-for-Environment Fund and the Regional Environmental Fund in Krakow, have systematically incorporated project cost-effectiveness into the operational appraisal criteria (Peszko and Zylicz, 1998). Operational cost-effectiveness should be understood as a working system to measure, verify and allocate resources to those projects for which the full lifetime and discounted cost of achieving a unit of environmental benefit is minimised. For instance, many funds claim they use cost-effectiveness criteria in project appraisal but at the same time do not even collect information on lifetime costs or do not use sound cost-effectiveness indicators to compare and rank different eligible projects.

Post-project evaluation and monitoring is very weak in the funds in the NIS. Environmental benefits are even rarely measured and recorded. Hence, it is difficult to properly evaluate the environmental effectiveness of the Funds and justify them as necessary tools of environmental policies.

Environmental funds and non-monetary transactions

CEE funds generally operate on a cash basis. In contrast, funds in the Russian Federation and in Kyrgyzstan have relied heavily on non-monetary transactions (ERM 1998; PROEKO, 1998). For other NIS countries there is only anecdotal evidence of using money surrogates. In Russia, often it is very difficult to distinguish “real” flows of money, which can be used to finance projects, from "virtual" records of financial flows, which actually never reach and never leave the funds. Non-monetary transactions have been most common in local and regional funds. The Federal Fund has maintained a relatively strict cash-only policy until 1997 (PROEKO 1998). In Kyrgyzstan, the fund has even employed a full-time "barter specialist" (ERM, 1998). The main forms of

non-cash transactions commonly used by environmental funds in Russia involve accepting money surrogates as revenues (vecksels issued by enterprises, banks or some public sector entities) and complex chains of mutual settlements involving barter between a fund's creditors and beneficiaries. Many regional and local environmental funds in the Russian Federation have operated as brokers who clear mutual arrears through the exchange of goods or services between enterprises that are a fund's debtors and those that are a fund's creditors. Some funds have accepted swaps of pollution charge arrears into shares of debtor firms. Disclosure of non-monetary transactions in financial reports of the funds is often far from transparent. Not all funds record them in the financial statements. If so, securities are usually recorded at their face, not market, values. Usually it is not possible to determine what are the maturity, liquidity and discount values of these instruments. Very few independent reviews of the cash profile of Funds financial statements have been conducted so far. Table 1 includes data for six regional environmental funds in the Russian Federation compiled by PROEKO for the World Bank.

In many NIS countries, environmental authorities can waive facility environmental charge payments if the money is used for internal charge payments if the money is used for internal environmental investments. In general, such charge offsets simply reduce the revenue base for environmental funds. Some funds, however, record offsets as their "virtual" revenue, such as the Nizhniy Novgorod and Samara Funds in Table 1. Golub (1998) notes that the Russian pollution charge offset system may account for nearly three-fourths of total payments due to funds. Usually monitoring and control of company spending decisions by environmental authorities is very restricted. A few regional authorities–for example, in Sverdlovsk Oblast–have made an attempt to control the procedures of fee allowances, but without great success. Anecdotal evidence suggests that at least some investments "financed" through pollution charge offsets are not environmental by international standards(OECD 1998f; OECD/Eurostat 1998).[4]

Some analysts such as Golub in OECD (1998d) and Golub and Kozeltsev in ERM (1998) have defended offsets on the grounds that they give environmental authorities at least some leverage over a firm's environmental performance. They argued that such offsets could represent a more direct form of the Polluter Pays Principle (PPP) and offer administrative efficiency gains, as the polluter retains resources to implement pollution reduction measures instead of transferring them to the fund to be allocated subsequently for other measures. These arguments hold only on the grounds of the NIS-specific understanding of PPP (see the next Section) and disregard allocative efficiency. There are several problems associated with offsetting environmental charges that have not been fully recognised:

- Offsetting environmental charges distorts the efficiency of the allocation of public resources among competing environmental projects. With offsetting charges, it is not possible to spend resources on projects of the highest priority because expenditures are tied to the company that retains charges even if investing elsewhere would bring a larger environmental effect.
- Financing through offsets makes project appraisal and monitoring less transparent than with traditional external financing through a grant or loan. Under an offsetting scheme, the bargaining power of environmental authorities versus a polluter is extremely weak because money is held in a company's account and not in the account of the environmental fund.
- Offsetting provides an opportunity for tax evasion without motivating pollution reduction. Under an accrual corporate accounting system, a firm can deduct environmental charges from its income tax base even if they are not paid. If the charges were collected, the firms would have an incentive to reduce pollution and thereby reduce fee liability (even net of taxes). If, however, such charges are levied but not collected, firms have a clear incentive to maximize the "virtual" value of environmental charges that should have been paid, either through increasing pollution or through over-reporting, in order to minimize their tax burden. Moreover, the control of this overvaluing of charge offsets is almost impossible to control. If charges were paid, the amount debited from the firm's account would have to equal the amount credited to the government's account. With offsets, such external checks are blurred.
- Environmental fee offsets lead to fragmentation of environmental expenditures. In many NIS countries, according to the laws governing environmental charges part of the revenues of collected charges must be transferred to regional environmental funds and the Federal Environmental Fund. Therefore, local authorities have incentives to offset charges instead of collecting them in order to avoid sharing revenues with higher levels of government. All revenues are retained on the local level thereby making it difficult to achieve a criti-

[4] During environmental performance review of the Russian Federation, the OECD team visited Petrozavodsk pulp-and-paper mill that used pollution charge offsets to replace an old but small internal petrol station with a modern one several times larger. The new station was needed because the company had switched from transporting timber by river to roads and bought more than a hundred trucks.

Table 1. Estimated Revenues of Selected Regional Environmental Funds in the Russian Federation by Form of Payment, 1997 (per cent)

	Cash	*Vecksels*	*In kind and mutual settlements*	*Charge offsets*	*Non-cash total*
Environmental Fund of Nizhniy Novgorod Oblast	69	0	10	21	31
Government Environmental Fund of Vologda Oblast[1]	75	na	na	na	25
Environmental Fund of Tatarstan Republic	20	75	4	0	80
Environmental Fund of Sverdlovsk Oblast [2]	55	30	15	0	45
Environmental Fund of Samara Oblast	71	0	0	29	29
Environmental Fund of Rostov Oblast[2]	71	29	0	0	29
Total revenue [3]	38	52	4	5	62

Source: PROEKO, 1998

[1] For Vologda the figure is a consultant's (PROEKO) estimate based on the on-site interviews.

[2] Data for Sverdlovsk and Rostov Fund from 1996.

[3] Weighted total.

cal mass of money to finance significant environmental investments beyond the local scale.

- Offsetting environmental charges causes important fiscal risk. It represents one of several examples of the discretionary measures that were applied in an ad hoc fashion by public authorities in the NIS because of a failure to collect public sector revenue. As such, offsets add to the erosion of fiscal discipline within the entire public finance system. Subsidies become conveyed to the firms that strategically refuse to pay, expecting offsets at a later stage. Offsets cause a snowball effect since single exceptions inevitably turn into a rule. Offsets of environmental charges spillover to other fiscal instruments, contributing to tax arrears and obstructing the reforms of public finance.

St. Petersburg guidelines

Finance and environment ministries have debated the hazards of earmarking since the beginning of the transition period. Despite acknowledged flaws of earmarking, environmental funds have been recognised as useful, perhaps indispensable, tools for countries coping with problems of transition if, however, they meet the minimum performance standards outlined in the OECD guidelines (Box 1). Not only have these guidelines helped with the design of new environmental funds in the region, but they have also served as an effective tool for reviewing the operations of existing funds and designing technical assistance programmes.[5]

Future of environmental funds

In the second half of the 1990s, there has been uneven progress in implementing the OECD St. Petersburg guidelines (OECD, 1995a) by environmental funds. In the CEE countries, those few funds that have made the greatest progress are internationally recognised and often were able to attract significant external resources. However, these funds usually operated in the most successful market reform countries, where transition is coming to an end along with the main rationale for earmarked, extra-budgetary environmental funds. These funds find themselves under growing pressures to consider post-transition scenarios.

Subsidies always distort markets and increase public sector deficits. Therefore, the need for environmental subsidies is to be carefully reconsidered in the light of the generic "no-subsidy" principle that guides environmental policies in developed OECD countries. An improved understanding of the scale and the nature of that need may help to better target subsidies so that the funds can bring genuine value-added where and when it is really necessary, without obstructing the process of transition to an efficient market economy. The scenarios for the future of the funds

[5] Using the framework of the St. Petersburg Guidelines, OECD and EC Phare experts have conducted performance reviews of the Polish Ecofund (OECD/EU Phare, 1998), the Estonian Environmental Fund, the Czech State Environmental Fund and the Slovenian Environment and Development Fund. These reviews were conducted within the framework of the Task Force for the implementation of Environmental Action Programme for the CEE countries.

Box 1. Main Conclusions of the OECD St. Petersburg Guidelines on Environmental Funds in a Transition to a Market Economy

- To avoid or minimize the long-term economic inefficiencies inherent in the earmarking of funds, expenditures should be targeted to meet environmental priorities and promote projects with large environmental benefits relative to their costs.
- Environmental funds should play a catalytic role in financing, ideally offering no more support for projects than is necessary, and adapt to changing economic conditions.
- Environmental funds should be used in conjunction with, and reinforce, other environmental policy instruments, such as administrative direct regulations or economic instruments.
- Environmental funds should develop an overall financing strategy, follow clear and explicit operating procedures for evaluating and selecting projects, adopt effective monitoring and evaluation practices, and make effective use of internal and external expertise to enhance administrative efficiency.
- For investment projects, funds should have well-designed programme and project cycles to ensure the cost-effective use of resources.

  Environmental funds must not compete with emerging financial markets but should leverage financing from private sector enterprises and financial institutions for environmental investments.
- In designing and evaluating fund revenue mechanisms, environmental authorities should ensure environmental effectiveness, economic and administrative efficiency, equity and acceptability.
- Environmental funds should ensure transparency and should be accountable to government, parliaments and the public for their actions.

Source: OECD, 1995a.

in the CEE include a wide range of options, from "privatisation" and transformation into commercial banks to being fully melted back into the budget and administration. Perhaps the last useful public role to play by the CEE funds in their current form may come along with the implementation of the investment-heavy Environmental Directives of the European Union in Accession Countries.

Other CEE environmental funds, as well as almost all environmental funds in the NIS, have so far not succeeded to be effective tools of environmental policy nor efficient, transparent and accountable instruments of public finance. Environmental ministers are under pressure from their government colleagues to reconsider if it is worth paying the social cost of earmarking to maintain this instrument of environmental policy, which so far has brought so little value-added. The great challenge facing these funds that can pass this test will be to improve their performance in terms of efficiency and cost-effectiveness. A great deal of improvement is needed in the area of transparency, accountability, and non-intrusiveness with the private sector. Adjustments towards the St. Petersburg Guidelines (OECD, 1995a) would be an important first step. The good practices of integrating public environmental expenditure management and public finance, contained later in this paper, can provide further guidance for the reform of public environmental funds in transition economies.

WELFARE ECONOMICS APPROACH: ROLE OF GOVERNMENT AND THE PRIVATE SECTOR?

Market Failures and Policy Response Under the Polluter Pays Principle

Even in most mature economies, the volume of environmental investments, and hence the demand for financing of environmental projects, is usually suboptimal in unregulated markets because the investors who have to bear all project costs can not capture all benefits generated by these projects. Some project benefits are external, generating economic and financial advantages to the wider community (OECD, 1995b). Economic rates of return (ERR) on these projects are usually higher than internal, financial rates of return (IRR). The smaller the gap between ERR and IRR, the more the project can be financially viable in commercial terms, generating both financial returns and external, economic benefits in terms of environmental improvements ("win-win") (Peszko and Zylicz, 1998).

The policy response to environmental externalities in OECD countries is guided by the Polluter Pays Principle (PPP). This principle also provides the framework for environmental finance in market economies (OECD 1992). According to the PPP, polluters use their own resources to finance measures required to comply with environmental standards.

The government's role in combating pollution is to establish the policy and institutional framework from which demand for financing will emerge. On the supply side, the government is responsible for the provision of environmental public goods. In the area of pollution abatement in transition periods the PPP provides for exceptions to its "no subsidy" philosophy. Subsidies or soft financing may be justified exceptionally and under specific conditions. More specifically, subsidies should:

- not introduce significant distortions in international trade and investment;
- be limited to sectors which would otherwise have great difficulty complying with environmental requirements, and;
- be limited to a well-defined transition period and adapted to the specific social and economic problems associated with the implementation of a country's environmental policy.

The PPP is a stated policy principle in most CEE and NIS countries. Its implementation, however, is sluggish because it requires a clear separation of the roles the state plays both as a source and regulator of economic activity. In addition, in many countries in the region, such as in the Russian Federation, the PPP is becoming reinterpreted in a way that diverges from the OECD tradition. The principle is said to mean that polluters should pay the costs of damage caused by their pollution (CPPI, 1998). Because such a principle is obviously impossible to implement, it often boils down to the idea that polluters should pay some pollution charges as a source of revenue for environmental authorities. It is difficult to build effective and realistic environmental policy on the basis of such an interpretation of the PPP principle.

Normally, mature financial and capital markets are expected to respond quickly to the demand for financing pollution abatement by developing adequate financial products (Kwang and Brewer, 1997; Dasgupta and Laplante and Mamingi, 1998). Some soft, temporary government measures, such as information provision, may be used to accelerate the response of the private financial markets, as reflected in the recent debate about the "greening" of the private financial institutions (Delphi Int. Ltd and Ecologic GMBH, 1997; World Bank and International Finance Corporation, 1996).

In the transition economies, the policy response fully consistent with the Polluter Pays Principle is usually not feasible. Due to historical conditions, transitional distortions in the public budget management and in the financial markets' policy response will usually be second best (Peszko, 1999). Many transition economies face not only ongoing pollution, but also have to cope with the environmental legacy accumulated during the former planned economy. Many environmental problems involve severe human health effects or irreversible environmental impacts and damages to natural capital (World Bank, 1998). Development of a regulatory framework appropriate to the new market economy and the strengthening of institutions capable of implementing and enforcing it effectively also takes time (Shaughnessy, 1995). Moreover, financial markets do not become mature overnight, creating persistent barriers to the socially efficient volume of environmental investments (Laurson, et. al, 1995).

Role of the Government and the Public Sector

Public sector finance has a different role from private finance. Businesses invest money in anticipation of future cash returns. The cash return on successful investments exceeds the firm's cost of capital (Brealey and Myers, 1996). Unsuccessful investments are penalised by the market. Governments undertake investments because they anticipate future social returns, which may or may not be pecuniary. Successful government investment is when the social rate of return exceeds the social opportunity cost of public funds, which is the equivalent to a firm's cost of capital (OECD, 1995b). The social opportunity cost of environmental investments includes social benefits foregone because of not investing these funds in education, health service, and so on, as well as the cost of using distortionary future taxes to service any debt incurred to finance the investment.

The public sector is essential to provide public goods and infrastructure in such environmentally sensitive sectors as energy, transport and municipal environmental services as well as forestry and nature protection (Clements and others, 1995; World Bank, 1994). A public good can only be provided by government intervention since private enterprise has no interest in products to which access cannot be restricted, and therefore priced and sold (Samuelson, 1954). Governments also invest in public consumer durables, such as parks, museums, and socially responsible media. For such goods it may be inefficient to recover full costs through user fees, either because consumption of these goods is not rival (up to the point of congestion), or because it is difficult to exclude non-paying users (Buiter, 1999).

Public investments may yield direct cash returns. Sometimes the user fees for private consumption of public infrastructure may cover full annual investment and recurrent costs plus even yield net cash earnings (World Bank, 1994). If, however, the risk adjusted, financial rate of return also exceeds the prevailing cost of capital of private firms, there is no need for government to undertake investment. Public resources could be saved and allocated elsewhere where they are genuinely needed (Zylicz 1998).

Temporary government support to non-infrastructure environmental investments in the pri-

vate sector may sometimes be justified by the interest to society as a whole. However, subsidies to the private sector are regarded as a second-best solution because they create other distortions in the economy and may have a rebound effect on the environment (De Moor, 1997; Pieters, 1997; Panayotou, 1997). The first-best government's core functions *vis-a-vis* the private sector include ensuring the rule of law without which markets do not function, strengthening human resources and infrastructure and establishing a regulatory framework that fosters socially beneficial incentives (OECD, 1999e). Within their regulatory functions, governments are expected, among other things, to internalise external environmental effects into the market price signals through administrative or economic instruments (OECD and PPC, 1995; World Bank, 1995; Pearce and others, 1997; Peszko, 1999).

Distortions to Environmental Versus other Public Finance

Environmental advocates often say that the environment calls for special budgetary treatment compared to other public goods such as education, health care or street lighting. Economic theory indeed provides some guidance to support this view. The root of many problems associated with allocating budgetary resources to environmental projects, not only in transition economies, is the lack of a specified political constituency for the environment that could effectively take part in political bargaining over the allocation of the government budget (OECD 1995a). Environmental projects, unlike many other investments in social infrastructure (roads, hospitals, schools), often benefit very dispersed individuals and communities (the common good problem). Allocation decisions are additionally distorted by inter-community externalities. For example, hospitals, roads and water supply benefit directly the community that invests resources. In contrast, a waste water treatment plant yields benefits to neighbouring communities downstream. In addition, these benefits are deferred in time, while the time frame considered by most political groups involved in budgetary bargaining is limited by the election schedule. When projects generate intergenerational benefits, a potential part of the constituency for the environment cannot take part in the bargaining process because it is not yet born.

PRINCIPLES OF SOUND PUBLIC FINANCE

Three Main Goals of Public Expenditure Management

The three main goals of all public expenditure management systems, widely quoted in the literature, are fiscal discipline (expenditure control), allocative efficiency and cost effectiveness.

Fiscal discipline

Due to the fact that public financial resources in general have features of "common, open access" resources, they are susceptible to the "tragedy of the commons". In the absence of any constraint, meeting the demands of disparate claimants, inevitably behaving like "free riders", is likely to result in large, unsustainable deficits that translate into an unstable macroeconomic environment—high inflation, high interest rates, burgeoning current account deficits—of which the social cost is tremendous. Therefore, implementing constraints on the aggregate level of spending and deficits over the medium-term becomes the overriding objective of all public expenditure management systems. This control over total public sector expenditure translates into constraints imposed on sectoral financial envelopes. The fiscal consequences of public environmental expenditure, including central and local government budgets, state owned enterprises and extra-budgetary funds, must be subject to the same scrutiny as all other expenditure sectors.

Fiscal discipline requires control over the expenditures not only of the government *sensu stricto*, but also over the entire public sector. For accountability and financial control, reports should consolidate the financial operations of the general government (central and local governments) and the financial activities of all entities controlled by the government (OECD, 1996a). Moreover, it implies control not only of explicit expenditures and commitments, but also of other explicit or implicit commitments that can have an immediate or future fiscal impact. Government liabilities can be certain or uncertain (contingent), and explicit or implicit (Schiavo-Campo and Tommasi, 1999):

- Explicit liabilities and commitments that are legally mandatory and predictable, such as budgeted expenditure programmes, multi-year investment contracts, and debt obligations;
- Explicit and contingent liabilities that are legal or contractual obligations triggered by a discrete event that may occur with certain probability, such as state guarantees for loans contracted by non-central government entities (sub-national governments, extra-budgetary environmental funds, public and private enterprises) and state insurance schemes (such as for floods);
- Implicit liabilities represent an obligation or expected burden for the government that is not legal but arises from public expectations. For example, governments are expected to maintain a public environmental infrastructure, and may be expected to assume some liabilities of extra-budgetary environmental funds in the event of their failure, even if not required to do so by law.

In most countries budgeting decisions focus on direct expenditure programmes and on multi-year explicit legal commitments such as debt servicing. Less attention is usually paid to implicit or contingent liabilities. In the wake of financial crises, this makes future problems worse than they would be if the realities were faced more openly (OECD, 1997a). Sound budgeting and policy formulation requires a wider and more courageous approach, covering more effectively and directly the fiscal risks faced by governments in the short term as well as in the long term. For example, obligations arising from current or new environmental expenditure programmes and policy measures must be assessed realistically, whatever their nature — implicit or explicit, direct or contingent.

Allocative efficiency

In democratic countries, the budgetary process is the preferred mechanism that societies use to ensure the best use of public resources. Within the framework of aggregate fiscal discipline, the challenge is to prioritize competing claims of different social objectives on scarce public resources (World Bank, 1999). Difficult choices must be made between the marginal social benefits of expenditures on, for example, education, health service or environmental infrastructure. Ultimately, the aggregate expenditure outcome is achieved through political bargaining. Ideally, the expenditure outcome is based on consensus and bargaining is supported by adequate information being provided to all parties about the trade-offs that are being made, including what everyone is having to give up and gain, together with future benefits that will derive from current sacrifices (Campos and Pradhan, 1996).

Impersonal rules for evaluating the relative importance of programmes and projects improve the quality of the prioritization process. Since impersonal rules apply equally to every programme and project, the government cannot be as easily accused of favoritism and thus is better able to defend itself against criticism. Economic cost-benefit analysis and incidence analysis are examples of such rules. The first can provide information on the net social gain, while the second can potentially make transparent who gains and who loses (World Bank, 1999). Certainly, this view assumes that parties are guided by binding rules and that incentives are in place to seek outcomes through rational debate rather than through corruption, fraud or violence. Moreover, methodological and informational problems can create significant uncertainties and grounds for legitimate differences in interpretation.

Central ministers, by definition and by their mandates, are in a comparatively better position to ensure the efficient allocation of public resources among different sectors. The line ministers, including the minister of the environment, whose view on a general budget is by nature parochial, have comparative advantages, such as information, in programming and allocating resources within their respective responsibility areas, within the external constraint on the sectoral envelope size. The new challenge to the budgeting process is for the government to develop mechanisms to avoid sectoral spending decisions that undermine the objectives of other sectors' expenditure programmes. For example, much curative expenditure by the ministry of the environment could be avoided, and hence common resources saved, if the ministers of transport, energy or agriculture are more informed about the concerns related to environmental externalities.

Within sectors, a rational process of setting priorities is also needed to ensure allocative efficiency. Hard budget constraints from the top are necessary, although not sufficient, conditions to create incentives for sectoral ministers to prioritize expenditures and to seek efficiency (OECD, 1996a).

Cost effectiveness

Public finance schemes should achieve their objectives at minimum costs. Cost effectiveness is considered not to be an issue in the private sector, where the incentive structure on competitive, private markets forces all economic agents to continuously search for cost minimizing opportunities. Such incentives do not exist automatically in the public sector; the opportunity cost of money is not a painful constraint (due to plentiful opportunities for rent-seeking and free lunches). The necessary conditions for such incentives to be created include a hard budget constraint, explicit legal requirements supported by the rule of law, managerial autonomy deep-seated in accountability and transparency mechanisms, predictability of resource needs and availability, a compensation system rewarding cost savings and high technical competence (World Bank, 1999).

Contrary to allocative efficiency, cost-effectiveness is primarily a technical concept and always suffers from political influences. Therefore, it requires a sufficient degree of managerial autonomy over allocations of resources among specific projects and a responsibility to implement defined expenditure programmes. However, it is unlikely that public sector managers will be committed to cost-effectiveness unless this is clearly defined in their lines of responsibility, they are held accountable for performance and cost-effectiveness is a prominent performance indicator. Managers can be held accountable for project selection only if they are exclusively responsible for it. Managerial autonomy requires the separation of those who control from those who are responsible for management and are controlled. The control body, which can be political in nature, can be held accountable for ensuring that the executive managers use

public financial resources cost-effectively, according to the established rules, and that expenditure goals are effectively achieved. Even the control body must also operate within the clear boundaries of the law and explicitly established rules.

The capacity of public sector institutions for cost-effective delivery of services depends also on the predictability of the flow of resources. Unless an environmental ministry has a degree of confidence in how much its programmes cost and the resources it will have available over the period of implementation of those programmes, it will not be able to optimize plans and therefore will not be able to make cost-effective allocations. For instance, in several transition economies, the budget is remade during the year and line agencies face considerable uncertainty in making their expenditure plans for the fiscal year (OECD, 1999b).

Managerial autonomy and predictability will not produce desirable results unless the civil service in line agencies attracts competent individuals. A necessary prerequisite to do this is adequate, performance-based compensation that closely aligns public with private sector compensation. However, this needs to be complemented by a merit-based recruitment and promotion system. Without such a system, competency will not be rewarded appropriately, and this will affect the morale and thus the incentives of civil servants (Campos and Pradhan, 1997). The worst-case scenario is one in which promotions and recruitment are based solely on political connections and influence. This may happen, for example, when the environmental minister, who is a political appointee by nature, has an exclusive right to nominate executive board members of a fund. In such cases, high salaries will tend to go to those who are most well connected and civil servants will tend to concentrate on establishing such connections (Schiavo-Campo and Tommasi, 1999).

Necessary Conditions for Achieving Public Expenditure Goals

Rules providing for expenditure control, efficiency, and cost effectiveness may exist on paper but they may not be binding; mechanisms are needed to impose costs on politicians and bureaucrats who violate the rules. Such mechanisms must ensure transparency and accountability in all aspects and sectors of public expenditure systems. The achievement of the objectives of public expenditure management rests on several pillars, namely, transparency, accountability, budget comprehensiveness, participation, consistency, equity, additionality and non-intrusiveness (Schiavo-Campo and Tommasi, 1999; World Bank, 1999; OECD, 1999b). The first three seem to be the necessary conditions for good public expenditure management.

Transparency

Transparency entails low-cost access to relevant information. Transparency of fiscal and financial information is a must for an informed executive, legislature, and the public at large (normally through the filter of competent legislative staff and a capable and independent public media). Environmental expenditure schemes, just like all public expenditure programmes, should use acknowledged international standards of accounting and information disclosure (OECD, 1996a). Confidentiality of information in the public sector should be minimized and all institutions should be reasonably open to public participation. As Schiavo-Campo and Tommasi (1999, 13) state: "there is never a good reason for secrecy concerning revenues and rarely a good reason for secrecy concerning expenditures". It is essential not only that information be provided, but that it be relevant and in understandable form. Dumping on the public immense amounts of raw financial figures does nothing to improve fiscal transparency.

From a fiscal perspective, an essential requirement is to ensure transparency of financial statements of all government controlled institutions. A statement of accounting standards should be presented with the budget of every institution. The accounts should reflect high standards and should be audited by an independent external auditor (OECD, 1998a). This independent assurance of integrity of financial reports requires a mechanism to be in place to ensure that external audit findings are reported to the controlling bodies and that remedial action is taken. Standards of external auditing should be consistent with international standards (OECD, 1998a). Working methods and assumptions used in producing financial forecasts should be made publicly available.

The International Monetary Fund assembled in 1998 a Code of Good Practices on Fiscal Transparency, which underlines the importance of clear fiscal roles and responsibilities; public availability of information; open processes of budget preparation, execution, and reporting; and independent reviews and assurance of the integrity of fiscal forecasts, information and accounts.

For public financial institutions such as an environmental fund, criteria for the allocation of resources, such as selection criteria of projects and beneficiaries qualified for subsidies, should be available to the public. Implementation of these criteria should include public participation and should be ex post verifiable by the public.

Accountability

Accountability means the capacity to hold public officials liable for their actions (Schiavo-Campo and Tommasi, 1999). Accountability measures always must address three questions: accountability by

whom; accountability for what; and accountability to whom.

Autonomy and competence of line agencies are necessary but not sufficient for efficiency. Indeed, there is no guarantee that the line ministries, agencies or fund managers, despite their superior information, will implement their expenditure programmes in ways that will achieve the intended results at the lowest possible cost. They could just as well use their budget inappropriately, for example, for personal or parochial gain. Hence, accountability systems should be in place to hold all parties accountable to their respective constituencies for their performance.

The subjective dimension of performance should never be neglected, but it is advisable in most cases to define performance in terms of objective measures. With respect to public expenditure management, performance should be assessed by reference to the three conceptual goals of expenditure control, efficient strategic allocation and good operational management (cost effectiveness). But on the level of a specific expenditure programme, its particular objectives should always be explicitly stated and performance should be assessed in terms of their achievement. The statement of objectives should be SMARTT. This means: (i) Specific — to enable assignment of responsibility for their achievement; (ii) Measurable — to enable monitoring of progress towards achievement and eventual ex post verification of results; (iii) Agreed — to be feasible; (iv) Realistic — because if the objectives are not achievable, resources allocated for their implementation will be wasted; (v) Time-bounded — to allow rational planning and checking of the results, and (vi) Tough — because if objectives can be achieved without additional effort, then no intervention, and no public resources are needed. Once properly stated, the objectives should be implemented and enforced.

Effective accountability has two components: responsibility and consequences (Schiavo-Campo and Tommasi, 1999). First, accountability is an empty concept unless clear lines of responsibility are firmly established and consistently maintained. Responsibility can also be understood as "answerability", that is, the requirement that government officials and public sector personnel respond periodically to questions concerning where the money has gone and what has been achieved with it. Second, there is a need for predictable and meaningful consequences of good and bad performance with respect to one's line of responsibility. Consequences need not necessarily be punitive, monetary or individual.

Accountability will depend upon the extent of oversight of financial accounts and audits by groups in civil society (for example, Parliamentary subcommittees); implicit or explicit performance contracts for agency heads and their employees; and the extent of performance audits and their publication (OECD, 1996a). External audits of the government are typically performed by a separate state organization, which usually reports its findings to the legislature and/or the public, as well as to the audited entity itself. State auditors may perform several types of audits, including compliance/regularity audits, performance audits, value-for-money (efficiency) audits, and financial (assurance) audits.

The credibility of external auditing requires that the state auditor and its staff be independent of the governmental units being audited and have unrestricted access to required information. This independence is typically set forth in the legal provisions establishing the state auditing organization. Audits must be performed in accordance with generally accepted auditing standards. All extra-budgetary funds and specialized agencies should additionally be subject to regular financial audits conducted by an independent chartered accountant. If the scale of financial operations is very large and includes international transactions, then an audit should be conducted by an international independent financial auditor.

Comprehensiveness of the budget versus earmarking and extra-budgetary funds

The budget is the financial mirror of government policy. Most economists argue that for the budget to be an effective instrument of achieving government policy goals it should be comprehensive (OECD, 1996a). The mirror should tell the full truth about the state of public finance, disclosing all revenues and all expenditures of every level of government and of all government controlled entities (the so-called general government). But economists do not universally agree on the optimal level of comprehensiveness in budget making. On the one end of the spectrum of ideas there are neo-classical, mainstream analysts who argue for far-reaching consolidation. Ideally, all public sector revenue, without exceptions, should be pooled together in the general fund and the legislature, guided by the executive body, should freely allocate these common resources to different public expenditure programmes so as to equalise the marginal social benefit of the last coin spent for each programme. On the other end, economists from the "public choice" school of thinking advocate earmarking and separate bargaining over each tax-expenditure programme (Buchanan, 1963; Goetz, 1968).

Earmarking is a practice of assigning revenue from specific taxes or group of taxes to finance specific government services (Buchanan, 1963; McCleary, 1991). The criticism of earmarking is most vigorously expressed by mainstream economists and public administrators who view government as a single, almost personalised entity ("benevolent social planner") who knows the preferences of a society and

is in the best position to allocate and reallocate common resources in order to maximise the overall social welfare. From this perspective, any restriction on the freedom to move resources from a lower to a higher marginal utility expenditure programme must be perceived as a painful infringement on welfare. Social choice economists, on the other hand, argue that it is a wrong vision of how budgeting decisions are made in society. They recognise that the political process and the information that a government possesses are imperfect and that societies consist of many groups with different preferences attempting to arrive at a consensus (or at least a simple majority) to support alternative compositions of public expenditure (Buchanan, 1963; Teja and Brackwell-Milnes, 1991).

Earmarked revenues may be directed to specific budget accounts and special institutional arrangements for administering expenditure programmes. These expenditure management services may be institutionalized within the government or can be contracted out to government-owned entities, as in Germany, or even to the private sector, through management contracts, as in Austria (see the long list of institutional options for public expenditure management in the concluding section). Earmarking may or may not lead to extra-budgetary public expenditure management. Some government revenues are directed to public institutions placed outside of the budgetary system and enjoying independent legal status. This is the case of several environmental funds in the CEE countries and the NIS. Certainly, there are extra-budgetary institutions without earmarking where a fund or a foundation is established and capitalized from discrete budget transfers. The degree to which money flowing through these extra-budgetary institutions are disclosed in the budgetary "mirror" and the degree of government control over them varies from country to country.

The ultimate instance of earmarking is featured by pure benefit taxation, when well-defined taxpayers are charged for the collective provision of public services they benefit from (for example, road funds, utilities). User charges make sense when the collective service provided is an impure public good: that is, when it is possible to exclude non-users (and non-payers) from consumption. In such instances, the agency providing the public service is given the authority to collect user charges and the responsibility to implement expenditure programmes in order to develop, maintain and operate the collective infrastructure. The government role is that of supervising the natural monopoly, the features of which such an agency often exhibits.

Below we summarise the main arguments in favour of and against earmarking, invoking and confronting different points of view found in the literature (Deran, 1965). The objective of this overview is not to judge whether or not earmarking is always a good thing, but to extract practical guidelines whether and under what conditions earmarking may enhance public environmental expenditure without harming public finance.

(a) Arguments in favour of earmarking

Earmarking embodies benefit principles of taxation, which plead that taxes are fair and efficient if they are borne by those who benefit from the associated expenditure (Samuelson, 1954; Teja and Brackwell-Milnes, 1991). For economists, such taxes have an appealing analogy to voluntary market prices. Therefore, earmarking seems to work best when there is a strong revenue-benefit link and the government service has all the characteristics of a pure public good except excludability (McCleary, 1991). Not all public environmental expenditure would pass these tests. For instance, earmarking pollution charge revenues for supporting pollution abatement measures undertaken by polluters does not score well by this criterion, although Pirtilla (1999) has made a theoretical case of where it could. Revenue-benefit links are weak because such expenditures provide benefits not to polluters, but to victims of pollution, because of the externality involved (which makes this public good "impure"). From the polluters' point of view, no abatement is better than subsidized abatement, unless the subsidy covers more than 100 per cent of all associated net costs. By contrast, earmarking user charges collected by public utilities or agencies for provision of collective infrastructure services, such as water supply and treatment or waste management, exhibits all the advantages of benefit taxation.

Autonomous management of earmarked accounts or extra-budgetary funds may be desirable for improving operational efficiency and cost-effectiveness in public spending. Certain categories of expenditures—for example, heavy infrastructure investments — require management mechanisms and a multiyear perspective in the use of funds, which are missing or restricted within the traditional budgetary procedures. After all, the whole government administration machinery is designed to serve regulatory functions and policy-making, and not the development and financing of investment projects. Moreover, vital environmental and development infrastructure investments and maintenance programmes in transition countries are more susceptible to erratic budget cuts than, say, public sector employment and wages. Unstable revenue flows over the life of large public sector investment programmes may result in cost overruns, due to, for example, costly heavy machinery lying idle over extended periods of time until adequate funding is available for complementary equipment (Teja and Brackwell-Milnes 1991). Usually there are limits to which the flexibility of traditional appropriation management rules can be adjusted for the efficient management of investment programmes. However, even without earmarking, the introduction of flexible rules for transfers between budgets of dif-

ferent ministries, the carry-over of appropriations from one fiscal year to another and a strategic multi-year perspective in budgeting can always improve the quality and operational efficiency of traditional budgeting (OECD, 1997a). The advocates of earmarking for such purposes bear a burden of proof that the flow of earmarked revenue would be more stable than under a comprehensive budget system. For instance, in most of the NIS, revenues earmarked for environmental purposes have so far failed to provide either significant or predictable financing for investments. There is no difference between erratic financing from environmental funds and erratic financing from the budget.

Earmarking is said to increase acceptability of new taxes through a stronger revenue-benefit link and through increased taxpayers' knowledge of how their taxes are used. Teja quotes the argument that the voter who might have approved a tax increase if it were earmarked to, say, environmental protection would oppose it under the general budget because she or he may expect the increment to be allocated to an unfavoured expenditure such as defense (Teja and Brackwell-Milnes 1991). This argument is close to the heart of many environmentalists who believe that earmarking environmental taxes enables more environmental expenditure than could have been obtained otherwise from a consolidated budget.

So far there is mixed empirical evidence to support this belief. Some researchers, such as Margolis (1961), analyzing expenditures for education in the United States, have even suggested that earmarking tends to reduce, rather than increase the willingness of taxpayers to approve expenditures. Buchanan (1963) attempted to generalize this argument. He found that public services characterized by more elastic demand tend to attract more resources under the general budget system as compared with earmarking, while the services for which demand is less elastic with respect to income stand to gain more under earmarking. Elastic demand public services are those which the taxpayers are willing to give up first when their income shrinks and when painful sacrifices must be done. Public services that provide differentially higher benefits to particular subgroups in the community tend to be relatively more demand elastic than services that are more "general" in benefit incidence (Buchanan, 1963, 466). Education is an example of elastic demand services, as it benefits only families with children. Environmental protection seems to be even more elastic, in the case of the non-uniformly dispersed pollutants, where some segments of the population suffer from pollution more than others.

Experience in the NIS seems to support this view. Voters have so far been more willing to approve the shrinking of environmental funds, rather than budgetary expenditures on health or police protection. Therefore, perhaps a higher level of public environmental expenditure could be secured by tying them to these less demand elastic services in the comprehensive budgetary bundle. In Mexico, the share of environmental expenditures of GDP (0.8 per cent) and per capita ($65) are among the highest among transition economies (OECD 1998g), and a bulk of it is attributed to a high budgetary ratio for the environment. The share of the Mexican Ministry of the Environment in the federal budget has increased from 4.3 per cent in 1995 to 6.2 per cent in 1998. The Ministry claims that, unlike the budget of other sectors, the budget allocation for the environment has been increasing regardless of the prevailing economic situation (SEMARNAP 1999). If this argument was more universally valid, the practical implications could be profound. For instance, environmental pressure groups may do better by welcoming budgetary consolidation of earmarked environmental funds and focusing their effort on lobbying for a larger general-budget ratio for environment. If the comprehensive budget system were more transparent and if expenditure prioritization more closely matched society's relative preferences, tax and expenditure acceptability could also be improved.

Earmarking may protect priority expenditures benefiting vulnerable groups of society from budget cuts that favor small though powerful political interest groups. However, this is a poor substitute for strengthening democracy, civil society and the rule of law in order to provide better protection of those vulnerable groups. Moreover, powerful interest groups can use precedence of earmarking for the environment to ensure earmarking of much larger shares of the budget for their benefits. Environmental expenditure may become a victim not only of single budget cuts, but also of more permanent marginalization.

The "something is better than nothing" argument praises earmarking for guaranteeing that environmental programmes are funded at least at some minimum threshold level no matter what happens to the local economy, tax collections or political struggles. However, "something" usually is not enough to implement a programme. "Sprinkling" too little resources among too many projects results in endless project implementation, cost overruns and a waste of public money.

The environmental effectiveness argument states that earmarking generates resources to reduce pollution. This argument stems from a lack of understanding of the complex incentive structure that drives polluters to reduce emissions. Potential access to earmarked funds may actually increase pollution because it gives polluters an excuse to postpone emission reduction until (always scarce) subsidies are made available. The most effective and the least distortionary way to induce polluters to take action soon is to set the environmental tax rate at the incentive level (Peszko, 1999).

Earmarking is sometimes required by donors to

insulate their projects and programmes from political risk. It could be avoided if the credibility, transparency, accountability and professional capacity of budgetary institutions were not in question.

Earmarking may also be effective in the special circumstances of windfall government profits, for example, in the case of significant mineral or fossil fuel discoveries. In such cases, due to the lack of institutional infrastructure in the budgetary process to manage a "wall of money" responsibly, special funds or accounts may be created to ensure that the huge rents accruing are not consumed immediately, flee the country or are appropriated by vested (private) interests, but that they are reinvested to support a more economically, environmentally and socially sustainable pattern of development, for example, in infrastructure or diversification of the economy. When large deposits of oil were discovered in Azerbaijan in 1998, the International Monetary Fund insisted on the creation of a special oil fund, with oil profits collected separately from other government revenues and allocated gradually to support infrastructure projects.

Extra-budgetary funds can help bypass salary ceilings in government administration to attract technically competent individuals. However, an adequate and performance-based compensation scheme for civil servants, closely aligning public with private sector compensation, could do the same in a sustainable way.

Table 2 summarizes the most commonly used arguments in favor of earmarking. Each argument is complemented by the suggested solutions that can be applied also under the comprehensive budget system. It should be acknowledged that these first best solutions are not always possible in the short and medium term in transition economies. In such instances, earmarking could be considered as a temporary, second best solution.

(b) Arguments against earmarking

Mainstream economists often condemn earmarking for distorting allocative efficiency. Earmarking introduces rigidity in resource allocation and encumbers programme prioritization. It makes environmental programmes dependent on specific revenues and can lead to a misallocation of resources with excessive spending, simply because the funds are available, or shortages because environmental projects do not benefit from general tax revenues (Schiavo-Campo and Tommasi, 1999). Earmarking subordinates expenditure decisions not to objective criteria but to the ability of politicians and lobbies to secure protection for their favored programmes. But public choice economists stand this theoretical criticism on its head and argue, instead, that it is general budget financing that imposes inefficient constraints on society's choices. Citizen-consumers effectively have to purchase (through payment of taxes) a bundle of heterogeneous government services, in which unwanted products may be tied-in to the more desired ones (Buchanan 1963; Teja and Brackwell-Milnes 1991). Buchanan has evoked an analogy to a monopolist who forces consumers to purchase a less than optimal mix of products through tie-in sales. It is probably theoretically not possible, and practically not fruitful, to judge earmarking by efficiency criterion. Perhaps it is best to say that under all expenditure systems environmental authorities should try to mitigate the damaging effect on efficiency through a transparent system of prioritization rooted in clear rules and objective criteria, such as cost-benefit analysis. It is worth noting, however, that those economists who advocate earmarking vigorously often admit that it has its greatest potential in pluralistic societies with strong democratic institutions (Teja and Brackwell-Milnes 1991). The countries of the NIS do not seem to be the most favorable place by that standard.

Transactions outside the budget are not subject to the same kind of fiscal discipline and control as are budget operations, partly because they "carry their own money" and partly because they are not explicitly compared with other expenditures (Schiavo-Campo and Tommasi, 1999). Often, transactions made from these funds are not classified according to the same criteria as budgetary expenditures, hampering a sound analysis of the government expenditure programmes. Separate accounting and audit scrutiny increase the cost of overseeing programmes financed by earmarked funds. To make it easier for the authorities responsible for public finance, environmental authorities should ensure that accounting and reporting is based on the same standards as in budgetary or other established institutions, for which a clear legal basis and auditing procedures are well established. Environmental ministries should enforce strict rules of expenditure control, accountability and transparency. External, regular audits of financial management of all autonomous funds and special accounts need to be performed according to acknowledged standards, and their results should be disclosed to public, parliamentary scrutiny and to control by the fiscal authorities.

Extra-budgetary funds increase the uncertainty of the estimates of public sector expenditures, making macroeconomic programming more difficult. To combat this, strict transparency needs to be enforced and an accrual accounting system needs to be gradually introduced. Medium-term financial forecasts need to be carried out, including contingent and implicit liabilities. The same expenditure classification system as other government programmes (budget) should be followed.

Earmarking breeds vested interests and increases the risk of corruption and waste. Therefore, strict rules of expenditure control, accountability and transparency need to be enforced.

Once created, earmarking is difficult to phase out.

Activities that would not normally survive the scrutiny of a regular budget process often continue by their own inertia or vested interests. Therefore, it is essential to incorporate from the outset legally binding termination dates and/or sunset clauses for earmarking and for all extra- or semi-budgetary funds.

Earmarking used for environmental programmes tends to spill-over to other sectors by the demonstration effect, leading to budget fragmentation, myopia of a myriad of separated budgets and therefore more difficult economic management. Extra-budgetary funds in one ministry is often used by other ministers to "justify" their right to earmark revenues and set up their own special funds. Therefore, environmental policy-makers should always limit earmarking arrangements to environmental programmes that cannot possibly be implemented without earmarked revenue. The arguments against earmarking and possible mitigation measures are summarized in Table 3.

(c) Earmarking for environmental expenditure

Public environmental expenditures in transition economies have not always benefited from earmarking. Almost all countries earmark pollution charges and other quasi-fiscal instruments for environmental purposes, but only a few earmarked environmental funds have succeeded in attracting significant revenues. Environmental authorities in transition economies have not yet tried the alternative of shutting down ineffective "virtual" funds and improving budgetary expenditure management. The proposition that the volume of environmental expenditures could actually increase under general budget financing have not been empirically tested in transition economies, although the case of Mexico indicates that sometimes it may be the case. By the same token, there is no empirical basis to support the alternative proposition that public environmental expenditures would necessarily decrease without earmarked environmental funds.

The use of earmarked expenditure arrangements or extra-budgetary funds in the public sector entails social costs, which need to be explicitly acknowledged. Even if it may not always be a net welfare cost to society, earmarking introduces cumbersome disturbances for ministers responsible for public finance and for management of the economy. Therefore, when existing budgetary procedures are inadequate to manage certain activities, the optimal (first-best) choice is either to improve the budgetary procedures and/or to set up specific procedures for those particular activities, but not to place the activities themselves outside the budget. A menu of possible institutional options can be found in the concluding section. If environmental policy-makers find earmarked or extra-budgetary funds indispensable to achieve their policy objectives, they should always consider measures to mitigate the damaging effects to the fiscal system and to society in general and apply the good practices of public environmental expenditure management contained in the concluding section.

Additional Conditions for Achievement of Public Expenditure Goals

Fairness and equity conditions imply that public expenditure schemes should neither be discriminatory or regressive. When conflict between efficiency and equity occurs, compensation schemes for poor households should be targeted exclusively to explicit beneficiaries and designed without undermining environmental effects (for example, lump sum transfers or income supports are usually better than blanket price subsidies).

Consistency (predictability*)* results primarily from the rule of law and regulations that are clear, known in advance, and uniformly and effectively enforced. Public finance schemes should not change erratically, discretion should be avoided, promises should be kept. Lack of predictability of financial resources undermines strategic prioritization and makes it hard for public officials to plan the provision of services (and is also an excellent alibi for nonperformance). Predictability of government expenditure in the aggregate and in the various sectors is also needed as a signpost to guide the private sector in making its own production, marketing, and investment decisions.

Non-intrusiveness calls for environmental finance schemes not to create excessive distortions in the economy. Public support should be targeted exclusively to the correction of externalities without distorting or threatening to distort competition by favouring certain undertakings or the production of certain goods. Public environmental expenditure should not distort trade, for example, by discrimination related to the origin of the products concerned or abuse as an export subsidy.

And last, but not least, additionality requires that public financing should be used only where finance from private sources is not available to support socially efficient objectives. Public finance schemes should avoid competition with, and crowding out, private sector and existing public sources.

WAYS FORWARD: GOOD PRACTICES OF PUBLIC ENVIRONMENTAL EXPENDITURE MANAGEMENT

Need for Institutional Reform

Fearing the pain of fiscal consolidation, most environmental policy makers in transition economies have either established earmarked environmental funds or are considering to do so. These funds are sometimes consolidated with the budget, and sometimes are genuinely extra-budgetary.

In the second half of the 1990s, those few funds in the CEE countries that have made the greatest pro-

Table 2. Arguments Used in Favor of Earmarking and First Best Solutions

Arguments in favor of earmarking	*First best solutions*
Embodies benefit principle of taxation	None – but see if conditions for application of benefit taxes are met (strong revenue-benefit link, payers = beneficiaries)
Bypassing inflexible budgetary procedures: operational efficiency, cost-effectiveness	Increase flexibility of traditional budgeting, multi-year perspective
Bypassing salary ceilings to attract technically competent individuals	Performance based compensation scheme aligned with private sector
Protecting priority expenditures and vulnerable groups from budget cuts	Democracy, civil society and the rule of law
Increasing acceptability of taxes	Transparency and efficiency in budget allocation
Something is better than nothing	Enough is better than something
Enhancing environmental effects	Set pollution taxes at incentive level

gress in implementing the OECD good practice guidelines are internationally recognised and often were able to attract significant external resources. However, these funds operate in the most successful market reform countries. The transition to a market economy, which was considered as the main, temporary rationale for earmarked, extra-budgetary environmental funds, is coming to its successful end. The funds find themselves under growing pressure to consider post-transition scenarios. The scenarios may include a wide range of options, from "privatising" and transforming into commercial banks, to being fully melted back into the budget and administration.

Other CEE environmental funds as well as almost all NIS environmental funds have so far not succeeded in being effective tools of environmental policy nor efficient, transparent and accountable instruments of public finance. The great challenge facing those funds that stay alive will be to improve their performance in terms of efficiency and cost-effectiveness. A great deal of improvement is needed in the area of transparency, accountability, and non-intrusiveness in the private sector.

So far, lessons learned from earmarking for the environment in transition economies are not conclusive. But, evidently, earmarking itself has not protected the decline of public environmental expenditure. Environmental ministers are under pressure from their government colleagues and international financial institutions to reconsider if it is worth paying the social cost of earmarking in order to maintain this instrument of environmental policy which has brought so little value-added thus far.

The future of the earmarked funds is best considered in the wider context of environmental and public finance. Subsidies always distort markets and increase public sector deficits. Therefore, the need for environmental subsidies is to be carefully reconsidered in light of the generic "no-subsidy" principle that guides environmental policies in developed OECD countries. A deeper understanding of the scale and the nature of that need may help to target subsidies better so that the public sector funds can bring a genuine value-added where and when it is really necessary, without obstructing the process of transition to an efficient market economy.

Public environmental expenditure systems in transition economies need several improvements. Adjustments towards the St. Petersburg Guidelines (OECD, 1995a) would be an important first step. Several efforts to strengthen institutions, including ministries and environmental funds, have been, and are still being, undertaken. In this paper we propose a more comprehensive package of good practices in the management system of domestic, public environmental expenditure. They are applicable to systems that may or may not include earmarked environmental funds or any other institutional arrangements, examples of which are listed in section B. Implementing these guidelines could provide for a more complete integration of environmental expenditure management with sound public finance in transition economies.

Institutional Options for Special Public Expenditure Management

Different examples of special institutional arrangements for public expenditure management may include:

- Direct purchase of goods and services by regular staff in government departments;
- A project implementation unit established within government departments to implement specific government expenditure programme included in the budget;
- An autonomous/decentralized government agency

Table 3. Weaknesses of Earmarking and Minimum Mitigation Measures

Arguments against Earmarking	*Minimum Mitigation Measures*
Undermines allocation efficiency	Transparent prioritization of environmental programmes based on objective rules, no internal earmarking
Spill-overs to other sectors leading to budget fragmentation and disability to manage the economy	Only for unique environmental programmes (externalities, public goods, high social cost, irreversible impacts)
Segments some public expenditure outside the discipline of the budget and the jurisdiction of the legislature	Strict rules of expenditure control, accountability, transparency
Uncertainty of estimates of public sector expenditures, macroeconomic programming difficult	Transparency and accrual accounting system, medium-term financial forecasts including contingent and implicit liabilities
Breeds vested interests, increases the risk of corruption and waste	Strict expenditure control, accountability, transparency, auditing
Once created difficult to phase out	Binding termination dates, sunset clauses

financed from the budget and created to separate the delivery of services or administrative tasks from policy formulation;

- A special purpose fiscal unit granted independent but restricted taxing powers (for example, a river basin water agency or forest agency may be organized along these lines);
- A public utility with authority to collect user charges and responsibility to develop, maintain and operate collective infrastructure (for example, municipal water, solid waste or district heating company);
- A budgetary fund with its own management structure and autonomous earmarked revenue source within the budget. Such a fund may be established within the government at the sector or region level, and sometimes is co-financed by transfers from the general budget. Some environmental protection funds in CEE and NIS countries belong to this category. Other examples include road funds, disability trust funds or social security funds;
- A budgetary fund managed outside of the government, with its own autonomous earmarked revenue source. Such a fund may have independent legal status, although its revenue and expenditure plans are approved annually in the budget law. Its managerial autonomy versus government varies from country to country, ranging from a specialized team within the government department to an autonomous institution. Several environmental protection funds in CEE and NIS countries provide such an example;
- An extra-budgetary fund managed outside of the government with its own, autonomous earmarked revenue source. Such a fund always has independent legal status and its revenue and expenditure programmes do not require annual approvals in the budget laws although its budget may be added to the general budget as an annex. Its control by government versus managerial autonomy may also vary from country to country. Most autonomous environmental funds in CEE countries (for example, the Polish funds) belong to this category;
- A special-purpose public fund (revolving or not) owned by the government, but established outside of government departments and capitalized by discrete budgetary transfers (for example, the Slovenian Environmental Development Fund);
- An intermediary for the government (grant or debt) expenditure programme. Under this scheme, the intermediary bears a contractual obligation to disburse government resources on terms and conditions specified in the agreement with the government. Such expenditure programmes are usually funded by discrete budgetary transfers, but can also be contracted by special purpose fiscal units, autonomous agencies or autonomous funds. Many institutions may act as intermediaries. Government-owned entities (banks, funds or agencies) may be contracted to disburse grants or soft loans. Private sector entities (banks, leasing companies or investment funds) may also be contracted to provide specific services related to the implementation of government expenditure programmes. The range of services provided by the private sector may be very wide, extending from selected elements of project appraisal through full financial intermediation for loan financing (with or without co-financing) to concession for project implementation and operation. The contract may also provide

for the interest subsidies paid by the government to cover part of the cost of the loans extended by a commercial bank to targeted beneficiaries and/or for specific types of projects;
- Government owned public funds established to manage expenditure programmes co-financed from external loans or grants. Such funds usually receive matching financing from the general budget or from a specific domestic revenue source. A significant degree of managerial autonomy and insulation from politics is usually required by external financiers, and;
- Counterpart funds generated by sales of commodity aid need to be managed under specific procedures, taking into account the requirements of the donors.

Good Practices of Public Environmental Expenditure Management

All existing and newly established environmental expenditure institutional schemes, particularly extra-budgetary environmental funds or autonomous environmental funds, need to pass the test of good practices of public expenditure management. These good practices are necessary, but not sufficient, conditions to be compatible with sound public finance. Passing each of these tests, however, should be considered as a prerequisite in all earmarking arrangements, autonomous funds, special public agencies or expenditure procedures. Without them such arrangements will inevitably turn into financial and environmental failures. Misuse of public money will be very likely.

Public environmental expenditure institutions as Instruments of environmental policy

- Institutions managing public environmental expenditure should have clear programmes and a set of rules regulating investment decisions. Programmes should have "SMARTT" objectives (specific, measurable, agreed, realistic, time bounded, tough). These programmes should be an integral part of wider environmental policy goals that need to be established through a political process led by the Ministry of the Environment. Environmental expenditure schemes should be effective in achieving their goals;
- Environmental expenditure measures should not be excessively driven by equity considerations if it undermines their environmental effectiveness. For example, a targeted lump-sum compensation to those most affected by environmental policies should replace lowering or offsetting charges for pollution or for the use of environmental infrastructure;
- Environmental expenditure institutions, procedures and criteria should be relatively stable and consistent. Rules should not change erratically over time, and;
- No public environmental expenditure programme should be launched without solid analysis of whether it is necessary to achieve given environmental policy goals. If these goals are achievable with administrative or economic instruments, or with private expenditure, then public resources should be saved.

Public environmental expenditure institutions as instruments of public finance

- Institutions managing public environmental expenditures should embody clear transparency and accountability systems according to acknowledged international standards even if such systems are missing in the entire fiscal system;
- Public financial resources managed by environmental agencies should always be treated as public resources in the meaning of the laws of public finance, laws on public procurement and state aid as an important precaution against corruption and fraud;
- Public environmental expenditure programmes should not distort competition in the financial market nor obstruct the development of mature private financial markets (for example, the banking sector). Environmental expenditure institutions should never compete with commercial banks and crowd them out of the environmental sector;
- Environmental expenditure programmes should not be regressive, nor should they cause inequitable income redistribution;
- The number of extra-budgetary financial institutions should be kept to a necessary minimum
- Extra-budgetary institutions should not be legally allowed to assume contingent and implicit liabilities without prior permission of the fiscal authorities;
- No deficit of the extra-budgetary environmental expenditure system should be allowed without explicit prior approval issued by fiscal authorities;
- A transparent system of prioritization of environmental programmes based on clear rules and objective criteria should be applied. Internal earmarking should be avoided as it infringes on efficiency;
- Earmarking should be limited to those environmental programmes where payers of taxes/charges are also beneficiaries of programme goals;
- Strict rules of expenditure control, accountability and transparency with regular internal and independent external financial and performance audits should be enforced;
- Strict financial transparency and an accrual accounting system (based on international standards) should be introduced and approved by the finance authorities;

- Explicit liabilities and contingent liabilities should be disclosed in financial statements, and statements on debt and contingent liabilities of all environmental funds should be presented along with the budget of the ministry of environment to the ministry of finance. Medium-term financial forecasts, including contingent and implicit liabilities, should be regularly conducted and disclosed;
- Regular ex-post reporting, according to a standard expenditure classification system, should be regularly conducted and disclosed;
- Sunset or periodic review clauses for earmarking should be mandatory and need to be specified in legal acts, and;
- An estimate of the revenue and the corresponding expenditures of all extra-budgetary funds and government controlled entities should be provided in the budget, at least as an annex.

Public environmental expenditure institutions as fund managers

- Institutions managing public environmental expenditure should have a sufficient degree of managerial autonomy over the selection of specific projects and beneficiaries, as well as clearly defined lines of responsibility and strong accountability for performance (managers cannot be held accountable unless they have clearly defined responsibilities and clearly specified performance indicators);
- Institutions managing public environmental expenditure should use objective criteria and a competitive framework for the choice of projects and beneficiaries. The criteria and procedures should be specified in the legal documents and/or operational documents and should be binding and accessible to the public;
- Allocation/appraisal criteria for public support to environmental projects should be specified in the legal documents and/or operational documents; they should be binding and accessible to the public;
- Environmental expenditure programmes should ensure cost-effectiveness (minimising costs of achieving environmental policy objectives) in allocation/appraisal criteria through legal requirements and/or incentives for institutions and persons. Cost-effectiveness should be a prominent performance indicator of individuals and organizations with respect to expenditure programmes and individual projects;
- The amount of resources, sophistication of operations and financial instruments should be adjusted to the institutional capacity to manage associated risk. Unless capacity is developed, risky instruments and operations should be prohibited. External entities may be contracted to provide certain services through a competitive process, and
- Environmental expenditure institutions should monitor subsidy equivalents in all financial instruments and should not provide excessive subsidies more than absolutely necessary to make the project financially viable given prevailing market conditions.■

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REVERSING THE DECLINE OF ODA: HOW EFFECTIVE IS THE CURRENT POLICY AGENDA?

Kazuo Takahashi*

EXECUTIVE SUMMARY

The world community has been confused by the contrast between, on the one hand, a number of problems that have been identified by a series of United Nations conferences at the summit or ministerial levels in the 1990s and, on the other hand, the declining trend of official development assistance (ODA) which has been the traditional means to support the international community to solve these problems. It is important for the global community to reflect on the reasons and the basis of ODA and to analyze them historically. It should then become apparent that the basis of ODA has changed fundamentally. It is for the international community to attempt to bring ODA and other financial instruments to bear upon the problems and issues identified globally in the light of the new reality.

The essence of the new reality is that the basic forces that organize the world community have changed from the cold war to two "tracks" of globalization. Market-based globalization is quick to impact on the world community and is, thus, the fast track, whereas political economy globalization is taking a longer time to form an alliance and to make itself felt in international society and is, thus, the slow track. For the time being, the fast track globalization is providing the basic structure to the world community, including the developing world, which has been divided into three categories, and at the same time it is pushing the global community to recognize the importance of global public goods.

The task of the international community in promoting sustainable development is to develop a proper strategy in this context. It is important to address the question of declining ODA as an integral part of this strategy. The essence of the strategy should be to approach the subject in phases. The basic objective of the first phase is to arrest the declining trend of ODA. It is important to articulate a package of policy instruments, each of which should be a realistic one. However, put together, they should impact critically on the world community where the atmosphere of international cooperation is expected to be strengthened. The first phase should start now and continue for several years.

The second phase should be to address the ODA question in a more dramatic manner, including the introduction of international taxation on a selective basis. While the start of the second phase may come around 2010, the world community should start conceptualizing its work now. Negotiations for this phase might have to begin immediately after Rio plus 10.

* Kazuo Takahashi is Director, International Development Research Institute, Foundation for Advanced Studies on International Development, Japan.

INTRODUCTION

WHILE aid fatigue began to be mentioned in the late 1950s, aid activities have been an important feature in world affairs in the past several decades. The recent decline in ODA, while not a significant one, provides the world community with a stronger challenge than previous episodes of ODA decline such as in the late 1960s. Relating mainly to the end of the cold war and to the predominance of market-based globalization forces, both of which require considerable readjustments in political and economic arrangements in practically all countries, including donor countries, reversing the recent declining trend of ODA should be attempted mainly from a politico-economic perspective. Putting ODA into the new reality of the political economy of the world community should be the priority concern.

The conceptual work has to be firmly based on the reality characterized by rapid changes domestically as well as world-wide. Individual countries are witnessing increasing nationalism against the background of powerful forces of market-based globalization. It is not useful to introduce super-national approaches such as international taxes in whatever form in this situation. These may be easily ignored, or worse still, may invite backlash. It is imperative for the conceptualization of a new approach to aid for sustainable development to start with the fact that all the donors now consider aid as an integral part of their foreign policy.

One useful approach in this situation is to conceptualize the process of reversing the declining trend of ODA in phases. The major objective of the first phase is to arrest the declining trend and to begin to reverse it. The second phase is to begin to take somewhat more bold measures. The degree of boldness may depend on the politico-economic environment at the end of the first phase. By taking a phased approach, the world community may be able to avail itself of more realistic and powerful options than to try and reverse the declining trend of ODA through a shock therapy.

RISE AND FALL OF POLITICAL MANDATES FOR DEVELOPMENT FINANCE

External development finance has a relatively short history, originating in the late 1940s. It has responded mainly to the political requirements of the leading powers of the time, rather than the needs of the people. International relations and the reason of the state of the states have been the major motivating forces, whereas economics and ethics have contributed to the fine-tuning of its operations. Similarly, in the current situation, consideration of ways to strengthen external finance for sustainable development should centre around the present world politico-economic reality. In order to effectively approach this question, it is useful to briefly review the history of political mandates for external development finance and to observe their rise and fall in the world community.

The Aftermath of World War II

The triumvirate of the International Monetary Fund (IMF), the International Bank for Reconstruction and Development (IBRD), and the still-born International Trade Organization were basically conceptualized to avoid the recurrence of the Great Depression of 1929. The heavy war-time debt of Great Britain was, however, the immediate concern of Lord Keynes, negotiating for the United Kingdom, and Dr. White, Treasury Secretary, negotiating for the United States. These were a set of activities that took place along the lines of concern of treasury departments.

Another set of activities took place along the lines of foreign ministries. Significant changes in the drafts of the United Nations Charter from Dunbarton Oaks (1944) to San Francisco (1945) were the reflection of the shift of views of major Allied Powers with regard to the causes of wars. The Dunbarton Oaks draft dealt mainly with the peaceful resolution of conflicts and the enforcement of peace, generally matters that would be dealt with by the Security Council. The major development in the Charter drafting since then was to strengthen social and economic clauses that came to be incorporated in the San Francisco draft. This change was due mainly to the perception, gradually shared by the negotiators as the debates progressed, that a major root-cause of war was poverty. International efforts to alleviate poverty had come to be considered as an important means to strengthen peace. These two sets of institutions having been established on the part of the leading power, the United States, the reconstruction of Europe (the Marshall Plan), followed by efforts to reach out to the newly born poor countries in the form of Point Four (technical assistance in the inaugural address of President Truman in 1949), were presented as civilizational missions. The objectives of the Bretton Woods institutions, of the United Nations and the concerns of the United States began to get the international community involved in the efforts to alleviate poverty in the under-developed world in the late 1940s. The enormity of the challenges was not well understood by the leaders of these institutions.

Decolonization

The operations of the World Bank in the former British colonies began to fill the vacuum created by the withdrawal of the United Kingdom. With over 75 per cent of British investment in its former colonies from 1870 to 1938 being related to construction of ports and railroads and to energy, the initial opera-

tions of the World Bank were largely concentrated in these areas. The term economic infrastructure was given to them, and they were justified as proper areas for external public finance.

While the United Kingdom initially refused to aid newly independent former colonies financially, in 1950 it created the Colombo Plan mainly for the transfer of technology. One major reason for British refusal to aid former colonies was that it had invested sufficiently in them before independence. However, it became clear that most of the newly independent countries were not well equipped to be full-fledged nation-states in the world community. Being financially in a difficult situation, the United Kingdom resorted to technical co-operation to fill in this gap.

The independence of French colonies was achieved later, culminating in the independence of 17 African countries in 1960. However, practically all of these countries required continued aid from France for their proper function as sovereign states. France became a major donor country in the 1960s.

The Cold War

It was the cold war that critically motivated the United States and the Soviet Union to develop aid programmes to underdeveloped countries in the 1950s and 1960s. The increase of the Soviet aid was substantial in the 1950s, extending mainly to neighbouring countries to strengthen communist parties in these countries. The aid programs of the United States competed with these efforts of the Soviet Union, and also expanded significantly through the 1950s. The level of aid activities of the Soviet Union was almost one third of that of the United States in the mid-1950s.

North-South relations

The aid activities of the industrialized countries were motivated mainly by these three factors, namely the end of World War II, decolonization and the cold war, in addition to altruistic motives. Developing countries attempted to maximize gains from them by resorting to a number of policy measures, such as playing the West against the East in the cold war. These interactions were strengthened in the form of North-South relations in the course of the 1960s, mainly by the creation of United Nations Conference on Trade and Development (UNCTAD) in 1964. The reality of the North-South relations were West versus South plus East.

The pressures of North-South negotiations on the Western donors, however, were not felt strongly in the 1960s. In fact, ODA from Development Assistance Committee (DAC) countries began to decline from 1967, a trend which prompted the then President of the World Bank (George Woods) to form the Pearson Commission. This decline was mainly due to the disappearance of the factor related to the end of World War II and to the weakening of the immediate political requirements of decolonization. Since then, the major factor that constituted the political basis for ODA became the cold war. With the start of détente at the beginning of the 1970s, the Soviet Union had to develop new approaches to fight against the West. From the viewpoint of the Soviet Union, it was difficult to compete with the West in such areas as finance and science and technology. However, in the area of commodities where the Soviet Union was the larger producer, including oil, it thought that competition was possible. It was the cold war that had to be relied on from the viewpoint of developing countries. Against this background, starting with the first oil shock of 1973, developing countries wielded commodity powers in the 1970s and applied pressure on Western countries through the North-South negotiations. The maximum impact of the North-South dialogue on the West was indeed felt in the 1970s. Instead of yielding on a New International Economic Order (NIEO), the West put emphasis on the Basic Human Needs (BHN) approach in its aid activities. The more demand for NIEO through North-South negotiations, the more BHN — this was the formula of the 1970s.

Structural adjustment

The NIEO and the BHN approaches had a common feature, which was to avoid policy adjustment at the macro level in developing countries. The dislocation of a large number of developing economies due mainly to two oil shocks brought about debt crises in these countries in the 1980s. By this time, political motivations of the donors began to be weakened. While the use of aid as a leverage for liberalization of individual developing countries was a new discovery on the part of donors, it was also felt by donors that the amount of development finance for this purpose did not have to be increased. The main immediate objectives of aid were to alleviate debt burdens and to promote structural adjustment, factors that were the negative impacts from development efforts of the previous decades. Forward-looking aid activities to promote economic development became a distinctly secondary consideration. Those developing countries that were developing rapidly, such as in Southeast Asia from the mid-1980s, should be, the donor community suggested, left to themselves (expect Japan, which continued its aid to most of these countries), meaning that they should be graduated from the aid recipient status.

End of the Cold War and a search for a new basis for development co-operation

Development co-operation lost its major political mandate with the disappearance of the cold war in 1989. Administrative inertia and leverage for liberalization kept aid programs going. Aid agencies began

to look for their new political basis mainly at the DAC of the Organisation for Economic Co-operation and Development (OECD) in 1990 in the form of elaboration of the tasks of development co-operation for the 1990s that had been agreed in 1989. However, the overall volume of ODA started to decline in 1991. The search for a new basis for development co-operation pushed such concepts as ownership, participatory development and partnership, which had been discussed for some time in the academic circles, to the forefront on the political agenda. Combining these elements and selected targets from the various exercises in the United Nations context together, the New Strategy of DAC for the 21st century was adopted in 1996. However, these efforts failed to arrest the broad trend of decline of ODA, while there were certainly variations among donors, some of which, in fact, have been increasing ODA.

Globalization and development co-operation

The aid community began to find the new basis of ODA in the course of 1996-1997 — globalization. The major force that restructures the world community was beginning to be identified as the complex and powerful forces of market-based globalization in the mid-1990s. The G-7 Summit placed it at the centre of the agenda at its meeting in Lyon in 1996. Globalization has since then acquired political legitimacy. Other events, such as United Nations conferences in the 1990s, have come to be viewed as an integral part of the globalization process.

The Asian economic crisis that began in July 1997 was perceived to be a negative result of market-based globalization. Japan's response to it was to provide $80 billion to the seriously affected Asian countries, while a large part of it was in the form and conditions of Other Official Flows (OOF).

The decline in ODA from Japan, which took place for the first time from 1996 to 1997, was arrested in 1998. While its future prospects are uncertain, the downward trend of Japan's ODA will not continue. It appears that the downward trend of ODA in major donor countries has largely been arrested. This is due to the gradually felt perception on the part of the donor countries that ODA might be a useful instrument to manage the now dominant forces of market-based globalization that is prevailing over the world community.

GLOBALIZATION AND THE SEARCH FOR A NEW POLITICAL MANDATE FOR DEVELOPMENT FINANCE

It is now increasingly clear that globalization forces are replacing the cold war as the predominant factor that dictates the basic structure of the world community. The relationship between the major powers cannot be described as adversarial any more, not because they have suddenly become friendly with each other, but because they cannot afford to have a major enemy at a time when they have to compete with each other vigorously. This competition has been brought about by the market forces that have been strengthened by financial market liberalization, development of financial instruments, trade liberalization and the information technology (IT) revolution. These forces go naturally beyond the relationship among major powers and now cover the entire world community. Just like at the time of the bipolar world, when development co-operation was based mainly on the logic of the cold war, it could find its new political mandate in relation to globalization in the coming period. Therefore, it is essential that the basic functions of globalization in the developing world are well understood and that a search for a new basis for development co-operation should be pursued in relation to these functions.

Two Tracks of Globalization

It is important to notice that the complex forces of globalization are gradually building two sets of alliances and structures. One has basically started as a process that promotes market forces in the world community. It is promoted mainly by world enterprises, the United States Government and such international organizations as the IMF, World Trade Organization (WTO) and the OECD. Other OECD countries selectively support this movement individually or through these organizations. This process can be described as market-based globalization, or a fast track globalization due to the rapidity of its impacts world-wide.

Another process of globalization is now gradually emerging and addresses itself mainly to the major problems that have been brought about or aggravated by the market-based globalization. These problems include poverty, environmental destruction and weakening of indigenous cultures. This globalization is promoted by civil society such as non-governmental organizations (NGOs), many United Nations agencies, the World Bank, bilateral aid agencies and many governments of the developing world. With the main objective of strengthening the public interventions either through governments, international organizations or civil society, this process of globalization could be called political economy globalization, or slow track globalization due to the time-consuming character of the alliance building among these major actors and of the impacts being felt in the developing countries.

The participation of NGOs became increasingly important in some United Nations conferences during the 1970s and the 1980s. The Rio Summit on Environment and Development was particularly instrumental in bringing NGOs into the mainstream at the

global level as well as at a national level in a number of countries. One major outcome of the Rio Summit was the establishment of the Earth Council in 1993, networking some 20,000 NGOs globally at the initial period, and now expanding the membership more widely. One after another, successive United Nations conferences have had similar impacts on closer collaborations among United Nations agencies, developing country governments and NGOs. The World Bank, under the leadership of Mr. Wolfensohn, has gradually been integrated into this broad movement and now considers NGOs and United Nations agencies as its important partners.

In the meantime, the bilateral donors adopted at DAC the New Strategy of Development Co-operation in 1996, incorporating some of the work done by these United Nations agencies, in particular UNICEF. The G7 Summit has also endorsed this strategy, and bilateral donors put priority on social development and poorer developing countries themselves, in close co-operation with NGOs, United Nations agencies and the World Bank. The alliance of these actors is gradually becoming apparent and the slow track globalization is beginning to make itself felt in the global efforts for sustainable development. It is, therefore, essential to recognize the fact that two processes of globalization are at work, rather than one. The interactions between the two processes have already produced a range of new political regimes in Europe in the name of "a third way". The interactions between the two processes of globalization have just begun in the world community and this drama will become the dominant feature in the sustainable development discussions involving all the stakeholders.

Three Categories of Developing Countries

In the meantime, the impact of the fast track is indeed much faster than the other. The basic structure of the world community is largely influenced by market-based globalization, which is wielding decisive influences on developing countries. The term globalization is often used to mean this version of globalization, namely, market-based globalization only. Market globalism, in fact, has complex impacts on individual economies, and yet consists basically of two orientations that are opposite to each other. There are, on the one hand, powerful impacts on developing economies in the form of integration into the world economy mainly through private sector transactions, for example, trade, investment and finance, all of which are enhanced by the information revolution. The integrating forces that have been at work for the past two centuries have been strengthened considerably and the pace of integration has quickened for the past ten years.

On the other hand, market-based globalization has proved to be influential in marginalizing various segments of people and a number of countries in near totality. Domestic savings of poorer countries can be invested in industrialized economies for higher and surer returns through various channels. Graduates of colleges and universities can be employed by Northern institutions after considerable investment by poorer country governments in them. The traditional issue of brain drain is reaching a higher level as a problem. The downturn secular trend of commodity prices may be accelerated by higher efficiency of production that is being brought about by heightened competition globally. Thus, the marginalizing impacts of market-based globalization on poorer developing countries and poorer segments of people, mainly in developing countries, are already tangible in such forms as reverse flow of finance, brain exodus and commodity price declines.

At the same time, the marginalizing impacts can take a different form, which is to leave a number of poorer countries behind. Enhanced dynamism that has been promoted by market globalism concentrates private sector activities, such as trade, investment and finance, on efficient economies and in effect excludes inefficient and poor economies. Marginalization through neglect is in fact a powerful factor that is at work in the current world economy.

Therefore, marginalization impacts of market globalism, either through its concrete functions or by neglect, are important factors that influence the structure of the developing world.

The net impacts of the integrating forces and of marginalization that are associated with market globalism are to divide the developing world basically into three categories of countries: While some ambiguity is bound to exist, these consist of rapidly integrating economies, increasingly marginalized countries, and those countries where both forces of integration into the world economy and of marginalization from it are at work significantly at the same time.

Integrating economies

Private flows into developing economies virtually dried out in the early 1980s but resumed in the mid-1980s led by Japan's direct investment in Southeast Asian countries. By 1996, private flows were six times the volume of ODA (DAC, 1999, A1-2). These were concentrated in higher income developing countries (DAC, 1999, 48). The increase in the ratio of trade in global production continued in the 1990s, with the conclusion of the Uruguay Round in 1993 strengthening the liberalization process in trade world-wide.

Currency exchange and short-term financial transactions became dominant features in the international financial markets, which began to involve higher-income developing countries in the 1990s. In January 1998, the daily transactions of the global currency exchange were $1.2 trillion on average,

equivalent to 20 per cent of world annual exports (Takahashi, 1998, 5). Therefore, currency exchange has become a market of its own. Short-term debt flows (defined as debt with original maturity of one year or less) to developing countries jumped from $19.5 in 1990 to $61.1 in 1995, while these were mostly to East Asian and Latin American countries (World Bank, 1999, 31-32).

Many of the Southeast Asian and Latin American economies, as well as such transition economies as Russia and Central European countries, were heavily influenced by all of these factors. The economic transactions on all of these fronts were dramatically quickened by the information technology revolution, in particular the international financial markets. The net impacts of these dramatically increased transactions in the private sector were to integrate these countries into the liberal global economic system. In the course of the first half of the 1990s, the positive aspects of this integration became a dominant feature, and optimism about market globalism was widely shared.

Integration of these economies, mainly through transactions in the private sector, can bring about two opposite consequences. On the one hand, rapid economic growth due to increased investment, incorporation of higher technology and enhanced competition can be its major outcome. While these were particularly predominant features in Southeast Asian economies in the first half of the 1990s, they could also be observed in some Latin American countries and Central European countries. The graduation of the aid recipient status for these countries was seriously discussed at DAC, resulting in the two tier structure of aid recipients. The high growth, however, was only one side of the coin.

The other side of integration into the world economy through enhanced transactions in the private sector was the collapse of these economies. Knowledge and information, which have universalistic qualities, are the important instruments of the management of market globalization. When faced with uncertainty with regard to the details of the socio-economic and political situations of these countries, the investors in these economies can quickly withdraw their investments in order to protect themselves at a small signal of adverse development in an economic, social or political sphere. Once some investors begin withdrawing their investment, others, who are equally uncertain about the economic, social or political developments in these countries, may most probably do the same. The chain reactions will easily undermine even the fundamentals of these economies, and may eventually lead them to collapse. The herd syndrome of short-term capital investment is as difficult to avoid as over-shooting in currency exchange rates. This was exactly what happened in East Asia from July to November 1997.

Marginalization of poorer countries

Marginalizing forces are powerfully at work in many African countries, some Central Asian countries and a few other Asian and Latin American economies. While there are a few positive market globalization phenomena that can be observed — between 6.2 to 7.4 per cent of FDI in developing countries was to low income countries during the period 1992 to 1998 (World Bank, 1999, 51) — these countries can be marginalized from the global economy in their entirety. Marginalization brings about low or even negative growth. This consequence has a highly dangerous implication when considered in the context of rapid urbanization which is proceeding at 5 per cent in Africa. The urban population is up-rooted from rural areas where different ethnic groups and tribes have a long tradition of living with each other without major conflicts. In cities, ethnic and tribal groups tend to live in separate neighbouring communities for purposes of socio-economic security. When economic downturns due to marginalization occur, these groups increase competition to obtain their share from a smaller economic "pie", leading occasionally to violent conflicts. The conflicts in the city can spread to their villages and eventually engulf a large part of the country. Where tribal or ethnic communities transcend national borders, this situation can be spread into a regional conflict.

At the time of colonialism, these were the countries that were exploited most by colonial masters. During the cold war, proxy wars were fought by some of them on behalf of the United States or the Soviet Union. With the onset of market globalism, these are again the countries that can be drawn into armed conflicts due to the marginalization impacts of this process.

Integration and marginalization at work simultaneously

In most major developing countries, integration forces into the world economy and marginalization impacts from market globalism are at work simultaneously. The modern sector of these countries can be attractive for investors from abroad, with a consequent expansion in external trade. The growth of this sector can be significantly higher than the rest of the economy. These countries include China, India, Pakistan, and Egypt, while Brazil is a borderline case between this category and the integrating group. Indonesia has slipped down from the integration category into this group. The sheer size of these countries makes it extremely difficult for the modern sector to raise the income levels of the entire economy through trickle down effects. The net impacts of market globalism on the rest of the country are to marginalize it even more than they have been before.

Consequently, the increasing gap between the rich

and the poor becomes the major issue in these countries. With wider access to the mass-media, this increasing gap becomes a highly charged political issue. In democracies such as in India, the increasing income gap combined with the traditional social structure, such as caste systems, throws the elections into a boiling pot with consequent instability in the political leadership. In developmental authoritarian countries, this gap brings about a sense of uncertainty and complaints in a variety of forms. Social instability becomes a predominant feature in these economies.

The social basis of political leaders is inevitably weakened. The traditional approach of political leaders to this situation is to resort to various measures to strengthen nationalism. In the cases of India and Pakistan, nuclear explosions and ballistic missiles tests brought about tensions with each other, orienting the attention of the people to neighbouring countries in 1998. Mismanagement of this process can result in political confusions, including a military coup d'état, such as in Pakistan in 1999. In the case of China, the huge celebration of the 50th anniversary of the establishment of the People's Republic of China, with considerable elements of military display, enhanced nationalism. It is clear that one of the most important factors that will determine the quality of the world society in the first decades of the 21st century is the social stability of this category of developing countries.

Global Public Goods

Another major implication of the shift in major motivating forces that provide the basic structure to the world community from the cold war to globalization is the emergence of global public goods on a high order on the world political agenda. During the cold war, it was extremely difficult to conceptualize global public goods without any political implication. For example, knowledge, which is now considered widely to be a global public good, may have easily been interpreted as a political weapon favouring either the West or the East. However, the broad positive reactions to *Global Public Goods* (Kaul, Grunberg and Stern, 1999) suggest that the very basis of the international community has shifted to the broader and more tolerant perspective that is brought about by globalization forces. This book examines a number of areas such as the environment, cultural heritage and peace as potential areas where the concept of global public goods could be applied. All of the ten areas that were explored in this book have been given affirmative answers by the authors. Indeed, there could be more areas where the concept of global public goods could usefully be applied for further international efforts.

The concept of global public goods as related to globalization provides a potentially fertile ground for future efforts. The elaboration of this concept should go beyond the question of subject areas that should be included, and should deal in particular with institutional issues. Starting with the classic examination of inter-governmental organizational issues, new and important factors such as second track activities, global networks on a number of specific issues and informal personal linkages, as well as the corresponding domestic structures of government, civil society and others, need to be looked into. It should be essential to compare *Our Global Neighbourhood (*Commission on Global Governance, 1995) with *Global Public Goods* and elaborate upon institutional questions based on the concept of global public goods.

Policy Measures

In considering measures to be taken towards the three categories of developing countries and global public goods, the most important starting point is to strengthen the slow track globalization. Centring around the processes and the outcomes of the major United Nations Conferences of the 1990s, the co-operation among civil society, United Nations agencies, the World Bank, bilateral aid agencies and governments of developing countries should be enhanced. The major components of the ideas and objectives for this purpose are set out in the declarations and action plans that were adopted by these conferences. While some of them were incorporated into the DAC Strategy for the 21st century which was adopted in 1996, the key factors are much broader. While taking them into consideration, it is important to relate them to three categories of developing countries and to the concept of global public goods.

Policy measures towards the three categories of developing countries

(a) Integration countries

Policy measures towards these countries have to be considered in two separate cases, one of rapid growth phase and the other of a collapse of the economy. Development co-operation in these different cases requires different approaches.

Rapid growth. Major problems that are brought about by rapid growth as a consequence of integration into the world economy include environmental destruction, an expanding informal sector in the urban areas and weakened rural areas. While the government is aware of these problems, the collective mind-set of the leadership tends to be a single-minded pursuit of economic growth at the expense of these problems. It has also been discovered in the course of the recent Asian economic crisis that institution building in the country as a whole should be pursued in the rapid growth phase.

Collapse of the economy. In the face of the collapse of the economy, two sets of measures need to be pur-

sued immediately. Firstly, a large amount of infusion of liquidity is an essential requirement. It may not have to be ODA, but it needs to be official finance due to the overwhelming requirement of stability. In the case of the recent economic crisis in East Asia, Japan provided $80 billion in official finance (over half of emergency finance that came from all over the world) with $5 billion in ODA and $75 billion in OOF such as export credits. This huge sum of official finance from Japan has contributed critically to the renewed confidence of the international financial community in these countries, except for Indonesia, which has until recently been beset with political problems. At the current level of confidence in international institutions on the part of major countries, it is virtually impossible to entrust a significantly larger amount of funds to them.

An alternative approach is to strengthen national institutions that are capable of delivering a large sum of liquidity. The establishment of the Japan Bank for International Co-operation (JBIC), which was created as a result of the merger between the Export-Import Bank of Japan and the Overseas Economic Co-operation Fund of Japan, is such an example. With an annual turnover of over $40 billion dollars combining ODA and OOF that have separate accounts, this new bank is expected to play a crisis management role in close co-operation with other institutions such as the IMF and the World Bank (Takahashi, 1999).

Secondly, environment protection activities and social sectors such as health and nutrition, primary education and food security need to be supported upon the collapse of the economy. It takes considerable investment and effort for a long time to build up systems for these sectors. And yet they are usually very vulnerable. It is essential for the donor community to support the efforts of the government, in particular officials in provincial authorities, in their struggle to maintain these systems that can easily become victims of the collapse of the economy.

While infusion of a large sum of liquidity and the support of environmental and social sectors require immediate action, it has also been recognized that institution building in such areas as financial and monetary systems and the general legal framework is also an important task.

(b) Marginalized countries

The first task is to re-conceptualize development strategies of many of these countries. The major ecological constraint for over 50 countries is lack of water. Therefore, the re-conceptualization for these countries has to be centred on this factor. Productivity in agriculture or in manufacturing has to be measured against the unit of water used. Public investment as well as measured privatization of public utilities has to have a clear priority on water whose multiple dimensions, namely, volume, quality and distribution, need to be addressed. It should be useful to organize a high level panel of experts to pursue this re-conceptualizing exercise at the world level with participation of experts from these countries.

Secondly, the targeted approach to poverty has to be a high priority. While it is always useful to combine it with a broad-based growth strategy, it may not always be possible to achieve a sufficient growth of, for example, five to six percentage points. Even in conditions with growth of one to two percentage points, poverty alleviation should have a high priority in these countries. The combination of rural development, including micro-financing, commodity based value added activities, and labour intensive industries need to be pursued as best suited to each country. However, in order to avoid any stigmatization from protective measures of well-defined groups, generic policy measures should be adopted as much as possible.

Thirdly, conflict prevention is an important consideration in many of these countries. The downturn of the economies due to marginalization from the world economy, often combined with rich natural resources, can trigger armed conflicts. These tend to take the form of tribal or ethnic conflicts, which are usually related to power struggles to control important natural resources. Since armed conflict is the worst enemy of the welfare of the people, the natural environment and development in general, it is of crucial importance to incorporate conflict prevention measures in aid for sustainable development for these countries. Inter-communal confidence building measures, fostering a culture of non-violence and stable control over natural resources are all important components of a conflict prevention package.

(c) Integration-marginalization countries

From the viewpoint of the stability of the world community at large, the prospects of the major developing countries, where integration forces and marginalization impacts of globalization are at work simultaneously, are the critically important factor. These countries have the potential to destabilize the international community as a whole. At the same time, they can be leaders in forging a globalized creative coalition of humanity towards sustainable development. The first major effort that is needed is to enhance measures to bridge the gap between the rich and the poor in these countries. The most important policy measure is to strengthen small- and medium-sized enterprises, in particular in labour intensive industries. One such industry, the textiles industry, has strong implications for the industrialized countries. For these priority activities, it is essential to include environmentally friendly measures and technologies.

The second policy area that requires particular attention is poverty alleviation. In most of these countries, poverty is closely associated with their social structures, whether in the form of castes or mi-

nority groups. Some targeted approaches towards these social groups are already in place. However, it is important to strengthen the policy measures that are friendly to the environment at the time when marginalizing forces are at work. Aid to sustainable development to supplement the efforts of the government both at the national and regional levels should play a critical role.

Thirdly, confidence-building measures between neighbouring countries should have a high priority. Joint projects across borders, such as joint management of international rivers, and even river basins are good examples. Joint protection of pristine tropical forests, such as those that are spread between Vietnam and Laos, is another. Aid to sustainable development for such projects should be a useful component.

Strengthening Global Public Goods

A major new challenge for the slow track globalization is to strengthen global public goods. This task is similar to the requirement of establishing good governance in individual countries. Global public goods provide a good basis upon which sustainable development efforts may be able to bring about favourable results globally. A large part of the efforts to strengthen global public goods, in fact, means institution-building in areas that are recognized to be global public goods. The forms of institution-building include traditional forms such as intergovernmental organizations as well as networks and informal arrangements. It all depends on the specific issue to be dealt with.

For these global efforts, the important task of aid to sustainable development is to strengthen the capacities of developing countries to participate in these efforts on a fair basis. This task has three dimensions, which are all related to the common factor, knowledge, that has become an even more important asset in the globalizing world than ever before. First, since global public goods are related to knowledge intensive activity areas such as the environment, culture and peace, it is essential for developing countries to strengthen the capacities of research institutions in these areas. The World Bank's recent efforts to create and strengthen the Global Development Network for the specific purpose of capacity building in research activities in developing countries are worth supporting from this viewpoint.

There are a number of other similar activities such as the Research and Capacity Building Network for African Development, which was launched in September 1999 as a follow-up to the Second Tokyo Conference on African Development. This research network is unique because it links Japanese and other Asian researchers with African research institutions for African development purposes; it will strengthen existing research networks such as the African Economic Research Consortium and the Council for the Development of Economic and Social Research in Africa and emerging research networks centred in Zimbabwe and the University of London. It has its own steering committee consisting of African and Asian, including Japanese, researchers; the global panel of experts and the secretariat is located in the International Development Research Institute of the Foundation for Advanced Studies on International Development in Tokyo, Japan.

The second dimension is the negotiation to establish and strengthen global public goods. It is essential for developing countries to build capacities to negotiate effectively so as to reflect their concerns in the formation of global public goods. While existing institutions such as those located in Geneva should continue their works, it would be useful to strengthen training institutions for each of the major issue areas. One area which is weak is environmental negotiation training.

The third dimension is management. Traditionally, cities such as Washington D.C., New York, Geneva, Paris or Vienna are centres for managing international agencies; the brain drain, which is associated with relocating managers to these cities, has been a major concern. However, global public goods are being managed increasingly through electronic networks and new managers may not have to move away from where they are. They could pursue local tasks and global management at the same time. However, for this to be realized, training of a certain number of competent people in the management of global public goods is an important requirement. This is an area of activity where major universities and training facilities in global corporations may usefully cooperate with each other to fill the gap. Development co-operation financing may help with bridging this gap.

EMERGING STRUCTURE OF FINANCING SUSTAINABLE DEVELOPMENT

Thus, globalization forces are bringing about a significantly different world from the time when the cold war prevailed. The reality of development finance has also been changing rapidly. It is important to examine the emerging structure of sustainable development finance against the background of the new global reality where globalization forces shape the global socio-economic structure. It is not useful to continue to look at sustainable development finance activities through the old, and increasingly irrelevant, prism of the cold war. While there are a number of new elements of sustainable development finance that can be discerned, the following six points are significant:

- the shift from the dominance of ODA to private sector centred financial flows;

- the declining trend of ODA;
- the disappearing non-DAC ODA;
- the potential emergence of new donors;
- the increasing importance of Other Official Flows (OOF); and
- new actors and mechanics.

From ODA Dominance to Private Sector Centred Financial Flows

The concept of development aid itself is a relatively new idea in the history of the world community, dating back only to the late 1940s. ODA as defined by the DAC of the OECD has only a three-decade history. In the course of the 1950s and the 1960s, when official aid was rapidly institutionalized, the international financial system did not have an adequate capital basis to finance the increasing needs of the newly independent countries through voluntary and private transactions. Therefore, official aid through the tax money in those countries that could afford to extend it and that had political motivations had to play a major role. The cold war forced competition between the United States and the Soviet Union, which extended aid mainly to neighbouring and strategic countries such as China in the 1950s. Through the 1980s, while there were a few times when private flows played significant roles in development finance, such as in the late 1970s for the recycling of oil money and in the latter half of 1980s when surplus savings of Japan were invested in Southeast Asian countries, the dominant feature of development finance was the importance of ODA.

However, capital market liberalization in an increasing number of countries in the 1980s and the 1990s has brought about a totally different structure in development finance. In 1997, financial flows to developing countries with per capita GNP of $3036 and above (in 1995, Atlas basis), in the form of ODA and OOF disbursement was $10 billion, in comparison to over $120 billion in private flows (OECD, 1998, 48). While there can naturally be fluctuations, the broad historical trend is the increasing importance of private flows to developing countries, in particular to higher income developing countries.

Declining Trend of ODA

The volume of ODA has constantly been an important issue in the international community, in particular in the DAC circle. The donor community began to be organized initially in relation to the question of aid volume. In the late 1950s, the major Western donor, the United States, suffered from significant balance of payment deficits and sought the co-operation of partners of the Western Alliance to share the burden of development aid. The Development Assistance Group (DAG) of the Organization of European Economic Co-operation (OEEC, originally a recipient body of the Marshall Plan), which soon became the Development Assistance Committee of OECD in 1961, was created to pursue burden sharing of development aid. While there have been ups and downs in intensity, aid volume has always been a priority on its agenda. Through various means, including the peer review mechanism, DAC has attempted to increase ODA for these last four decades.

The actual performance of ODA disbursement has largely been characterized by stability. While aid fatigue began to be mentioned already in the 1960s, the secular trend of DAC countries as a whole maintained an upward one through the 1970s (with the exception of the period between 1967-1971, the first episode of a downward trend). The 1980s and the early years of the 1990s were characterized by the maintenance of roughly the same levels of ODA from DAC countries.

The declining trend of ODA from these countries began in 1995, although some of them (such as the United States and Germany) began this trend immediately after the end of the cold war. Once ODA is established on a proper political basis (such as the cold war or globalization), it appears that the factors which are most closely associated with the trends of ODA performance are the inter-linked elements of Gini coefficients and the intentions of political leaders. Increasing gaps between the rich and the poor make it difficult for the government of the donor country to persuade taxpayers to maintain the ODA program. Increasing emphasis on market operations in OECD countries, which has brought about increasing rich-poor gaps in some of these countries, has contributed to a decline in ODA. This applies to such major donors as the United States and Germany, and later to Japan. In those donor countries where the levels of Gini coefficients were maintained in the 1990s, ODA performance has not declined.

It is encouraging to note that there are indications that the Gini coefficients may be improving in an increasing number of DAC countries. In Europe, through the broad wave of the third way governments, social policies are being strengthened. The rich-poor gap in the United States has reversed the trend in the mid-1990s, and is now beginning to be narrowed. In these countries, it can be expected that ODA performance is likely to improve in the coming period.

However, in some other major donor countries such as Germany and Japan, the Gini co-efficient performance may not improve in the near future. Therefore, it may be difficult for these countries to increase ODA in any significant measure.

While it is admittedly too simplistic to rely solely on Gini co-efficient performance to examine ODA trends, it reflects such parameters as government intentions and fiscal realities. Therefore, it can be a useful indicator which may precede ODA performance. Traditionally, there have been other important

factors that have some influence on ODA volume performance. These include balance of payments performance and strategic considerations. In the case of new donors, export opportunities have also played a role in the initial stages, as, for example, in Japan during the 1950s and the 1960s. Therefore, it is important to include all of these factors in addition to the Gini co-efficient to examine ODA performance of individual donor countries. However, the broad indication of ODA levels that is given by the Gini coefficient can perhaps play a more reliable role at a time when strategic considerations have become less important than during the cold war, and DAC members have gone far beyond new donor situations.

Overall, taking into account the encouraging signs of improved Gini coefficients in a number of European countries and the United States, and disquieting indications in such countries as Japan and Germany, the indications are that the net DAC flows of ODA will be maintained in broad terms at the present levels. In other words, the declining trend will stop in the near future, but any significant improvement cannot be expected.

Disappearing Non-DAC Aid

"Eastern" aid

The aid programmes of the Soviet Union and other countries of the "East" grew rapidly in the early 1950s, reaching close to 30 per cent of the level of the United States. These aid programmes also expanded rapidly in the late 1960s when DAC performance declined, in particular from 1967 to 1970. From the late 1960s to the early 1970s, the "Eastern" aid expanded three times, to reach about $3 billion in 1972 (OECD, 1973,153). These two periods coincided with the Korean War and the Vietnam War, where a large part of aid was provided to North Korea and China in the early 1950s, and to North Vietnam from the late 1960s to the early 1970s. Since then, the level of "Eastern" aid has stabilized and their ratio to DAC aid was around 3 per cent through the 1980s. In the 1990s, it disappeared almost completely.

OPEC aid

Aid programs of the OPEC countries expanded rapidly in the 1970s, led by Kuwait and Saudi Arabia. They peaked in 1980 at about 10 per cent of DAC performance, the year of the second oil shock (OECD, 1986, 78). With the broad declining trend of aid from OPEC since then, and with one country after another disappearing from the donor community, the aid programmes of Saudi Arabia and Kuwait are still continuing, but at substantially lower levels than before. Their combined aid in 1997 was just above one per cent of that of DAC countries (OECD, 1999, 86).

The aid performance of OPEC countries has been largely in parallel with the level of real oil prices. Therefore, there is a measure of uncertainty about the prospects of these aid programmes. However, it may be difficult to expect any significant increase in their aid delivery in the coming period.

Emergence of New Donors

While "Eastern" aid disappeared and OPEC aid diminished in the 1990s, some new donors have emerged. While still in their early stages and at low levels, aid programmes of the Republic of Korea, Taiwan, Province of China, Turkey, Singapore, Thailand, Malaysia, Indonesia and India have emerged on the development co-operation scene (OECD, 1999, 86). Most of these countries belong to the integration category in the developing world and are bound to go through the swings between rapid growth and the collapse of their economies. Therefore, their aid programmes are also likely to follow a similar pattern. The rest belong to the category characterized by the widening gap between the rich and the poor, and it is not likely that their aid programmes will expand in any significant way. The Gini co-efficient should be relevant in these countries also.

Therefore, while we may expect some increase in total aid volume due to the emergence of new donors, we cannot foresee a situation where they can replace the "Eastern" and OPEC aid programmes in terms of volume for some time to come. However, in the longer run, some of these new donors, as well as hopefully some others, may become important donors.

Other Official Flows as a Crisis Management Instrument

A major lesson from the East Asian economic crisis that started in July 1997 is that external official finance plays an important role in stabilizing the financial situation of the crisis economy and that a large sum is required for this purpose. While ODA is an important component in this operation, OOF, such as export credits and export insurance, play a critical role. In addition to IMF credits and IBRD loans, both of which are OOFs, the large amount of official finance from donor government sources have been proven to play critically important roles in the management of the East Asian Economic crisis.

Given the limited confidence of major economies in the international community, it is not likely that any significant increase of funds could be entrusted to the international institutions. It is then important for these major countries to develop bilateral mechanisms that can play these roles in the event of an economic crisis that will most likely be repeated in the integration category of developing countries. While the Japan Bank for International Co-operation (JBIC), which started its operation on October 1, 1999, was born out of the marriage of convenience between the Export-Import Bank of Japan and the

Overseas Economic Co-operation Fund (OECF), the need for this type of national institution as a crisis management instrument is obvious. While its current obsession is to safeguard the purity of the ODA components (OECF), it is essential that a new concept should be given to this bank. The categorization of different financial instruments such as ODA, OOF and Private Flows that was made 30 years ago may need to be reviewed in light of the totally new politico-economic environment which is largely dictated by the two tracks of globalization.

New Actors and Mechanisms

The world community has been testing a number of mechanisms for international development purposes and a number of new actors have emerged. Some of these developments seem to be of value in the coming period.

Support of South-South co-operation

While Economic Co-operation among Developing Countries (ECDC) has a history of some three decades, it has not been particularly effective in promoting sustainable development directly. Its major function has been to strengthen solidarity among developing countries for North-South negotiation/dialogue purposes. However, some donors have begun to support South-South co-operation in recent years. While there are no statistics for these activities, some of these activities have been institutionalized. In particular, the Asia-Pacific Economic Co-operation (APEC) has been gradually strengthening economic and technical co-operation among developing countries with the support of industrialized members in the name of "Partners for Progress". Another example of institutionalization is the support of Asia-Africa co-operation by Japan as follow-up activities of the Tokyo Conference for African Development (1993 and 1998). The highly relevant experiences of developing countries for their peers who are being supported by traditional donors are proving to be a useful addition to the instruments of international development.

Micro-finance

Micro-finance has become a popular subject in development finance in the past 10 years, while it has been practiced in various forms for the past several decades. Its positive impacts, further potential, as well as its limits, have been examined extensively. It has been pointed out that since its operations have such small impacts nation-wide, its influence on macro-economic performance is negligible. One direction where a breakthrough is being sought is to link micro-finance operations with formal financial institutions which are linked with the global financial market; this is an option which requires careful protection of micro-finance institutions and its beneficiaries.

With these limits and cautions in mind, however, micro-finance has been useful in mobilizing domestic savings and international development funds for the purposes of empowering the poor, in particular, the rural poor. It is important to maintain the current broad practice where domestic savings and, thus, domestic finances play the central role, to which external finance is added. Ownership of the local community is an essential requirement for success in micro-finance operations. International NGOs can play even more important roles in mobilizing external resources to support these operations. There may be more scope for ODA to contribute to these operations. There is a possibility that there may be an increase in external resources from business, NGOs and ODA that might be realized, but the amount involved will not be significant.

Non-governmental Organizations

The important roles that civil society organizations, in particular NGOs, play in sustainable development have been confirmed for over a quarter of a century. In the context of the Basic Human Needs Approach, which the donor community adopted as its common perception in the mid-1970s, the critical roles the NGOs had been playing were recognized as an essential component of international development. After having played central roles in major United Nations conferences during the 1990s, their financial contributions had been expected to increase.

However, the financial contributions of NGOs to sustainable development purposes from 1990 to 1997 have been largely at the same levels, ranging between 4.6 - 6.0 per cent of total flows (OECD, 1999, A2). In fact, this ratio has been decreasing slightly since 1995. It appears that while ODA performance is closely linked with Gini coefficients and the political will of the leadership of the country, NGO performance is more closely associated with GDP growth. While this observation requires close examination, the broad historical trend suggests a critical linkage between the two. If this linkage is maintained in the future, financial contributions from NGOs will increase, but at a moderate pace.

The emerging structure of sustainable development finance consists of the following components. By far, the largest component is the private finance which is mainly targeted at higher income developing countries. ODA is decreasing slightly, but is practically the predominant element in external finance for poorer developing countries. “Eastern” ODA has disappeared and OPEC aid is decreasing rapidly. There are some new and potential donors on the horizon, mostly in East Asia. However, their financial contributions will be rather limited in the coming five to

ten years' time.

One major factor which has proven to be critically important is OOF, at a time of financial crisis in higher income developing countries. A stable and large source of finance being the essential requirement in such a situation, OOF is the most important instrument from among those that are available.

Some new mechanisms and approaches, including support of South-South co-operation by donors, micro-finance and civil society, have positive impacts. However, their contributions are likely to be limited in terms of the volume of additional finance that can be mobilized.

PHASE ONE: GRADUAL STRENGTHENING OF SUSTAINABLE DEVELOPMENT FINANCE

It is now clear that the political mandate for international development finance is related to the management of both fast and slow globalization processes. The world community faces four important tasks:

- to adjust fast track globalization to the needs of developing countries;
- to strengthen the slow track alliance;
- to develop differentiated strategies towards three categories of developing countries; and
- to articulate ways to build up global public goods.

International financial contributions to sustainable development have to be strengthened along these lines. Over time, interactions between the two tracks of globalization will bring about a new basis for global co-operation. The important task of the first phase is to shift the gears of the world community gradually so that these four objectives can be pursued in a positive and realistic manner. For this purpose, the following six considerations should be useful.

Involvement of Private Finance and OOF in Sustainable Development Consultations

The predominant financial contributions to higher income developing countries are being made from the private sector and it is important to devise mechanisms where foreign direct investors, banks and other actors in the private sector are brought into a consultation process on sustainable development. Manufacturers and retailers have been sensitized to various requirements for environmental concerns, but they have not been exposed to the discussions and consultations on broader dimensions of sustainable development, such as governance and social development. The financial sector has not been sensitized to any of these requirements sufficiently and it is essential for the world community to develop a system where private financial actors are involved in the consultations on sustainable development.

Agents of OOF such as Export-Import Banks, trade insurance agencies, Central Banks and others are not any better informed than private financing actors with regard to their level of sensitivity to sustainable development. Given that their involvement in economic crisis management in higher income developing countries is of critical importance, and that the consideration of sustainable development in devising a recovery package is a crucial requirement, these institutions need to be sensitized to key dimensions of sustainable development. They, therefore, should also be involved in the consultation process on sustainable development.

While involvement in consultations does not guarantee an immediate positive shift in behaviour, it is difficult to expect their contributions to sustainable development to change in any significant manner without their involvement in these consultations. One approach to the private sector and OOF may be to organize informal meetings back to back with the existing sessions of the United Nations Commission on Sustainable Development and the World Bank's Aid Group Meetings. Starting with the World Business Council on Sustainable Development, other major business groups and OOF agencies may be invited to these meetings. At a time when restructuring is taking place in private financial institutions and OOF agencies, it should be more effective than in the past to incorporate new considerations in their activities. One should not underestimate the importance of involvement in the consultation process at a time of setting new priorities.

Decentralization and ODA

It is essential for the declining ODA levels to be placed in a new domestic context in both donor and recipient partners. This new context is decentralization, giving increasing power to local authorities. It is important to pursue this for two reasons: One is to look for ways to enhance relevance of development co-operation to tax payers and beneficiaries; the other is to bring the environment, governance and social development closer to where they are dealt with.

The question of relevance is the starting point of ownership. It applies to donors as well as to recipients, whose dimension tends to be the major concern in recent policy discussions. However, it is clear that the ownership of tax payers is also an important dimension in order to reverse the declining trend of ODA. In order to enhance the sense of ownership of tax payers in donor countries, the most important approach should be to bring local authorities into development co-operation activities more closely, in particular at a time when decentralization is a high priority on the political agenda of many donor countries.

Tax payers tend to be more open-minded and more sympathetic to development co-operation than anticipated, an attitude which is often revealed in opinion polls in donor countries and their sensitivities should be brought to bear upon the issue of ODA.

In recipient countries, there are also some indications of decentralization. While decentralization cannot be a panacea for all the ills of the central government, it is bringing about a new situation where local authorities are becoming potentially important partners in development co-operation. The participation of local authorities in development co-operation, in areas where actions take place, should enhance ownership of the beneficiaries. The capacity building of local authorities is an urgent task for aid to sustainable development.

The second reason is related to the fact that a number of important factors for sustainable development such as water, sewage and education are largely administered by local authorities. On the part of donors, it is mainly the local authorities that can provide know-how in these areas. And on the part of recipient countries, local authorities are the ones that need to be empowered in these areas. Therefore, on both sides of the development co-operation partnership, the involvement of local authorities should be an important component for effective actions.

Thus, the decentralization of donors and recipients requires the increasing participation of local authorities. It will strengthen the basis and operations of sustainable development co-operation, contributing inevitably to the enhancement of financing for sustainable development. A typical example is the environmental co-operation between Daireng of China and Kitakyushu of Japan, which initiated the operation that is now supported by the governments of both countries. There is significant benefit from this approach.

Importance of Less Co-ordination

For almost three decades it has been fashionable to advocate the importance of aid co-ordination. Recent practice places emphasis on sectoral co-ordination in recipient capitals. The avoidance of duplication, mutual enhancement and efficient use of scarce resources have always been the objectives of aid co-ordination. In addition, alleviating the burden of too many donors on a recipient country has often been mentioned. There can be many more reasons why aid co-ordination should be desirable. However, aid co-ordination in reality has rarely been effective, and it has been time-consuming and labour-intensive and sometimes highly expensive.

It is time to consider an approach where aid co-ordination in recipient capitals is limited to a few sectors that will really enhance the efficiency and effectiveness of aid. The concentration of co-ordination efforts in these highly selective areas may enhance the utility of these efforts, while less co-ordination of donors in other areas may often contribute to ownership by recipient countries.

Closer Consultations with New Donors

In the initial period, donors tend to be motivated either by politico-strategic considerations and/or commercial gains. In the process of mutual interactions, such as peer reviews by DAC, donors have become mature, looking for ways to maximize contributions to the broad-based development of recipient countries, and at the same time fostering the concerns and interests of tax payers in donor countries themselves. This is a constant learning process.

It is essential for the donor community to invite emerging donors such as Malaysia and Thailand, for example, which have reduced aid activities, hopefully temporarily, for the past two years due to their own economic problems, to the consultation process. It should be important for DAC to invite them to some of their meetings. These new donors are fully aware of the sensitivities of recipient countries, and DAC members may learn a lot from them as well. Mutual learning is the essence of this process, and new donors may reach the levels of maturity much more quickly than otherwise.

Support of South-South Co-operation

Another concrete way to enhance the activities of new donors is to support South-South co-operation. While OPEC donors provided financial support to Southern colleagues for, among other things, solidarity purposes, the new donors have started to extend technical co-operation in such areas as tropical agriculture and foreign direct investment. These activities often can be strengthened by financial support by Northern donors. One recent example is the establishment of a centre for information and training in Kuala Lumpur, Malaysia, for the purpose of business activities in Africa, with the support of Japan and France. These new donors can have a comparative advantage over traditional donors in technical co-operation on a number of grounds: appropriate technology, climate and geography, language, culture, region, cost or their own recent experience. The financial support of Northern donors for South-South co-operation will make these invaluable assets available more effectively than pure Technical Cooperation among Developing Countries (TCDC). Current efforts to learn from these new activities through such gatherings as the Okinawa Forum on support of South-South Co-operation which took place in May 1999 will contribute to the refinement of this formula.

Strengthening Global Public Goods

While debates on global public goods have failed to

advance substantive discussions in the mid-1990s due to objections of some major countries, the recent publication of *Global Public Goods* (Kaul, Grunberg and Stern, 1999) has helped to promote this idea significantly. In some European capitals and in Japan, this policy idea is seriously treated. While aid is being broadly recognized as an integral part of foreign policy by practically all donor countries, the strengthening of global public goods is beginning to be perceived by some of them as an essential requirement of foreign policy.

In addition to well recognized areas such as environmental protection and the treatment of communicative diseases, new areas are being identified as global public goods, including knowledge and information. One recent example is the Global Development Network of the World Bank whose major objective is to strengthen the research capabilities of developing countries. The International Development Research Institute of the Foundation for Advanced Studies on International Development (FASID-IDRI) started a research network of East Asian countries in 1998, and began an annual publication of Trends and Issues in East Asia in 1999. It recently started an Afro-Asian network for research and training for African development in September 1999. Some other institutions have begun these activities on a project basis, including "Spreading Gains from Globalization" in Sussex University, which started in September 1999, and the University of Tokyo's project on globalization and structural adjustment, which commenced its work in November 1999. The gathering of OECD countries' research institutions on development may also begin to consider ways to contribute to capacity building of research institutes in developing countries in the near future.

These concrete activities have been helped considerably by the *World Development Report* (1998) which focused on the roles of knowledge for development, and *Global Public Goods* (1999), in particular its chapter on knowledge as a global public good by J. Stiglitz. It is important to establish and strengthen research capacities at the country level on a number of key areas for development such as governance, social policy, environment protection and growth. These institutions need not be large ones, and need to have only a few competent people, establish close networks with other institutions within the country and abroad that specialize in similar issues in order to contribute significantly to the sustainable development of the country. There is a strong disposition on the part of donors to support these efforts of developing countries. The accumulation of knowledge for development through these activities will soon be considerable. Through a number of networks, this knowledge will be widely shared, thus constituting a global public good. The past fifty years of experience with development efforts in the world community will be a major asset for the purpose of sustainable development.

By redoubling efforts on all these six fronts, it will be possible for the world community to reverse the downward trend of sustainable development finance. Any one area of these actions can be realistically implemented without causing prohibitive political difficulty. It should be important to begin efforts to provide the world community with new vigour and energy on this basis. While all of these efforts may not increase development finance significantly, the totality of them will begin to change the political atmosphere where a new culture of international co-operation will become an important feature in the world community. By putting together these efforts with new gains by developing countries through such means as workers' remittances and exports that are made available by market based globalization, the politico-economic environment for sustainable environment will improve significantly.

PHASE TWO: RE-CONCEPTUALIZING COOPERATION FOR SUSTAINABLE DEVELOPMENT

By pursuing these six lines of activities, development co-operation may be able to establish itself as an important pillar for the management of globalization. It is expected that slow track globalization will be strengthened considerably and that the interactions between the fast and slow tracks will begin to find themselves to be mutually complementary to a considerable extent. If we succeed in taking Phase One now, the initial years of the 21st century will be characterized by a search for a following major phase to strengthen co-operation for sustainable development. Barring a disaster scenario, of which there could be many, the Second Phase will require a significantly different approach from the one with which we are accustomed. The major components of the Second Phase will consist of the following:

- the pursuit of policy coherence;
- the global involvement of the private sector;
- the increased roles of civil society;
- the central role of global public goods; and
- the charging of fees for the use of common goods.

Pursuit of Policy Coherence

The incoherence of policies of donor governments has been an important issue since the publication in 1969 of *Partnership for Development*, also called the *Pearson Report*. Although it has been discussed at various fora of the OECD since then, with some emphasis on it in recent years, there has not been any significant progress.

However, with increased interactions between the fast and slow globalization processes, the incoherence of policies of donor countries will begin to affect their own economies negatively. For example, efforts to overcome an economic crisis in some higher income

developing countries may entail the provision of a large amount of OOF at a time when tight fiscal and monetary policies may be pursued by the donor countries to contain, for example, inflationary forces. If the economies in crisis are not able to increase exports to these major markets, they may find it difficult to overcome the crisis. At higher levels of integration of economies, this situation will force increasing numbers of people to migrate to the donor countries, forcing donor governments to expand the budget to deal with various social issues that are brought about by the new migrant workers, either legal or illegal, thus increasing aggregate demand. The macroeconomic policies of donor governments will be, therefore, forced to cancel each other out in such an interdependent world. This sort of event, which unfortunately may not be a fantasy, will force donor governments, for their own sake, to consider the question of policy coherence towards developing countries more seriously than before. Development co-operation, which used to be largely a question of aid from the viewpoint of industrialized countries, with some consideration of trade, will come to be recognized as a broader issue, taking macroeconomic and sectoral policies into account, as well as aid, trade and investment policies. The need for an effective mechanism where research and consultation will be combined will be strongly felt by the international community.

Global Involvement of the Private Sector

While foreign direct investment in the marginalized category of developing countries is negligible in the present situation, it may well be an important factor in most of these countries with the progress of the First Phase. In addition to trade, investment linkages with the global market will expose these countries to opportunities as well as risks of the market economy. The major functions of ODA will have to be shifted towards support of the market mechanism, including the strengthening of safety-nets. By then, the experience of other developing countries with powerful forces of market globalism will be considerable and they will be in a position to provide know-how to deal with them from the viewpoint of developing countries.

Crisis management mechanisms will have to be strengthened considerably. It is expected that the confidence of major economies in the international community will be strengthened to some extent. However, the level of confidence may not be raised to such a height where global mechanisms such as the IMF will be significantly enhanced. Needless to say, a global central bank will continue to be a dream. Most probably, regional IMFs will be established. Co-ordination between the IMF, a regional mechanism and national instruments will become a difficult issue, although the multiplicity of these instruments will give a better choice of policies for developing countries.

Another important development is that actions in co-operation for sustainable development will need to be quick so that they support transactions of the private sector effectively all over the world. The bureaucratic structures that have been built up in the aid agencies in the past decades will need a major change. The broad trends of debureaucratization will be twofold. Firstly, programme officers, as opposed to administrators, will have to become a dominant feature in aid agencies. They will handle virtually everything by themselves within a given mandate. The second trend will be to entrust an increasing part of the aid operations to bodies and groups that are outside the aid agencies. They will combine research functions and NGO activities in some specific fields. By combining professional competence with the advantage of small sizes, they will be well suited to act quickly.

Increased Role of Civil Society

It is expected that civil society will play significantly more important roles globally in the Second Phase. Increased portions of ODA will be channelled through NGOs, but private contributions may continue to grow largely along the lines of GDP growth. Therefore, the balance between government contributions and fund raising from the private sources will be an important issue.

The increasing involvement of NGOs in co-operation for sustainable development should make it easier for political leaders to put emphasis on these activities. The strengthening of civil society and their increased involvement in the activities mean an increased potential for votes for ODA activities and NGOs themselves will increasingly become a basis for strengthening and expanding ODA.

However, the increasing roles of NGOs for ODA will inevitably strengthen the national characters of NGOs, leading, in some cases, to NGO nationalism. The one major advantage of NGOs is the ease with which they cross national borders and cultures, but NGO nationalism may undermine this. Within the NGO community, it is likely that NGO nationalism will become one major issue that will require thorough soul searching with regard to their identity.

Another factor that will become important is the relationship, in the developing economy, between NGOs and business firms that are based in the same donor country. The relationship between aid agencies and business firms has traditionally been a delicate issue in a recipient country, and the rules of the game have been established over time. NGOs that are increasingly supported by ODA and business firms, particularly in poorer countries, may have to develop

a transparent relationship that is acceptable to the recipient country itself. It might become necessary for the international community to arrive at a set of principles that govern the relationship between them.

Central Roles of the Global Public Goods

It is estimated that about half of ODA expenditures is on various components of global public goods. However, these expenditures are not yet conceptualized as such. By the end of the First Phase, with a clearer notion of global public goods, it is expected that these will account for almost two thirds of ODA expenditures. The Second Phase may well be able to assume that the major objective of ODA will be to strengthen global public goods. It may become feasible to strengthen existing relevant facilities such as the Global Environment Facility and to establish new ones on a selective basis, such as a global facility for knowledge management for sustainable development. The objectives of the global knowledge facility may be to strengthen country based knowledge institutions and to act as a central stock-taking mechanism of knowledge and information that are gained by these institutions, and as an effective knowledge dissemination agency. It may be useful to link the institutional knowledge of global organizations such as the World Bank and UNDP as well as regional ones, such as the Asian Development Bank and the Asian Pacific Economic Cooperation, with this new facility for broader use by each developing country and by the world community as a whole.

An increasing number of components of environmental issues will be perceived to constitute global public goods/bads. Water, which has highly regional characteristics based on hydrological observations, may become a central component of environmental public goods to be protected. It may indeed become a high priority commodity globally. Biodiversity may by then require its own global facility due to the saliency of this issue. Each of these issues may be supported by their stake-holders who, in turn, may have built up constituencies due to a widely shared perception of their importance. Whether or not to reintegrate the multiplicity of these funds and facilities into GEF may become an issue.

Charging Fees on Use of Global Common Goods

It has become a common practice nationally to charge fees for the use of some common goods such as water. Globally, sea-bed extraction was an important negotiation issue in the 1970s. With regard to air, the Kyoto Protocol on Climate Change of 1997 made a major advancement on this question. It is not beyond realistic expectation that in the Second Phase, charging fees for the use of global common goods will begin on a selective basis. The Tobin tax may also begin to have some reality. These fees might become the basis of the multiplicity of global facilities which might also be so devised as to function as collecting agents of these fees.

Since the collection of fees will be made based on the use of common goods, the more use and consumption of these common goods means the payment of more fees. In effect, industrialized countries will pay these fees much more than others, although it is essential that the same rules should be applied globally.

In the initial stage of de facto global taxation, a number of unexpected problems may arise. At the same time, it should be important to analyze these experiences and to learn from the lessons in order to improve these mechanisms and practices on a global basis. Therefore, at this early stage of global taxation, it should be important to establish global research institutions to pursue these activities. Experts from around the world should jointly review these experiences rather than to let existing national research institutions and universities to pursue these tasks alone because the national level research may well supplement the efforts at the global level.

Given these five components, the Second Phase, which may come even before the year 2010, will require re-conceptualization of co-operation for sustainable development. The major task of policy intellectuals is to begin re-conceptualization work now so that the world community as a whole can start preparations for the Second Phase soon after the year 2002.

CONCLUDING OBSERVATIONS

It is essential, when considering financing for sustainable development, to avoid wishful thinking, on the one hand, and exercising too much technicality at this stage of policy debates, on the other. These approaches will not contribute to effective discussion and policy considerations. The most important requirements for presentation of a basis for policy discussions are threefold:

- to recognize that the political basis for development co-operation has shifted from the classic factors of management of the aftermath of World War II, of decolonization and of the cold war to the management of globalization;
- to observe that the private sector is becoming a predominant factor in higher income developing countries, whereas ODA, which is declining, continues to be an important feature for poorer developing countries; and
- to consider policy options in phases based on the reality of the politico-economy in the world community, with a first phase consisting of some advance on key instruments so that a declining

trend of ODA can be stopped and that positive factors can be built up, and with a second phase when a clearer advance is being attempted with the re-conceptualization of co-operation for sustainable development.

Concrete proposals and ideas have been made in section V for six areas during the First Phase which needs to be acted upon as quickly as possible. These are the measures that could be pursued without radical departures from what are being practiced now. For the Second Phase, policy proposals have been given for five areas. Some of these may sound rather too idealistic now. However, with the advance of the First Phase, they will become well within the range of realistic possibilities. Some may wish more idealistic options, which, however, may not be useful for policy debate at this juncture. All of these policy proposals put together will require a rather fundamental re-conceptualization, however, of co-operation for sustainable development. Intellectual efforts to pursue it should start now.■

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OFFICIAL DEVELOPMENT ASSISTANCE AND SUSTAINABLE DEVELOPMENT IN AFRICA: TOWARDS A NEW STRATEGY

*R. Omotayo Olaniyan**

EXECUTIVE SUMMARY

Official development assistance (ODA) has played an important role in the development process and poverty alleviation in Africa since the end of World War II. The rationale for ODA was encapsulated in several theories, notably the donor-oriented theory or international relations theory and supplemental theories of foreign aid. At the United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro in 1992, it was emphasized that the implementation of Agenda 21 would entail large resources that could, in the short run, be out of the reach of many developing countries. Thus, in the spirit of international cooperation for development, the international community acquiesced on the need for increased ODA flows to developing countries, most of which are in Africa.

However, while the need for ODA has increased, the flow has declined and is characteristically unpredictable. The decline has had far-reaching adverse consequences for the promotion of realistic sustainable development in developing countries, including those in Africa. Hence, the fundamental questions are what went wrong and what must be done to arrest and reverse the decline in foreign aid flows, particularly to Africa?

Thus far, although the level of implementation varies from one country to another in the continent, some common areas of implementation of Agenda 21 may be identified. At the national level, these include the integration of Agenda 21 measures into national economic policies, strengthening of environmental laws and creating them where they do not exist. There have been actions in the consolidation or creation of environment institutions. Other actions relate to environment impact assessments and capacity building. In regional actions, intergovernmental organizations have begun to take a leading role in the co-ordination of regional environment programmes. On the substantive issues, the questions relating to natural resources management, poverty, population, human settlements, health and waste and hazardous materials are currently receiving attention. At the international level, co-operation between the United Nations' organizations and the World Bank has increased for the implementation of freshwater and food security measures in developing countries. The Global Environmental Facility (GEF) as made some contributions in the financing of projects in biodiversity, climate change, international waters and the prevention of ozone layer depletion. And more importantly, the United Nations Development Programme's Capacity 21 Programme is intended to promote capacity building in developing countries.

Progress in sustainable development in Africa has not been substantial because of enormous difficulties encountered at all levels of implementation. The forces emanating from the weak socio-economic structures of African countries and the international economic environment have acted as impediments to progress. At the national level, progress in sustainable development is hindered by the shortage of skilled staff, paucity of training facilities, lack of integration and co-operation among institutions, inadequate information, incomplete integration of all stakeholders into sustainable development programmes and counter-productive government programmes. At the regional level, sustainable development has experienced difficulties as a result of duplication of efforts and waste of scarce resources. There is lack of commitment by countries to full participation in regional initiatives. Also, the lack of financial resources poses serious difficulties to the implementation of programmes. At the international level, the major difficulties include inadequate and unpredictable funding of programmes

* R. Omatayo Olaniyan is Senior Economist, Permanent Observer Mission of the Organization of African Unity to the United Nations, New York, and Research Professor in International Economic Relations, Nigerian Institute of International Affairs, Nigeria.

in African countries. Also, the disadvantages of African countries in the international economy have massively militated against sustainable development in Africa.

The decline in bilateral and multilateral ODA flows to Africa was due to the unfavourable circumstances emanating from the world economy, the developed countries and African countries. The collapse of the former Soviet Union and the emergence of new states increased demand for ODA from the developed countries and shifted attention away from Africa. In the 1990s, most developed countries were confronted with the need to reduce budgetary deficits at home. Along with this, the European Union countries were concerned with the agreement to reduce fiscal deficits as a condition to attain monetary integration during the decade. The 1990s were particularly a period of aid fatigue in the developed countries owing to perceived poor results in the utilization of aid in the continent. Aid utility has suffered from poor aid co-ordination and management. Furthermore, the political instability in some countries in the continent represented a serious setback to the advancement of sustainable development.

As it is today, African countries run the risk of losing the gains made in sustainable development because of the stated difficulties. ODA is critical to the implementation of sustainable development in Africa. It is important that new and more innovative methods are found to ensure increased flows to priority areas in sustainable development. In addressing these, actions need to be taken at all levels of implementation. At the national level, new methods of policy co-ordination are desirable to harmonies the interests of bilateral and multilateral donors. There is a need for more stringent laws and regulations to deter corruption and mismanagement of aid. The administrative, political and economic bottlenecks to full disbursement of allocated ODA should be identified and removed. African countries should get more involved in the creation of appropriate aid constituencies in the developed countries to lobby lawmakers to ensure increases in aid disbursements to Africa. Additionally, African countries should endeavour to improve their internal taxation systems to raise additional funds for sustainable development, especially for the creation of sustainable development institutions. At the regional level, regional development banks and intergovernmental organizations should assist in the generation of additional ODA to African countries.

However, the more enduring efforts would come from the international community. At this level, the way forward includes stronger political will in developed countries to commit more aid for sustainable development, the need to disburse aid on a timely basis, the reduction of aid tying and the channelling of aid to priority areas of sustainable development as identified by African countries. Above all, the international community should take appropriate steps to remove the obstacles to the external trade of African countries in order to enhance their autonomous base for the long term financing of sustainable development. The multilateral agencies, especially those of the United Nations, are currently engaged in restructuring for greater effectiveness because of changing global circumstances. The international community should effectively fund these agencies to enhance their capacity to effectively deliver on sustainable development issues in Africa.

INTRODUCTION

THE United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro in 1992, was a turning point in the global approach to development. The Summit ended with a blueprint, Agenda 21, which globally addressed the question of sustainable development. Agenda 21 requires all countries to embark on a new development process that will preserve nature, the environment and resources for mankind and its future generations. At the same time, it was clear that these endeavours, which are critical to better the future of mankind, would require large resources for their implementation and could, in the short run, be out of reach of many developing countries. Thus, it was immediately clear that, in the spirit of international cooperation for development, official development assistance (ODA) would be needed in the case of the developing countries, most of which are in Africa. Chapter 2, Section 2.3(c) called on the international community to provide adequate financial resources to developing countries in order to achieve global sustainable development.

Traditionally, ODA has played, since the end of the Second World War, an important part in the process of development in many developing countries, including those in Africa. The termination of colonial rule in many countries called for some forms of financial support to promote the process of economic growth and to alleviate poverty. In this context, the flows of ODA to developing countries from the developed countries vary in volume over time to development targets essentially determined by the developed countries. Subsequently, the rationale for ODA to developing countries was encapsulated in several theories, notably the donor-oriented theory or the international relations theory and supplemental theories of

foreign aid.

The main thrust of the donor-oriented theory stipulates that donors have other objectives besides the promotion of economic development in the developing countries. According to that theory, donors have political, strategic or economic interests in the disbursement of aid. The developing countries might be interested in long-term development and political stability with the hope of getting integrated into the world economy, on the principles of comparative advantage. But the developed countries do not perceive their own interests in these terms. For this reason, beginning with the 1960s foreign aid was thus generally directed at import substitution rather than export promotion. Along with this, there has been reluctance in the opening up of developed country markets to the industrial products from the developing countries. However, there have been major developments in the political, strategic and economic interests of the developed countries during the last three decades. It has become increasingly obvious that these factors may not represent credible and acceptable determinants for the flow of ODA in the face of new global trends characterized by partnerships for international development.

In contrast, the distinguishing feature of supplemental theories consists of its tenacious link to certain factors in economic growth. In the 1950s, this was broadly taken to be savings. The shortage of savings was considered a critical limiting factor to economic growth. However, in the 1960s, attention shifted to other factors, especially the need for foreign exchange and skills. But this notwithstanding, the influence of savings remained strong. It was argued that foreign aid could supplement savings and thereby enable the country to maintain the level of investment desirable for economic growth. The theory maintains that as the economy grows and incomes grow, the country can afford to set aside an increasing proportion of its income in the form of savings. Eventually, the economy will reach the point at which savings are sufficient to finance the volume of investment needed to maintain the desired state of economic growth without further requirements for foreign aid. In this thinking, supplemental theories are directed at the attainment of "self-sustaining growth." Self-sustaining growth was held out as a device and promise that foreign aid would be of limited duration. In other words, at a future date there might not be need for additional aid from the developed countries (White, 1974, 13-16). While this theory sounds realistic, it has been difficult to put into practice. For example, the ODA requirements for African countries to meet the development targets under the United Nations New Agenda for the Development of Africa in the 1990s were calculated, but disbursements have never been adequate and have generally remained unpredictable. Thus, this brings to the fore the question of the "political will" necessary to effectively support the growth process in Africa. On the whole, the limitations of both theories should be perceived further in the context of their capacity to address the broader issues of sustainable development. It follows, therefore, that a useful general theory on foreign aid will need to take into full consideration the parameters of sustainable development and the new thinking of the international community for international cooperation for development.

The idea of sustainable development emerged in 1972 out of deep concern over the threat to the natural environment posed by economic growth and industrial pollution at the United Nations Conference on the Human Environment in Stockholm, Sweden. Subsequently, the World Commission on Environment and Development (1987) published its report Our Common Future which attempted to explain "sustainable development" as an integrated approach to policy and decision-making in which environmental protection and long-term economic growth are seen as complementary and mutually dependent. It was noted that solving environmental problems required resources which only economic growth could provide. But economic growth will falter if human health and natural resources are damaged by environmental degradation. Thus, the report provided for an action plan that was issue-oriented on the question of pollution and non-renewable resource depletion (United Nations, 1997b, 2). In effect, the report set in motion the process that culminated in the convening of UNCED in 1992.

However, while the need for ODA has increased over the years, it is clear that the flow has declined and has been disappointingly unpredictable with far-reaching adverse consequences for the promotion of realistic sustainable development. This development has apparently created frustrations in many developing countries in Africa, particularly in those countries that strongly felt that most of the conditions required for increases in the inflows of ODA and other forms of foreign capital have been meritoriously fulfilled. For example, in the implementation of political and economic reforms, the establishment of democracy, good governance, accountability, structural adjustment programs, etc., ODA has declined when these countries have needed it most. Hence, the fundamental questions are what went wrong and what must be done to arrest and reverse the decline in foreign aid flows to the continent? The answers and explanations to these questions would definitely be found in a host of reasons. Some of these could be external or internal to the recipient African countries. In the light of the critical situations of African countries and other developing countries, several studies have been carried out on the issue of aid flows from the international community. The attempt in this study therefore will be to build on the existing body of knowledge in this area.

Five essential assumptions underlie this study.

Firstly, that in the present economic dispensation of many economically weak African countries, ODA is a sine qua non for the promotion of sustainable economic development and the realization of the goals of Agenda 21. Secondly, that an increase in ODA is possible in the future with improvements in aid utility; that is, with better results from existing assistance programs and projects. Thirdly, the flow of ODA to Africa could be conditioned less by adverse economic conditions in donor countries and more by other critical strategic and political world development issues that are of interest to the donor countries. Fourthly, that the flow of ODA could be conditioned by the dynamics of the world economy. Increased globalization engendering greater integration could foster increased ODA support for developing countries to develop and increase the demand for the products from the developed countries. Fifthly, sustainable development is attainable in Africa, but this will hinge on full and effective internalization of the measures of the programme in national policies and the creation of an appropriate enabling environment to nourish the programmes.

In this context, a five-point approach has been adopted for this study. The first section will provide an overview of sustainable development in Africa. It will attempt to describe development in Africa before Agenda 21. At the same time, it will present an account of the implementation of the programme in Africa since its adoption in 1992, highlighting the main encountered difficulties. The second section, entitled "ODA Flows to Africa," will relate the theory of foreign aid to its practice. It will describe the trend of both bilateral and multilateral ODA flows to Africa, addressing the origin, volume and destination of flows from 1979-1999. This period is inclusive of the period of reforms, the early and mid-1980s, and the period after the adoption of Agenda 21. The section will seek to explain the flows in the context of influential developments, both political and economic, in Africa, donor countries, and the international economy. The third section will further relate the theory of foreign aid to its practice through an in-depth critical analysis of some of the identified fundamental problems in the links between ODA and selected issues in sustainable development. The section will, inter alia, explore the rationale for aid decline, support for Africa's economic development, institutions, and capacity building. The fourth section will attempt to present a new road map to enhance ODA flows to Africa. In light of the observations from this study and the experience of ODA flows to other developing regions of the world, the chapter will seek to prescribe new and comprehensive policies and actions that will have to be undertaken by the recipient and donor countries and multilateral institutions to engender an increase in the inflow of ODA to Africa in the near future. In the final section, efforts will be made to draw strong conclusions from the main issues observed in the main body of the study. It will summarize the essential dynamics of ODA and the required collective efforts by all stakeholders in the promotion of sustainable development in Africa.

SUSTAINABLE DEVELOPMENT IN AFRICA: AN OVERVIEW

The developments in Africa, both political and economic, in the course of this decade have been far-reaching in the on-going transformation of the continent. These have, to a large extent, assisted in the shaping of the character and direction of sustainable development. At the same time, the quality and quantity of support that Agenda 21 received from the international community have dictated the rate of progress in sustainable development. Sustainable development is a priority matter for African governments because of its intricate linkage to poverty eradication. For this reason, there has never been a shortage of desire to implement Agenda 21 in Africa. But the enthusiasm to implement can be turned to reality only if the internal and external environments are right. Thus far, these environments cannot be construed to be absolutely right. The drive towards the achievement of sustainable development in Africa has not been impressive because a host of constraints have unduly impeded the implementation of programmes and projects.

Background

It will be noted that beginning with the early 1980s, African countries have acknowledged the necessity of political and economic reforms. Both were perceived as prerequisites for governments to fulfil their primary obligations of provision of improved welfare and the eradication of poverty. The initial actions of most governments were in economic reforms; that is, varying forms of structural adjustment programs to address economic recession and promote economic growth. But it became increasingly obvious that some of the existing political regimes — authoritarian or military regimes and one party states — were considered less helpful towards the promotion of a durable economic and political system. Thus, there were sub-regional and regional declarations on the promotion of democracy, good governance, accountability, human rights and the eradication of corruption.

This understanding led to the initiation of democratic processes in many African countries. Elections have been held in many African countries that hitherto were under military regimes or operated in the context of a one party arrangement. Political parties have been created in many countries to articulate political agendas for development. Along with this, the parliamentary process has been set in motion. Pressure groups, labour unions, non-governmental or-

ganizations, and the private sector now have more contributions and inputs into the process of governance. Furthermore, attempts have been made to create appropriate supportive administrative and legal institutions to buttress the democratic process.

The efforts of many African countries have been very significant in the promotion of democracy. However, it is clear that these arrangements are broadly in the embryonic stages. Democracy needs to be nurtured and sustained. The consolidation of democracy in the continent will continue to require more efforts from African governments to strengthen political structure, the political and administrative institutions as well as the legal environment. At the same time, increased technical and financial support of the international community would be needed to complement the efforts of African governments. While the democratic process has taken shape, in varying forms, in many countries, a few countries are, however, still confronted with critical internal political stresses and strains. For some of these countries, political stresses and strains have degenerated into civil wars with far-reaching consequences for their development. Also, these crises have had negative impacts on the development processes in the neighbouring countries and sub-region. Civil wars have resulted in the elimination of democratic governments and disruption of economies, infrastructure, and social systems. They have created an unprecedented volume of displaced persons and refugees. As has been noted in several studies, the crises in these countries have their causes in several factors that include colonial administration, history, deficiencies in political development, unequal economic development, poverty and ethnic strife, to mention a few. For these group of countries it is important to see to the immediate termination of hostilities. Efforts must be made for adequate post-conflict development, rehabilitation and reconstruction. African governments and the international community, including sub-regional and regional institutions, should give sufficient support to the countries in conflict to terminate conflicts and assist in bringing them to the path of sustainable development.

At the same time, it is equally imperative that efforts should be made to tackle the critical impediments to economic growth. It has been noticed that since the mid-1990s the continent has experienced a rise in many economic indicators. Real GDP growth accelerated to 4.5 per cent between 1995 and 1997, compared to an average annual rate of 1.5 per cent between 1990 and 1994. Real average per capita GDP growth became positive, at 1.1 per cent annually over the same period, compared to about negative 1.9 per cent during 1990-94. Also, export growth doubled from an annual average of 3.9 per cent between 1990 and 1994 to 7.8 per cent between 1995 and 1997 (UNECA, 1999, 8). It has been further observed that these improvements in Africa's economic performance have essentially been due to the positive effects of implemented macroeconomic policies by many countries beginning from the mid-1980s and better weather conditions, which led to increased export earnings. While this growth is fragile, it is clear that most countries are yet to get out of the woods of poverty. Hence, there is a need to maintain the momentum of growth and to increase efforts to eradicate poverty by addressing the fundamental impediments to economic growth and development.

Among other things, African countries need to mobilize domestic resources as a medium- to long-term goal. Savings rates in Africa have been low in the past. While savings performance varies between countries, African countries have lower savings and investment rates than other less developed countries. For example, in 1997 domestic savings as a percentage of GDP was 17.6 per cent, compared with 24 per cent for all developing countries in the same year. Also, investment was 18.3 per cent of GDP in contrast to the over 32 per cent required for the poverty reduction targets (UNECA, 1999, 21). As of 1994-96, the burden of external debt in the context of the ratio of total debt-service to export revenue of Sub-Saharan Africa was put at 30 per cent. Judged by the debt burden indicators and debt servicing capacity, it is clear that many African countries are still in serious debt problems notwithstanding previous debt relief extended by creditors. The burden of the external debt of African countries will need to be addressed further with an appropriate international debt strategy. Notwithstanding the notable efforts made by many African countries in the implementation of economic and financial reforms, FDI flows to most of them remain negligible. Africa trails other developing regions in attracting FDI. In 1994 it attracted 2.3 per cent of world FDI. This fell to 1.4 per cent in 1996 and to 1.2 per cent in 1997. During the same period, the flows to Latin America and the Caribbean rose from 11.8 per cent in 1994 to 14 per cent in 1997. Similarly, the flows to Central and Eastern Europe increased to 3.7 per cent in 1997 from 2.4 per cent in 1994 (UNCTAD, 1998, 9). Foreign direct investment will need to be increased in order to raise the level of productivity and facilitate economic growth and development.

The exports of African countries continue to remain insignificant in terms of total world exports. The impediments to Africa's external trade expansion continue to be manifested in both external and internal factors. In particular, the constraints to market access for African products in the markets of the developed countries should be removed to allow for a steady increase in African exports. The implications of the on-going globalization process should be considered and appropriate action taken to eliminate the marginalization of African countries. African countries themselves need to continue to adopt appropriate macroeconomic policies to reduce inflation, create

more jobs and increase productivity.

Sustainable Development

Since Rio there have been actions at all levels concerning the relevant programmes of Agenda 21, especially in some basic priority areas such as institutions, policies, environmental laws, land, wastes and hazardous materials, population, human settlements and health and international cooperation and trade.

Institutions

Following the adoption of Agenda 21, the first obvious concern of African countries was the National Environment Action Plans (NEAPs) to address institutional mechanisms and organizational structures. In this context, countries have been implementing institutional reforms: national environmental institutions (ministries, departments, commissions, etc.), non-governmental organizations (NGOs), advocacy groups, and private-sector institutions have been strengthened or established to take responsibility for the environment and to promote sustainable development policies and programmes (UNEP, 1997, Chap. 3). Consequently, there has been increased cooperation between national agencies, responsible for economic planning, and those in charge of environmental management. Albeit, these institutions are still weak and inadequately equipped to implement their functions. These limitations stem from many factors, notably a serious shortage of skilled staff, the absence of adequate training facilities, lack of integration and cooperation among major institutions, and counterproductive government policies and legislation.

In the same vein, in order to support the implementation of the various General Assembly Resolutions on Agenda 21 follow-up, the Economic Commission for Africa Conference of Ministers Responsible for Social and Economic Planning and Development adopted, at its nineteenth session, resolution 757 (XVIII) through which it, inter alia, restructured the intergovernmental machinery of the Commission. Among the thematic Conferences of African Ministers responsible for Sustainable Development and Environment (CAMSDE), a committee of experts was also created to the Conference.[1]

There were also, at the international level, new initiatives with consequential institutional requirements, notably: the United Nations Convention to Combat Desertification, particularly in Africa; the Programme of Action for the Sustainable Development of Small Island Developing States; the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982, relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks; and the Global Programme of Action on Protection of the Marine Environment from Land-Based Activities (United Nations, 1997a, 2). In addition, it will be noted that the Commission on Sustainable Development has initiated further institutional developments, characteristically the ad hoc open-ended Intergovernmental Panel on Forests (IPF). It has also reaffirmed arrangements directly relevant to its mandate, such as the Intergovernmental Forum on Chemical Safety (IFCS), established in 1994 to develop and review strategies for implementation of chapter 19 of Agenda 21. All these initiatives should provide support for the effective implementation of the conventions. But the growing number of conventions in environmental and socio-economic fields subsequently increased awareness of the necessity for linkages between the intergovernmental and support arrangements of the United Nations system and those of other organizations. Thus, international financial and technical support for the conventions has resulted in overall increased cooperation and new institutional arrangements between the United Nations system and international financial institutions.

Policies

The next important area of focus of most African countries has been the development of relevant policies. Efforts were energetically directed at the integration of the environment into key policies, plans and decision-making. This has entailed cooperation amongst various Government agencies and NGOs. Development in this area has been both innovative and encouraging. Some countries made special efforts aimed at integrating environmental protection and improvement activities into key sectors and chapters of their post-UNCED national development plans by ensuring, through inter-ministerial arrangements, the shared understanding and commitment of other key ministries. The broader participation of representatives and experts from major groups, such as NGOs, women and youth, was given a higher degree of attention which, in turn, led to public understanding and support. Several countries have established national youth bodies or held youth forums to improve consultation and programme delivery. Generally, typical programmes focus on leadership, environmental education, and community participation.

Thus, NGOs now play a significant role in raising awareness and mobilizing people at local, national, and international levels. Their interaction with government is regarded as helpful, and they are fre-

[1] The mandate of CAMSDE is based on the interrelationship between agriculture, with an emphasis on food supply, rural development, water resources, population, the environment and human settlements.

quently included as members of national sustainable development bodies and international delegations. At the same time, governments are encouraging sustainable development at the community level by strengthening the role of local government in environmental, natural resource, and infrastructure planning and development. Several African countries also took action on the over 25 proposals for integrating the environment and development in policies, planning and management in line with Chapter 8, Section A of Agenda 21. This was particularly the case in countries where (i) Agenda 21 plans were adopted; (ii) Agenda 21 national/sub-regional workshops were organized; (iii) Capacity 21 programmes of the United Nations Development Programme (UNDP) are being implemented. But the implementation of these policies will depend on the support of adequate environmental laws.

Environmental laws

After UNCED, African countries proceeded with the consolidation or creation of environmental laws. This essentially consisted of a major review and strengthening of existing laws by some African countries. In the context of Agenda 21 (Chapter 8), attempts were made to update and bring the laws in line with current scientific knowledge; reduce overlaps and conflicts; set much higher and tougher penalties to encourage compliance; clarify and harmonies the responsibilities of different ministries and levels of governments; and identify and fill significant gaps. In this connection, some UN agencies assisted in this exercise, for example through the implementation of the Government of the Netherlands funded joint United Nations Environment Programme (UNEP)/ UNDP (in cooperation with the World Bank, World Conservation Union (IUCN) and the Food and Agricultural Organization (FAO)) project on capacity building in the areas of environmental legislation and institutions. Thus, almost every country has established legislation or regulation that requires environmental impact assessments, especially at the project and programme level, but increasingly at the level of policy-making as well. Attempts are made to ensure that legislation is more specific. For example, the Mali Constitution of 1992 notes: "Every person has a right to a healthy environment. The protection and defence of the environment and the promotion of life are the duty of all and for the State." Some other countries whose constitutions also provide for environment, natural resources, and sustainable development are Ghana, Kenya, and Uganda. Additionally, the legal review by African countries also included relevant international conventions/agreements on the environment. In this regard, the African Ministerial Conference on the Environment (AMCEN) took commendable steps to encourage African countries to fulfil their main obligations under those conventions that they are party to. A good example in this connection is the African Ministerial Conference on the Environment (AMCEN) convened ministerial consultations (for Eastern and Southern African countries) on the sub-regional, regional, international and global conventions that took place in Nairobi, March 1995. This meeting identified other conventions which African countries should consider ratifying as a matter of priority. It is also noted that, in the case of the conventions on biological diversity and desertification, AMCEN, in cooperation with African governments, organizations, NGOs and relevant UN system partners, developed common perspectives and positions which guided and continue to inspire the region's participation in these conventions. The Organization of African Unity (OAU), in close collaboration with UNEP, Economic Commission for Africa (ECA), United Nations Office to Combat Desertification (UNSO), and other United Nations agencies active in the region, has been fully involved in mobilizing the effort in the negotiation for the United Nations Convention to Combat Desertification and support for its implementation, as well as other initiatives for the implementation of the Abuja Treaty establishing the African Economic Community. Some other programmes of action of AMCEN are shown in Box 1.

Capacity building

An important feature of both Agenda 21 and the African Common Position on Environment and Development is the strong emphasis on capacity building for sustainable development. In over 100 priority programme areas in Agenda 21, there are specific recommendations for capacity building. In response, several African countries, with the cooperation of bilateral aid agencies and UN agencies, have made national capacity building for sustainable development a high priority. The objective of the Agencies has been to assist African countries in the consolidation of their institutional, managerial and technical capacity to implement sustainable development programmes. For example, there is the UNEP Funded Regional Advisory Services project and the Government of the Netherlands funded $5 million joint UNEP/UNDP project on capacity building (legislation and institutions). Also, the UNDP Capacity 21 Programme has been complementing the efforts of governments in this area. Additionally, UNDP has embarked on the recruitment of sustainable development advisors for some of its country offices.

Land

Under land issues actions were taken in a number of areas which include land systems, desertification and drought, land degradation, deforestation, water-related issues and coastal and marine areas. One fundamental fact in Africa is that traditional rights on land and access to land vary greatly from country to

Box 1. Important Programmes of Action adopted by the African Ministerial Conference on the Environment

- African Strategies for the Implementation of the United Nations Conference on Environment and Development, adopted by the Conference of Ministers of Economic Planning and Development at its 19th Session, 3-6 May 1993,
- Proposals for the Implementation of the Abuja Treaty Establishing the African Economic Community, the 14th Meeting of the Technical Preparatory Committee of the Whole, 12-16 April 1993, and the 28th Session of the Commission/19th Meeting of the Conference of the Ministers, 19-22 April 1993,
- Relaunching Africa's Economic and Social Development: the Cairo Agenda of Action, adopted at the Extraordinary Session of the OAU Council of Ministers on 28 March 1995, subsequently endorsed by the June 1995 Summit of the African Heads of State and Government in Addis Ababa, and
- The 1996-97 Programme of Work, adopted by AMCEN at its 6th Ministerial Session in Nairobi, 14-15 December 1995.

country. There are places where most land belongs to the state and places where they belong to traditional chiefs. Rights on land could facilitate access to land for small farmers or hinder it. The strong trend on the continent towards democracy and decentralization of civil powers is having a positive impact on land-ownership in rural areas.

The concept of giving back full authority to villagers for their land has gained ground. Within this development, the pilot villages of the AMCEN programme were successful, as illustrated in the case of Senegal. Also, many bilateral and multilateral donors and African Governments adopted this grassroots approach to land productivity, for example, Germany in Burkina Faso; the World bank, with Natural Resources Management Projects in many countries; and UNDP in Senegal. Integrated plant nutrition systems, integrated pest management and agroforestry are providing new packages for land rehabilitation and productivity increase. The Organization of African Unity (OAU) programme on the use of local minerals and organic resources as low-cost fertilizers and soil ameliorants is opening up new solutions to the problems of soil fertility depletion (UNEP, 1996). With these developments, hopes for advancements in sustainable development are more assured.

One important reason for the continued land-related environmental problems is that there are limited alternative industrial activities to reduce pressure on land. Furthermore, the declining terms of trade on agricultural commodities add pressure on land and contribute to continuing poverty. Governments have tried to expand and diversify the production structure throughout the industry sector. Generally, these efforts have focused on policies for developing institutional infrastructures that enable change. Additionally, there are also problems in reaching agreements among various stakeholders (government, the local community, foreign investors, and international financing agencies) on investment activities. The means to appraise the degree of success of various actions and their accountability are urgently needed (UNEP, 1996).

Desertification and drought. In Africa, desertification and drought are closely related to poverty, food security, and land degradation. The United Nations Convention to Combat Desertification has stimulated an early national response, especially the preparation of action plans. Solid information, particularly on trends, is generally lacking, and there is evidence of concrete results in only a few countries. Certainly, from the evidence of the country profiles, no country with serious land degradation has yet managed to control it.[2] Lack of trained staff (especially at the field level), and inadequate information, monitoring networks, and funding represent major constraints. In many countries, desertification has been exacerbated by fuel-wood collection, overgrazing, and poor land-use practices. In the field of drought monitoring and early warning, as well as of climate in general, regional initiatives include the establishment of a Climatology Network under AMCEN to provide a framework for action on climate-related issues. In light of the climate-related disasters experienced in the African region, it has become important, especially for countries affected by drought, to adopt policies and programmes to minimize the impacts of these disasters.[3]

[2] Regional co-operation in the field of land degradation has also been strengthened either directly through subregional institutions such as IGAD, SADC, and CILSS, and the African Development Bank (ADB), or indirectly through the institutes for applied research with the Consultative Group on International Agricultural Research (CGIAR).

[3] As part of the Climatology Network and under the World

Deforestation. Successful measures to prevent deforestation and to meet the need for fuelwood and other woodland products have been adopted through large-scale planting managed by Governments or companies for commercial timber production. For example, in Swaziland, one village that was given a plantation by the Government sold the timber with considerable returns (SARDC, 1994). Tanzania has built on traditional views regarding tree rights to install legal instruments to protect tree ownership. On the strength of this law, virtually every smallholder in the village planted trees along field boundaries, tempering escalating local conflicts over land access (SARDC, 1994). Attempts to reduce deforestation problems with fuel-saving stoves have, in general, not been successful in the Sub-Saharan region. This is primarily because fuelwood use is not the major cause of deforestation and also because the stoves were not appropriately designed or promoted. In rural settings, the actual consumption of fuelwood was not significantly reduced because the stoves could not be used for other purposes, such as heating and lighting.

The region has several innovative wildlife management strategies, such as game ranching and community-based management schemes, offering promising and practical alternatives to the standard approaches to wildlife conservation. Many of these are pioneered in southern Africa, such as the Communal Areas Management Programme For Indigenous Resources (CAMPFIRE) in Zimbabwe, launched in 1987; the Administrative Management Design for Game Management Areas (ADMADE) in Zambia; and the Selous Conservation Programme in Tanzania. The establishment of natural history museums and botanical gardens is also significant in conserving and documenting biodiversity.

Water-related issues. Countries are aware of the key role that is played by freshwater resources for future economic and social development. There is considerable activity to develop national freshwater strategies, basin plans, and demand studies. In Africa, policy-setting focuses on water assessment, integrated watershed management and development, water supply and sanitation, recently established transboundary water commissions, and economic instruments are being used to encourage conservation in some countries (SARDC, 1994, 11). Solving water-related issues is an important priority and includes providing sustained water and sanitation services to all people. Some examples of successful rural water supply and sanitation projects are found in Burkina Faso, Mali and Togo, featuring drilled wells with hand-pumps. Two examples of the most successful rural sanitation programmes in the region can be found in Lesotho and Zimbabwe (Ohlson, 1995). But future development of water-related issues would hinge on availability of appropriate technology, facilities, and management to harness available water. Water issues could be problematic because of the uneven distribution of freshwater resources and increasing demand for water for various activities such as agriculture, fisheries, mining, industry, and tourism.

Actions are also being taken at the sub-regional levels in the management and use of international waters and their basins. Only a few international river basins have been managed effectively through cooperation among riparian countries. One example of an important initiative is the Nile Basin Action Plan.[4] Many countries have developed their own energy policies. But at the regional level, cooperation in the energy sector is being forged in the framework of the African Energy Commission, a Ministerial Commission. This Commission is supported by the African Development Bank (ADB), ECA, and OAU with a goal to harmonies and coordinate the developments of the energy sector in Africa. There are also ongoing activities to develop hydroelectric power for common river basins through regional cooperation. Examples are the Gambia, Mano, Niger, Nile, Senegal, and Zambezi rivers. But the policy direction of Africa is to promote environmentally sound energy systems by ensuring that policies and policy instruments support and stimulate effective actions. These include developing and strengthening regional, sub-regional, and national legislative instruments on energy within the context of national environmental conservation programmes.[5]

Coastal and Marine Areas. With regard to coastal and marine areas, countries have various regulations

Climate Impacts and Response Strategies Programme (WCIRP), UNEP established a Climate Impacts and Response Strategy Network for Africa (CIRSNet/Africa) to share information and experiences to facilitate the development and implementation of climate-related activities, particularly climate change-related activities in the region.

[4] This has five main components (integrated water resources planning and management; capacity building; training and assessment; regional co-operation, including harmonisation of legislation and joint projects; and environmental protection and enhancement) and promotes a comprehensive and co-operative framework for the basin. Another is the SADC Protocol on Shared Watercourses Systems negotiated by 11 of the 12 members of SADC and signed so far by nine countries.

[5] Some of the most important issues to be addressed through regional policies and co-operation include reducing

in place to control activities in the areas of investment, fishing practices, oil spills, and withdrawal of coastal ground water. Environment Impact Assessments (EIAs) are mandatory for development projects in coastal zones. Some examples of regional initiatives on coastal and marine areas include the Regional Seas Programmes, such as for the West and Central African (WACAF) region and for the Eastern African (EAF) region. Also, there are agreements for management of coastal resources, such as the Eastern African Convention on the Protection of Coastal and Marine Environment. In general, the implementation of these regulatory measures has not been all that successful because of lack of coordination among various authorities; overlapping mandates of various institutions; and lack of resources, including skilled staff and financial and technical resources to enforce the laws. Existing local and national environmental policies are often compromised for the sake of short-term economic benefits, and the implementation of development projects often takes place without adequate environmental consideration (UNEP, 1996). As far as oceans, seas and coastal areas are concerned, there are efforts to prepare ocean or coastal management plans in Africa. However, at the same time, coastal erosion and pollution, urban development, and the lack of coordination are militating against progress.

Wastes and hazardous matters

This is an area where progress has been significant in many countries world-wide. Overall, the technical capacity to manage waste in African countries is low, but there is indication of an effort to control the use of agricultural chemicals and develop information systems for hazardous waste in some countries. In addition, in a few countries individual municipalities have conducted solid waste and sewage treatment pilot projects and are encouraging recycling. Constraints are generally related to issues of urban and integrated land planning and costs. In the case of hazardous wastes, progress has been undermined partly because appropriate technologies for storage are not available. An important regional agreement that deals with hazardous waste problems in Africa is the 1991 Bamako Convention on the Banning of Trans-boundary Movement of Toxic Waste. Importation of any hazardous wastes into Africa is outlawed under the Convention. Twenty-two countries are signatories and at least 10 countries are Parties to the Convention. But it is important to underscore that pollution from transportation remains a major problem in most urban areas. Carbon monoxide emissions, which continue to increase, are relevant for all countries. Less action has been taken in this area in Africa. But efforts are being made to develop strategies for the protection of the atmosphere and to conduct studies on energy substitution, air pollution, and the impact of climate change and adaptation to it. The most common concerns were related to pollution from transportation and the terrestrial and marine impacts of climate change.

Population, human settlement and health

In the area of demographics, it is clear that the 1994 United Nations Conference on Population and Development has had a positive influence on policies and planning in almost all countries. The common activities in this area include family planning, the active involvement of women in decision-making and regional settlement. Nonetheless, countries are generally not completely satisfied with the results on population issues. For many African countries, progress in these areas would depend on institutional development, research and information dissemination.

All countries have undergone urbanization, and the 1996 United Nations Habitat II Conference in Istanbul helped define issues and crystallize action in the area of human settlements in all regions. African countries are, however, at the early stage of urbanization, with relatively low urban proportions but high rates of urban population growth, leading to severe strains on urban areas and resulting in environmental degradation and urban sprawl. Priority is being given to the provision of housing, infrastructure, particularly improved sanitation, and the protection of open spaces.

In the area of health, some countries in Africa have experienced some improvements in the areas of life expectancy and infant mortality. There appears to be a movement towards integrated health policies, that is, health policies in combination with policies on poverty, education, human settlement, freshwater and waste disposal. But the least developed countries are struggling to have tangible results. On the whole, there appears to be a need for multi-agency strategy development, integrated programmes, and partnerships with major groups, including women, non-governmental organizations and the private sector (UNEP, 1996, 5). But as far as consumption patterns are concerned, efforts of African countries are largely to meet basic needs, but outside this, steps are being taken in individual countries to promote reduced energy consumption, improve nutrition, and rationalize resource use.

the pressure on natural vegetation cover through the development and use of alternative sources of energy and developing the energy potential of common river basins through systematic co-operation between riparian states to speed up sustainable development and economic integration.

United Nations organizations and international cooperation

The response of the United Nations system and the international community to sustainable development efforts in Africa has been one generally characterized by handicap. After Rio, there has been rapid growth in requests from developing countries and countries in transition for financial and technical support of initiatives related to implementing the objectives of Agenda 21. This created pressure for activities and projects leading to some results. Among other things, there has been increased support for model projects that help test and refine best practices.[6] The United Nations system, through the Inter-Agency Committee on Sustainable Development (IACSD) and UNDP, has therefore sought to promote an integrated approach to national strategies for sustainable development as a vehicle, inter alia, for relating capacity-building needs in different disciplines and sectors. UNDP's Capacity 21 Programme is intended to promote capacity building in relation to developing and implementing national strategies. Attempts were made to relate these to other exercises, such as that of the Country Strategy Notes or that of the World Bank-IMF Country Policy Frameworks, to ensure that a single framework is used for all country level activities.

Ironically, the period after UNCED has been characterized by stagnation in growth, if not reductions, in the regular budgets of most UN system organizations. This trend has not matched the increased demand and expectations in the implementation of sustainable development. New demands stemming from UNCED cannot be fully accommodated within existing resources. For most organizations, the level of extra-budgetary funds for Agenda 21 related activities have not increased. Therefore, agencies have been hard pressed to carry out both their mandated responsibilities and new responsibilities under UNCED. Even then, it has been further noted that where there has been some growth in extra-budgetary resources for sustainable development initiatives, such resources were, in most cases, earmarked for programmes of interest to donors. In effect there has often been disproportionate funding for certain countries and regions, for certain substantive areas, and in relation to particular functional activities.

Cooperation between UN organizations and the World Bank has grown substantially, for example in such areas as health, freshwater and food security. The Global Environmental Facility (GEF) is another example of improving cooperation between UN agencies and the World Bank for the purpose of providing financing to achieve the global environmental benefits in the areas of biodiversity, climate change, international waters and ozone layer depletion. The GEF was restructured by Participating States in 1994, with $2 billion pledged to its Trust Fund. It operates on the basis of collaboration and partnership among its Implementing Agencies, (UNDP, UNEP and the World Bank), as a mechanism for international cooperation for the purpose of providing new and additional grants and concessional funding to meet agreed incremental costs of measures to achieve global environmental benefits in the areas of biodiversity, climate change, international waters, ozone layer depletion, and possibly land degradation as it relates to the other four areas. As far as international cooperation and trade is concerned, there is general support for further liberalization and expansion of world trade and the establishment of a common institutional framework under the World Trade Organization. In Africa, there is commitment to the restructuring of the economy to encourage trade, fiscal reform, and a stronger private sector. International cooperation has allowed these policies to be implemented, but countries are still confronted with debt problems and difficult external trading conditions. Also, a number of countries are benefiting in regional economic integration arrangements in the context of trade expansion.

In conclusion, it is clear that progress in the implementation of Agenda 21 is "not much to write home about". Some spirited efforts have been made to set the process in motion. Activities have been prominent and alive at all levels — national, regional and international. But the results of actions could only be described as unpretentious in all areas because of various hindrances. The forces emanating from the weak socio-economic structures of African countries and the international environment have acted as powerful friction in the wheels of progress. At the national level progress in sustainable development is hindered by the shortage of skilled staff, paucity of training facilities, lack of integration and cooperation among institutions, inadequate information and incomplete integration of all stakeholders into sustainable development programmes. Also, sustainable development has been eroded as a result of some unintended counter-productive government policies. At the regional level, progress in sustainable development has been retarded as a result of weak coordination. There is undue duplication of effort and waste of scarce resources. Also, lack of commitments of countries to full participation in regional initiatives or programmes have not eased the process of sustainable development. In addition, the lack of financial

[6] The criteria for the selection of projects include (a) response to a real need in the country; (b) demonstration of significant economic, social or environmental benefits for the end-user; and (c) demonstration of governmental commitment and the infrastructure necessary for the project to have enduring results.

resources to support programmes poses enormous difficulties. At the international level, the major difficulty arises from inadequate and unpredictable funding of programmes in African countries. At the same time, the special interest of donor countries in some countries and sustainable development programmes has not made the judicious allocation of funds for sustainable development in Africa easy for multilateral organizations. All these problems would need to be more closely examined and appropriate solutions found in order to take sustainable development forward in Africa.

ODA FLOWS TO AFRICA

For the purposes of this paper, ODA is defined as the flows to developing countries by official agencies, including state and local governments, or by their executive agencies. The main objective of these flows is to promote economic development and alleviate poverty in developing countries. ODA is assumed to be concessional in character and contains a grant element of at least 25 per cent (based on a standard 10 per cent discount rate).[7] ODA includes both grants (inflows of unrequited transfers from official sources) for current and capital expenditures and disbursements of concessional loans.[8]

In the context of this definition, ODA flows to Africa have declined precipitously over the last two decades. This has taken place while internal developments in many African countries seem to have argued for steady increases. For many African countries, there has been an increasing need for foreign aid to assist in the development of social and economic infrastructures as they implement structural adjustment programmes and at the same time endeavour to meet their obligations in the promotion of sustainable development. The international community has also recognized the need to assist developing countries to overcome the limitations to development and their fulfilment of international development obligations. This was, for example, first illustrated in the ODA target of 0.7 per cent of GNP as recommended by the Pearson Commission in 1969. This was adopted by a resolution of the General Assembly in 1970. Annex table 1 illustrates the pattern of bilateral flows to African countries.

It is clear from the table that there has been a serious decline in bilateral ODA from DAC countries during this decade. Total bilateral disbursements to African countries were $16.7 billion in 1991. This fell to $13.6 billion in 1993, but rose to $14.5 billion in 1994. Thereafter, there has been a steep decline, falling to an all time low of $11.4 billion in 1997. The major recipients include Egypt, Mozambique, Tanzania, Morocco, Kenya, Ethiopia, Zambia, Ghana, Côte d'Ivoire, Senegal and Cameroon. Indeed, the trend in decline is also manifested when disbursements from other bilateral donors (Annex, table 2) are included, from $25.2 billion in 1991 to $21.5 billion in 1993, rising to $23.5 billion in 1994, but thereafter steeply declining to $18.7 billion in 1997. It will be observed that the flows to the America region during this period experienced some improvements. Total flows to the region in 1991 were about $6 billion. This fell to $5.6 billion in 1993, but steadily increased to $8.1 billion in 1996 and fell to $6.3 billion in 1997. During this period, it could also be observed that the flows to East and Central European countries did not experience significant decline. The average annual flow was $6.4 billion. There was a remarkable rise to $8.4 billion in 1995. However, Africa's share of total disbursements during this period did not experience major decline. The average annual share was 27.7 per cent. A high share of 29 per cent will be noted for 1992. This fell to 27.5 per cent in 1993, but rose to 29.3 per cent in 1994 but declined thereafter.

Thus, it could be observed that, contrary to expectations, bilateral flows to African countries have declined in the years after Rio. This has been a trend that has raised serious questions about the commitment of the developed countries to assist developing countries in the fulfilment of their obligations of Agenda 21.

The declining trend in ODA can, however, be understood in the context of the changing political and economic situations in Africa and world-wide that have significantly impinged on the donors' decision-making process for foreign aid disbursements to Africa. Beginning from the early 1980s, donors began to emphasize the need for African countries to implement structural adjustment programmes as a condition for the disbursement of aid. It was argued that the full engagement of African countries in a market economy would facilitate the absorption and effective utilization of foreign aid. In response, over 37 African countries implemented structural adjustment programmes, essentially propounded by the World Bank and International Monetary Fund (IMF). These countries were themselves convinced that adjustment programmes were needed to halt economic recession and to promote economic growth. By the mid-1980s many African countries had added the dimension of sound democracy, which they perceive as essential for sustainable economic growth. But the subsequent unfortunate events in a few African countries apparently changed the perception of the donors. The wars in the Horn of Africa embroiling Somalia, Ethiopia and Eritrea resulted in considerable human tragedy. Also,

[7] UNDP/The World Bank (1992, 307).

[8] Given the varying sources and definitions of data, the ODA flows in this section will not equal those that could be calculated by adding net disbursements of official concessional long-term loans and net official transfers.

the wars in Rwanda, Burundi Congo, Liberia and Sierra Leone caused enormous human and material losses in these countries. These wars shifted the attention of donors to emergency relief efforts in the countries concerned and in the neighbouring countries hosting refugees and displaced persons. At the same time, the feeling that the crises of these countries could have demonstration effects in other African countries did not encourage the flow of traditional ODA to them. In other words, the absence of wars could have aided the flow of ODA to Africa while most countries were committed to the implementation of structural adjustment programmes.

Furthermore, by 1990, the whole world witnessed an unexpected collapse of the former Soviet Union and consequently a reduction of East-West tensions. Prior to this, in 1989, the Berlin wall collapsed and brought about the unification of Germany. Although this development brought about a reduction in military expenditures by the developed countries, this has not translated into increases in the flow of resources to needy developing countries. This was the case because the collapse of the Soviet Union was accompanied by the severe erosion or demise of socialism in most developing countries. At the same time, the geographic strategic importance of many developing countries became less significant. This, in effect, reduced foreign aid to many developing countries, including those in Africa.

One important related development, with significant influence on the flow of aid to Africa, has been the effect of the emerging states in Central and Eastern Europe. The West could not look the other way but gave necessary support to the fragile market economies and democracies of these new states. Thus, the support of the developed countries to the economies in transition amounted to an erosion of the flow of aid to African countries. At the same time, the transition economies, most of which had hitherto been members of the Council for Mutual Economic Assistance (COMECON) and had in the past provided financial aid to African countries, reduced their flows to Africa to apparently negligible sums while they were confronted with major internal development needs. Generally, these states emerged into a market economy system severely handicapped, as they needed to consolidate macroeconomic policies, strengthen their infrastructure and rejuvenate their industrial sectors.

Another important factor accounting for the fall in bilateral aid to Africa has been the increased stringency among donor governments to reduce budgetary deficits at home. More stringent budgetary discipline has been motivated by the accumulation of debt from large deficits during the 1980s, concerns over the impact of high levels of expenditure and taxes on economic activity, and agreement to reduce fiscal deficits as a condition for attainment of monetary integration in the European Union (World Bank, 1999, 71).

Yet another important factor that seems to have undermined bilateral aid in the 1990s has been "aid fatigue" in the developed countries. As from the early 1990s, many developed countries began to show concern about the results of several decades of aid flows to African countries. The poor results from aid in the past were deemed to have occurred as a result of the inadequacies of the aid environment in African countries: weak economies as a result of weak economic policies, mismanagement, corruption and poor coordination of aid etc. While this view was held in many countries, foreign aid to Africa declined. Most developed countries hold the view that these problems should be addressed adequately by African countries if more aid is to flow into the continent. With the absence of African pressure groups within the developed countries, this view has not been seriously challenged.

Multilateral Flows

Annex table 3 presents the pattern of multilateral flows to African countries from 1991 to 1997. It is also obvious that there has basically been a declining trend. Total multilateral flows amounted to $8.8 billion in 1991. This rose to $9.7 billion in 1992 but thereafter declined from $9.1 billion in 1994 to a low of $6.8 billion in 1997. This is in sharp contrast to the trend in the Eastern and Central European region or the economies in transition. In 1991, multilateral flows to the region were $2.5 billion. This rose to $3.5 billion in 1993, $4.1 billion in 1995 and a record level of $6.5 billion in 1997, or a three-fold increase during the 1991-1997 period. A similar increase is also manifested in the America region, from $2.9 billion in 1991 to $5.6 billion in 1997, with a low of $1.3 billion only in 1992. The Asia region maintained the biggest amount in total flows, experiencing a big leap to $14.3 billion in 1997 from $9.1 billion in 1996. The share of Africa of total multilateral flows diminished substantially over this period, from 35 and 40.1 per cent in 1991 and 1992 respectively, but thereafter declining to 31.1 per cent in 1993. It rose to 33.5 per cent the following year, but declined to 30.7, 25.4 and 19.5 per cent in 1995, 1996 and 1997, respectively.

The trend in the flow of ODA from multilateral institutions has been largely dictated by the policies of these institutions and contributions received from donors. By the late 1980s environmental impacts carried considerable weight in the programmes and projects of bilateral donors. This development was accorded greater impetus by UNCED and the plan of action laid out in Agenda 21. Thus, the 1990s witnessed a new dynamism in bilateral agencies with respect to support for environmental sustainable development goals. This has been characterized by increased efforts among bilateral donors to work together towards coherent approaches to contribute to environmental sustainability through aid policies and

programmes and increased attention to integrating environmental concerns at the institutional, policy and programme levels (United Nations, 1996, 37).

It will be noted that beginning with the early 1990s, OECD countries' foreign aid policies towards developing countries have been designed to promote sustainable and broad-based economic growth. The emphasis is on the stimulation of productive energies through investment in people and on participatory development. Foreign aid was directed to environmentally sound and sustainable development and the reduction of population growth. However, by the mid-1990s, in view of the changed situation in Africa, special emphasis was attached to averting conflict (OECD, 1994, 108-109). In addition, developing countries were expected to have implemented economic policies, including structural adjustment and good governance through the promotion of democracy. These policies are complementary to the promotion of sustainable development. They should be useful to the extent that they are harmonized with the policies designed for the promotion of sustainable development in African countries. Also, the flow of aid to African countries through multilateral institutions would depend, among other things, on convergence of the objectives and strategies of multilateral institutions with those of African countries for the promotion of sustainable development in African countries.

The issues of policies and programmes have been approached from both a cross-sectoral and global point of view. The review and evaluation of emerging trends and assessments of their effectiveness is another feature of the commitment among bilateral donors to the pursuit of environmental and sustainable development goals. As far as many bilateral agencies are concerned, the concept of sustainable development now serves as the guiding principle of development cooperation at the policy, programme and project levels. The ramifications of global environmental issues for development processes have received increased attention and are increasingly taken into account in the design, monitoring and evaluation of projects. In the follow-up to UNCED there has been increased coordination of efforts among aid agencies and other departments of ministries concerned (United Nations, 1996, 37).

Clearly, multilateral institutions have advantages for better foreign aid deliveries in African countries, through better coordination, freedom from aid tying and diverse technical support, to mention a few. The 1990s have shown an even sharper decrease in the channelling of aid through the multilateral institutions. Some of the reasons that appear to explain this are to be found in the reservations by the developed countries about the nature and style of operations of most of the important multilateral institutions. Many are considered too large and because of this it has been argued that the greater part of the resources received by them are consumed by the bureaucratic process rather than by programme implementation. The United Nations and most of its agencies, including UNDP, UNEP, etc., that are responsible for the implementation of sustainable development have been affected by this development. There is demand for restructuring and the streamlining of these bodies; effectively downsizing to save costs. The process of restructuring has begun, but contributions to these bodies have yet to increase to enable them to carry out their international obligations of facilitating the implementation of Agenda 21 in developing countries, particularly those in Africa.

CRITICAL ISSUES IN ODA AND SUSTAINABLE DEVELOPMENT

African countries have individually and collectively made some progress in the implementation of Agenda 21. The international community has, at the same time, provided some support in this direction to complement the efforts at the national, sub-regional and regional levels in Africa. However, it is clear from the overview of the performance of the continent that the road ahead towards the attainment of sustainable development is still fraught with difficulties. The weak economic position of many countries and the limitations which they continue to encounter in a rapidly globalizing world economy suggest that appropriate action should be taken at all levels to consolidate the gains made and accelerate the movement towards sustainable development. The dynamics of sustainable development should be carefully identified and consolidated, especially in the area of resources.

Halting and Reversing Declining ODA

In the context of the present state of sustainable development in Africa there is an urgent need to halt and reverse the present declining trend in ODA flows. This has clearly emerged as one of the major problems confronting policy-makers and administrators in African countries as they attempt to implement the programmes of Agenda 21. The decline in ODA should be arrested in order to give a new life to the process of sustainable development. But this exercise can only be done by coming to full grip with the fundamental problems posed by Africa's aid management, the transformations in the world economy and the responses from the international community.

Aid management and ODA

One factor that donors seem to utilize to explain the reduction in the flow of aid to African countries has been the internal situation in African countries. The internal environment appears to some to be not right to justify increases in the disbursements of more aid to African countries. Among other things,

the weak economic performance of many countries has been cited as a discouragement for the inflow of aid. Poor aid coordination and management have been limiting factors. Also, corruption, as has often been stressed, has a negative impact on the allocation of aid to African countries. All these put together have culminated in what has been described as "aid fatigue" for Africa. The case for better aid coordination and management in recipient African countries cannot be over emphasized. This has been noted in several studies on aid to developing countries.

Poor aid management is linked to both institutional and personnel limitations. At the personnel level, there is a need for better commitment to aid projects. At the institutional level, relevant aid implementing institutions need to be free from political interference in order to function more effectively (Cassen, 1994, 117). A number of African countries have acknowledged the need for improvement in both areas. They have evolved policies to address corruption and mismanagement. They are developing better foreign aid institutions with relevant capacity and autonomy to ensure continuity in aid implementation and sound delivery of aid projects. The positive impact of foreign aid is likely to be more significant with better aid coordination and management. African countries therefore need to continue to strengthen their efforts to improve the environment for foreign aid in order to enhance its effectiveness for sustainable development. The efforts of African countries need to be complemented with support from donor countries since this development could, in the near future, assist in the termination of the need for additional aid. This apart, the more important cause of the decline in ODA flow to African countries emanated from the changing economic situation of donor countries.

Donor economies and ODA

At the external level, the decline in the flow of aid is to be found in the economic situation of donor countries, the financial limitations of the multilateral institutions and the changing circumstances in international relations. It was observed that increasing scarcity of fiscal resources was a major reason for the decline in ODA in the 1990s. Thus, most of the G-7 countries moved toward more restrained fiscal policies around 1993. Between 1993 and 1997, greater budgetary discipline was motivated by the accumulation of debt during the 1980s, concerns over the impact of high levels of expenditure and taxes on economic activity, and the agreement to reduce deficits as a condition of the European Monetary Union (EMU) (World Bank, 1999, 71). Also, donor countries generally take actions to ensure positive effects of ODA on their own economies, tying aid to purchases within donor countries or reducing aid expenditures outright when there is a need to ensure a balance in the balance-of-payments accounts. Aid tying, as has been noted in various studies, has reduced the volume and value of aid to developing countries. The basis has been challenged and the call made continuously for donor countries to make a distinction between aid and trade. The ability of recipient African countries to utilize aid for purchases at the cheapest source would enhance the value of aid. Outside this, the decision of the donors to disburse ODA during the 1990s has also been greatly influenced by some surprising developments.

International developments and ODA

Events in the international economy are in most cases beyond the control of individual countries. The implications of a positive or an adverse development can be far reaching for ODA flows out of any economy depending on its strength and extent of integration into the world economy. The recent developments in international relations have redefined the interests of developed countries away from African countries. Contrary to expectations, the collapse of the Soviet Union in the early 1990s did not yield a "peace dividend", that is, it did not lead to a reduction in the arms race and a corresponding increase in the flow of aid to developing countries. The collapse resulted in the loss of strategic and political importance of many countries in Africa to the developed countries, both of which had been reasons for aid. The emergence of new and weak democracies in Eastern and Central Europe drew the attention of the developed countries to their development needs. These new democracies and their embryonic market economies needed to be supported in order to be consolidated and integrated into the world economy. African countries also lost aid from most of the Eastern and Central European countries as their resources were concentrated on national economic growth and development. In addition, wars in some regions of the world, such as in Europe, the Middle East and Africa, and natural disasters led to a reduction in development aid during the decade. For example, the share of ODA for emergency assistance required for natural disasters and recovery from civil war increased from about 5 per cent in 1990 to 9 per cent in 1994 (World Bank, 1999, 72).

In other words, new developments in international relations, especially those involving human tragedies, have acquired more importance than the global commitment to partnership for development, including those of sustainable development. Conflicts are inherent in human nature and are part of the characteristics of human society. The necessity for containment and resolution does not elicit any debate when the loss of human lives is involved. But the question is whether this should be at the considerable expense of the promotion of sustainable development. Sustainable development by itself represents an important

ingredient towards peace and security in the long run. The international community may therefore need to address emergency global crises without unduly compromising the financial support for sustainable development.

The decline in ODA has been the single-most major blow to the serious advancement of sustainable development in Africa. The financial demands of Agenda 21 are huge. The implementation process began during the first half of the 1990s at a time when most countries in the continent started to recover from the long economic recession of the 1980s. The structural adjustment programmes implemented by African countries to this end also strengthened the need for increases in the inflow of financial resources. While these countries were confronted with the obligation to consolidate the gains in structural adjustment, they were at the same time handicapped by the paucity of autonomous internal financing, declining external trade as a result of the decline in the price and demand for major commodity exports, as well as adverse weather conditions. Also, those countries emerging into industrial production are confronted with the problems of access to the markets of the developed countries. Given these developments and requirements of African countries, the decline in ODA that occurred during this decade cannot be sufficiently justified. Again, some of the reasons for the reduction in disbursement of aid by the donor countries to African countries to adequately meet sustainable development needs are not highly convincing. The political and socio-economic situations in many African countries have improved substantially over the years to encourage increases in ODA. The case for increases in ODA flows to Africa cannot be stronger given the development partners' various pronouncements and commitments to international development and assistance to developing countries, especially those in Africa. African countries require significant increases in ODA in the short-run to establish the structure for the promotion of an enduring sustainable development.

Support for the Development Process

The promotion of sustainable development is intricately linked to overall development in Africa. A stable political environment and steady economic growth will facilitate the implementation of measures under Agenda 21. In this connection, concerns are in the areas of consolidation of democratic processes and the cessation of hostilities in the countries experiencing conflicts. At the economic level the issues concern keeping on track sound macro-economic policies and consolidating the gains of structural adjustment.

Political stability

At the political level, it has been observed that many African countries have in the last two decades engaged in meaningful programmes to establish democracy. In the past five years, thirty countries have put in place multi-party structures, conducted elections and established governments on the basis of popular participation. South Africa has abolished apartheid. Decentralization and community participation, stimulated by more open communication and free press, are on the increase in many countries. Governments in African countries are taking action to tackle endemic and systemic political problems such as corruption, mismanagement, denial of human rights, and lack of accountability in order to promote good governance. But all these require huge sums of money to address the legal and institutional arrangements to support these efforts. The financial resources of many countries to adequately address these issues are limited. There are constraints emerging from poor internal revenue arrangements as well as those imposed by the international economic environment. There currently exist a number of programmes, both bilateral and multilateral, to support the democratic process in African countries. For example, there is the UNDP Programme for the promotion of good governance in Africa. Additional financial and technical support is required by these countries to enable them to nurture and consolidate the incipient democratic process. Democracy could falter and spill-around, with all gains made thus far lost, if additional and adequate financial and technical support is not given to these countries. Conversely, the transition to a more open society, through the empowerment of the people at local and national levels, will facilitate environmental management.

The case of those countries that are in conflict or just emerging from conflict presents more difficulties. The difficulties are in the areas of refugees and internally displaced persons. In addition, these countries are confronted with infrastructure problems of large proportions. The international community has in the past responded to the problems of these countries at both bilateral and multilateral levels. However, it is clear that there is still a gap between the needs of these countries and the support received from all sources from the international community. The countries in crisis, or just emerging from crisis, are generally in a unique position to effectively address these issues and at the same time confront the promotion of sustainable development.

The international community has encouraged and supported the democratic process in Africa in the past. The donors and UN agencies such as UNDP have provided technical support to many countries in the region. However, while this has been very useful, it has generally been deficient and unpredictable. In effect, most democracies on the continent remain highly vulnerable. Sustainable development is incompatible with political instability. The social, environmental, and economic impacts of political instability

are immense, as illustrated by the tragic events in Liberia and Rwanda. The political atmosphere must be supportive of environmental measures in order to promote sustainable development. The measures of sustainable development can be effectively implemented only through stable political institutions that provide the legal and institutional frameworks. There is a need for significant increased support for this group of countries. Political breakdown and civil strife could make sound environmental husbandry virtually unattainable.

Economic growth

At the economic level, the overall economic growth of African countries still remains very modest even though a turn around has been made in the recession that dogged growth and development. The implementation of structural adjustment programmes by many countries has assisted in the arrest of recession and facilitated the creation of a framework for further growth and development. The international community that has been instrumental to this process has provided support over the years. But it has been clear that the support has generally been inadequate and as a result there are possibilities that the growth process could stagnate and poverty could be accentuated. Nevertheless, it is abundantly clear that further economic growth and the promotion of sustainable development in these countries could be seriously undermined unless immediate action is taken to consolidate the achievements made so far and redress the critical impediments to economic growth. In the first place, continuous support is needed from the international community to African countries in their efforts to implement macroeconomic policies for durable economic growth and to integrate Agenda 21's environmental measures into national economic policies. This is undoubtedly a precondition for the implementation of environmental measures in African countries. Among other things, there should be strong support for measures designed to mobilize internal resources, for example, through reforming taxation systems, to support economic growth. The prospect of strengthening economic growth in Africa presents a promise of greater resources for the management of the environment.

The trends in external trade of African countries pose considerable difficulties for the promotion of sustainable development. The declining share of African countries in world trade was due, among other things, to a lack of access for the products of African countries into the markets of the developed countries. There is an urgent need for the developed countries to remove all impediments, administrative or quota, which hinder the exports of African countries. At the same time, there is a need for the diversification of exports of African countries to expand their export base and enhance export exchange earnings. The increase in foreign exchange earnings of African countries constitutes the most important factor for the independent promotion of sustainable development. The international community should assist the expansion of external trade of African countries in order to build an autonomous base for sustainable development and reduce dependence on ODA.

It is also clear that growth and the promotion of sustainable development in many African countries has significantly been undermined by the burden of external debt. External debt servicing for many countries has reached disturbing levels. As of 1996, the debt service-export ratio (ex-post) for the continent was 17 per cent. But for some countries such as Burundi and Somalia, it was over 50 per cent whereas for a few countries, such as Comoros and Congo Democratic Republic, it was about 3 per cent (World Bank, 1998, 180). There is an urgent need to address this problem in the context of the importance of sustainable development. The existing external debt strategies including, in particular, the Heavily Indebted Poor Countries Initiative (HIPC), are still inadequate for providing quick relief which most of these countries need for increases in resources to tackle effectively the measures on environment and development. The international community should therefore, as a matter of urgency, consider the possibilities of the cancellation of the external debt of the least developed countries as an option to enhance the capacity of these countries to meet their obligations of Agenda 21.

Diminishing ODA implies a covert denial of support for the development initiatives, both political and economic, in African countries. Democracy and market economy processes are in the formative stages in most African countries, excluding those experiencing conflict. These processes, which are mutually complementary, are weak and vulnerable. They will need to be well nurtured and strengthened to prevent their reversal so that they can effectively contribute to the process of sustainable development. Thus, the development process in African countries could be weakened and the promotion of sustainable development compromised if sufficient support is not forthcoming from the international community. The structures of democracy and economy must be sound to give support to sustainable development. But then the more problematic issues are in the extent of the contribution of ODA to basic areas, such as capacity building, for putting in motion the process of sustainable development.

Capacity Building

The failure to develop adequate manpower in African countries has made capacity building a major objective. Skilled manpower is lacking in many highly technical areas of development in this era of advanced technology and innovative approaches to de-

velopment. African countries have, since the attainment of independence, been engaged in the improvement of this sector. It will be recalled that at independence most countries inherited very little skilled manpower. Governments of African countries have developed educational policies and programmes to address this problem. But sufficient progress is yet to be made in many countries for reasons of lack of financial resources to meet the requirements. It was noted that the implementation of Agenda 21 requires a full complement of skilled manpower at various levels and capacities. This has been well recognized in Agenda 21, especially as far as the developing countries are concerned. It was for this reason that many developed countries and multilateral institutions have provided support. Some countries have, through special programmes with African countries, sporadically assisted in the training of Africans. For example, UNDP under "Capacity 21" has made significant efforts in this connection. Also, other UN agencies and organs, including UNESCO and ECA, are involved in capacity building in Africa. But the efforts of these organizations to effectively assist African countries seem to have been weakened by reduced funding from donors.

Thus, as it is today, achievements in this area are still far from satisfactory for many countries in terms of the enormous and diverse technical issues associated with all aspects of Agenda 21. The process of building a robust base of skilled manpower for the implementation of Agenda 21 is still constrained, among other things, by inadequate funding. For the promotion of sustainable development on a long-term basis, the educational structure, including the education curriculum, needs to be strengthened. Educational institutions need to improve qualitatively. Additionally, more technical institutions need to be established in African countries to train Africans. The process towards sustainable development in Africa could be severely retarded unless sufficient ODA is received by African countries to complement internal efforts at capacity building.

Institutions

Traditionally, the process of development in African countries has entailed the establishment of development institutions for policy implementation. The adoption of Agenda 21 imposed obligations on all countries to have in place the relevant institutions to translate environmental measures into reality. This calls for the strengthening or creation of environmental institutions. It also calls for cooperation and harmonization of objectives and strategies among these institutions. Many African countries have made spirited efforts in this area since the adoption of Agenda 21. However, as it stands today, the progress made in this area varies from one country to another in the continent depending on the level of development. Some have made remarkable progress while others may be said to be at low levels on this issue. Generally, however, there still exists a gap between sustainable development requirements and available institutions. The consolidation or creation of environmental institutions, among other things, has suffered from the lack of resources. There have been constraints in the efforts by African countries to adequately and autonomously finance these institutions. The decline in foreign exchange earnings and poor internal revenue collection has constituted significant impediments in this connection. At the same time, efforts in this direction could not be pursued, particularly with the decline and unpredictable receipt of ODA.

Thus, given the current difficulties of many African countries to finance the relevant environmental institutions, there is a need for increased support from the international community. African countries should, from the outset, be sufficiently assisted in the creation of appropriate institutions to implement Agenda 21. Without adequate and strong institutions, Africa's attempt to complement global sustainable development could be seriously compromised. The international community should therefore increase technical and financial support to African countries to facilitate rapid development of environmental institutions.

Technology

Technology represents a vital factor in the process of development. For many countries in Africa, it is the critical missing link in development efforts. Thus, African countries have, in this domain, engaged in the formulation of appropriate policies for the development of technology. The development of indigenous technology and the encouragement of technology transfer have been considered most practical for rapid development. But these, among other things, entailed information and finance which have been scarce for most countries. The importation costs of technology have, in many cases, been out of reach for many developing African countries. The implementation of many aspects of Agenda 21 requires application of appropriate and some new forms of technology. It is clear from the efforts made so far in the implementation of Agenda 21 that the paucity of appropriate technology has posed some difficulties. This could reach monumental proportions by the time more incursions are made into the complex areas of Agenda 21. The problems associated with appropriate and new technology in Africa are many. These range from the deficiencies in domestic policies to the paucity of funds.

Thus, the limited progress in sustainable development could be interpreted in the context of these overwhelming factors, namely, the precipitous decline in ODA and the weak internal economic situation,

making it difficult to mobilize resources for rapid implementation of the programmes of Agenda 21. The decline in ODA derives from several negative influences that emanate both from donor and recipient countries. The decline in ODA has, on the whole, weakened the efforts made by African countries, both individually and collectively, to promote sustainable development and raised serious questions about its future. The present weak economic conditions in many countries also derive from a weak domestic economic policy base and deleterious international economic influences. But it is clear that the process of sustainable development in Africa is now at a critical phase. The process runs the risk of coming to a standstill if business is carried out as usual. There is a need for more imaginative approaches. The decline in ODA should be halted and reversed and a new impetus provided to the process of sustainable development in Africa.

TOWARDS PROGRESS IN ODA AND SUSTAINABLE DEVELOPMENT

International cooperation for sustainable development in Africa cannot be business as usual in the new millennium if the objectives of Agenda 21 are to be attained. The challenges of sustainable development in developing countries, especially those in Africa, are still enormous in view of the over 100 programmes that are to be implemented under Agenda 21. At the same time, the programmes being implemented so far are few compared with the progress made in other regions, such as Asia, Europe and Latin America. There is a need for Africa to have tangible results by Rio + 10 in the year 2002. But this could only materialize if new and more sublime methods are found to existing problems and new action plans laid out to address in a more integrated manner the diverse problems of ODA and sustainable development. The dynamics of ODA must be effectively harnessed to ensure that Africa will be fully part of the global sustainable development process.

National Level

If the flow of ODA is to significantly increase to meet the enormous demands of sustainable development in African countries, these countries themselves must continue to take all necessary internal measures to enhance its inflow. The commitment to the creation of the right environment would enhance the inflow of ODA. Among other things, better and innovative ways of harmonizing and coordinating policies would be a significant improvement.

Policy: Improvements in coordination

There is a need for progress and new methods in policy coordination in order to ensure a greater positive impact of ODA on sustainable development. African governments must intensify the integration of environment policies into national development policies. Efforts should be made to ensure effective harmonization of the interests of both bilateral and multilateral donors into national environment policies. There should be adequate coordination of policies among environmental institutions. The governments of African countries need, at the same time, to avoid the adoption of other national policies that may be counter-productive to environment policies. The effective coordination of policies is a precondition for sustainable development on the continent. The process of sustainable development could be severely constrained in the frame of non-complementary policies.

Institutions

The institutions on environment provide the structure for the long-term implementation of Agenda 21. One obvious observation from this study is that many African countries have not gone far enough in the establishment of appropriate institutions. There is a need for a renewed approach to tackle this issue. African governments should explore new autarkic ways of funding the consolidation or establishment of these institutions and make them functional. This could be done through new forms of taxation on environmental issues and support of the private sector. The support of the community must also be sought. Both bilateral and multilateral donors should be encouraged to provide sufficient technical and financial support for effective operation of environment institutions. One particular area of need of these institutions is in the training of a good complement of staff for their effective operation. The United Nations agencies, including UNDP, could assist in this area. This is the time to have the right institutions in place for sustainable development in African countries. The process of sustainable development could be unduly handicapped unless African countries and the international community take prompt actions.

Aid: Increasing effectiveness

In many parts of Sub-Saharan Africa, much has been done over the last decade and a half to liberalize prices, foreign trade, and the exchange system under structural adjustment programmes. Obviously, this has not been a small achievement not only in terms of the sacrifices, such as the social and political costs, made but also in the visible pickup of economic growth. New and innovative approaches must be devised to tackle, on a permanent basis, the problems of corruption and mismanagement that are primary sources of concern to many bilateral donors. There is a need for more transparency in the utility of commodity grants and concessional loans to public enterprises. Corruption and mismanagement have in many cases combined to lead to the unsatisfactory

completion of aid projects. Many African countries have already acknowledged the need for correcting these social ills. But the observation is that they are still a long way away from a satisfactory situation in these matters. There is therefore the need for more stringent laws and regulations to deter corruption and mismanagement. There is a need to develop a culture of a corruption-free society. The principle of accountability should be more unequivocally held as a high priority in the hierarchy of administration in African countries. The more sound the administrative process, which will also lead to better aid results, the more likely there will also be increases in ODA flows.

The effectiveness of foreign aid in the sustainable development process in Africa will also hinge on the judicious selection of projects for financing. Several measures have been proposed for implementation under Agenda 21 towards sustainable development. As it is, many African countries have commenced work in some key areas such as the creation of an appropriate legal framework, appropriate institutions and capacity building. In all of these areas, the desired satisfactory levels have yet to be attained to build the basis for sound sustainable development. It is necessary that African countries and donor countries work more closely to identify the critical levers in these areas that would ensure rapid positive demonstration effects in other areas of Agenda 21.

Full utilization of allocated ODA

Even though there has been a decline in ODA over the years, it has at the same time been observed that large amounts of allocated funds by OECD countries are not disbursed. The undisbursed proportion of allocated ODA should be more closely examined, as this represents a significant amount in total allocation each year and a loss to the promotion of sustainable development. The administrative, political and economic bottlenecks to full disbursement should be identified and appropriate solutions found. It is not uncommon that available grants or technical assistance have not been effectively utilized because of insufficient information. Doing this would lead to additional resource flows for sustainable development.

Regional Level

Regional institutions are important to the implementation of Agenda 21 and the attainment of sustainable development in Africa. Many environmental issues are transnational in nature and could best be solved collectively at sub-regional and regional levels. The regional development banks, intergovernmental organizations, and non-governmental organizations need to intensify their commitments to sustainable development in Africa. They should assist in the generation of additional ODA to African countries, while acting within their respective mandates. As it is today, the resource flows from regional and sub-regional development banks in Africa constitute a minute proportion of the overall ODA flows to Africa. This, to some extent, will be accounted for by the limitations imposed by the charter and defined objectives of the banks. In institutions where this is a major problem, efforts should be made for adjustments to accommodate sustainable development. Sustainable development issues should be more integrated into the development assistance policies to African countries. Broadening the base of ODA will enhance the possibility for steady increases in inflows and assure predictability in the implementation of the measures and programmes on sustainable development.

International Level

If African countries are to meaningfully carry out their obligations under Agenda 21, it is imperative that the international community, at both bilateral and multilateral levels, should effectively honour their commitments to provide additional resources on a timely basis.

Political will: the need for consolidation. The basic question in the flow of ODA to African countries is political will to support the development process. This has to be strong over time in order to ensure increases in inflows. Political will is generally related to expected results, either in terms of benefits to the donors or positive outcomes in the recipient countries. The decade of the 1990s has witnessed the waning of political will with some countries disillusioned about the impact of foreign aid in the development process in Africa. This tendency and view may not be sufficiently justified in the context of the various internal and external overwhelming negative factors that have frustrated the development process in African countries in recent years. However, in view of the spurt of economic growth in most countries in the last seven years, there is a cause for the emergence of stronger political will to support the development process in African countries. Sufficient ODA should be disbursed to African countries to enable the building of momentum for the take-off of sustainable development.

Aid constituency. The allocation of scarce resources to increasing competing demands in the developed countries entails both economic and political considerations. Actions taken by lawmakers on the allocation and disbursement of ODA in the developed countries could be influenced by the inputs of pressure groups. Negative pressure from the local constituency of lawmakers has generally had the result of limiting the flow of ODA. As it is presently, African countries lack the constituency to advocate for continuous and sufficient flow of ODA for sustainable development. Aid constituency is necessary to clearly articulate the importance of sufficient ODA flows in

the process of development in African countries. Aid constituency should be created to inform the public and the lawmakers in the developed countries of the positive impact of ODA and why it is only an exercise for the short-run which aims for the creation of the structure for durable development. The NGOs and multilateral institutions cannot do this alone for Africa. African countries should assist and get involved in the creation and operation of aid constituencies in the developed countries. Lawmakers need to be more effectively lobbied to arrest the decline in ODA.

Disbursements: adequate and timely. One of the original concepts of ODA to developing countries in the early 1950s sees it as filling a savings investment gap. In this context, it was envisaged that a sufficient inflow of foreign financial assistance, over a period of time, was what was needed to raise production and income to a level that will lead to adequate domestic savings being made for investment. Today the same is still true of many African countries where the level of savings is very low and grossly inadequate for the desired level of investments. The investment situation appears much larger when the dimensions of sustainable development are added. As already noted, the decline in aid and its unpredictability has indirectly made the need for huge inflow inevitable. The present conditions call for adequate ODA flows to African countries over a number of years sufficient to assist in the building of the necessary momentum for the right level of investment and the take-off of sustainable development. This strategy is practicable as African countries become more efficient in the management and utility of ODA. The model will, in the long run, be cost-effective for the donor countries since after the given period at which ODA has provided the right level of investment, additional ODA will no longer be required.

Aid tying reduction. Aid tying was one of the characteristics of ODA in the 1960s but continues to undermine the flow of ODA and its effect on sustainable development in the 1990s. The time has come for donor countries to effectively separate aid from trade. In the present global economic dispensation, it is superfluous to continue to view aid as a means for promoting trade and the stimulation of growth. The multilateralism of the World Trade Organization (WTO) has offered more robust channels for the expansion of trade of member countries. It is most imperative for donors to take appropriate action to substantially reduce or eliminate aid tying to make ODA more meaningful to recipient African countries. The future of sustainable development would be better in Africa if more aid funds are utilized for the purchase of capital goods from the cheapest sources in the world market.

Policy performance: support for specific needs. The late 1980s and early 1990s witnessed a strong emphasis of the donor countries on policy implementation by developing countries, including those in Africa, as the yardstick for aid disbursements. Prior to this period most African countries were in deep economic recession. But they have all fully acknowledged, since the mid-1980s, that a sound democratic process and structural adjustment programmes are mutually reinforcing strategies for the implementation of Agenda 21. African governments, both individually and collectively, have made strong pronouncements on these in their development plans and joint declarations and resolutions at the Summits of the Heads of State and Government of the OAU (See for example, OAU, 1995). Today, these are processes well entrenched and irreversible in many countries. While this is the pattern of development in many countries, the yardstick of implementation of political and economic policies becomes superfluous. In the current economic dispensation in African countries, the yardstick should be the specific needs of African countries, particularly the need of African countries to meet sustainable development challenges as integrated into their development plans.

Enhancement of autonomous financing. It must be recognized that ODA alone cannot and should not be conceived as the primary source for sustainable development in Africa. Sustainable development will be attained when ODA is available to effectively complement robust domestic resources. In this connection, there is an urgent need to remove impediments to the external trade of African countries. As a first step, the international community should, as a matter of urgency, address the question of market access of African countries to the markets of the developed countries. The Ministerial Meeting of the World Trade Organization, scheduled for November/December 1999 in Seattle, USA offers a vital forum to find more realistic practical solutions. Market access for the industrial products of African countries in the markets of developed countries together with improvements in the prices of commodity exports would create a more sound resource base for African countries to tackle the implementation of Agenda 21. In the same vein, the international community should more seriously consider the limitation to autonomous resources placed by the burden of external debt of African countries. Debt cancellation should be considered an important option along with the HIPC strategy, especially for the least developed countries. The resources released from debt should effectively be diverted to the implementation of the projects and programmes of Agenda 21.

Indigenous technology. The lack of technology represents the weakest link in the process of development in African countries. This has much to do with a weak educational base and lack of resources for its development. The lack of information and of resources have also been reasons for their inability to import technology for development. It has also been noted that the institutional support for the development of technology is feeble in most countries. Agenda 21 encourages the transfer of appropriate

technology from developed to developing countries to facilitate sustainable development. This has not been without problems, as the transfer is largely associated with the information and cooperation of multinational corporations. However, it is obvious that in the long term the future of sustainable development in Africa may well hinge on the development of indigenous technology. An increase in ODA to this sector would therefore be most highly desirable to address the issue of policy, information gathering and sharing, the coordination of research results within and between African countries, and for the establishment of research institutions in the region.

Enhancing the capacity of multilateral agencies. Multilateral agencies, especially those of the United Nations, have no funds of their own but depend on the contributions from donors in order to support the sustainable development process in developing countries. These agencies have in recent years witnessed a dramatic reduction in contributions from the donor countries largely for reasons related to performance. It has been argued that the UN and its agencies are too large and some times too old-fashioned to effectively address the current global development issues. Hence, the call for the restructuring and streamlining of its agencies. Over the past two years, the UN Secretary General has embarked on a restructuring process. Agencies, including UNDP, have been streamlined. But this has apparently not produced the desired effects from the donors. Contributions to UNDP have tended to dry up as it was being streamlined. Contributions to non-core resources in which donors have control over the way donations are expended have increased at the expense of core resources controlled by the agency and in which Africa has the largest take home portion. This development suggests the fears and interests of donors are elsewhere, and that they are presumably in dissatisfaction with the emerging structure of the agency.

However, sustainable development is not likely to be effectively promoted with a continuous weakening of the agency while it is starved for funds to meet its programmes on sustainable development, especially of Capacity 21. There is an urgent need to reverse the declining contributions to UNDP. The agency may not at all times be able to fully respond to the special interests of one or some few countries given the unique circumstances of the changes being carried out and of its operation. This should be weighed more against the unique advantages of the agency for facilitating sustainable development, particularly the coordination of aid and channelling to priority sustainable development programmes on the ground in African countries. Additionally, the technical resources available to African countries from UNDP is larger than that of any individual country acting alone collaborating with African countries in the promotion of sustainable development. Thus, donors should increase resource flows to multilateral agencies to enhance their capacity to perform. Sustainable development in Africa runs the risk of serious erosion if the decline in donations from donor countries persists.

Thus, in order to take sustainable development forward in Africa at the turn of the century it is important that sufficient attention should be accorded to the dynamics of ODA in a changing environment. The attitude towards aid by both the donor and the recipient will need to change to ensure increases in the flow of ODA. Some old obstacles to ODA will need to be perceived through a different prism to acknowledge the need for additional ODA flows. Also, taking sustainable development forward will require the tapping of the complementary forces of domestic resources and ODA.

CONCLUSIONS

The promotion of sustainable development in Africa since Rio could at best be described as reasonable when compared with the performance of other regions and given the enthusiasm that heralded the negotiation and adoption of the programme in 1992. Although the level of implementation varies from one country to another and from one sub-region to the other, nevertheless the broad areas of activities for all countries have been those primary areas that are fundamental to long-term sustainable development. The critical areas of focus at national, regional and international levels to which all efforts have converged include the integration of Agenda 21 measures into national economic policies, strengthening environmental laws and creating them where they do not exist. There have been actions in the consolidation of environmental institutions and the creation of new ones where they do not exist. Other actions relate to environmental impact assessments and capacity building. But major actions here remain incomplete and unsatisfactory for most countries for lack of funds and skilled manpower. Regional actions have been very encouraging with intergovernmental organizations taking the leading role in the articulation of the path which African countries should individually and collectively take in the all-important programme that is vital to the future of mankind.

On the substantive issues of Agenda 21, incursions have been made into natural resource management covering land and water-related issues, agriculture and rural development, deforestation and coastal and marine areas, poverty, population, human settlements and health, and waste and hazardous materials. Again, progress on these issues in each country or sub-region remains largely intangible for reasons of paucity of funds and skilled manpower. The weak economic positions of many African countries have been a major limitation to their attempts to make advancements in the implementation of the programme. But the more serious disappointment

came from the decline in ODA. The precipitous decline in ODA almost immediately after Rio took the wind out of the sail of all initiatives both at national and sub-regional levels and, in effect, left major environmental programmes to spill around, thanks to the disillusionment with the role of ODA in the development process in African countries.

But the important question here is whether the international community could abandon expressed commitments to increase flows of ODA to African countries for the implementation of Agenda 21. Logically the answer should be no. The gains made so far could evaporate into thin air if not consolidated with sufficient increases in ODA. The promotion of global sustainable development for mankind would suffer if Africa lags behind. Environmental degradation knows no national boundary. The implications of continued environmental degradation in Africa would have ramifications for other regions and prove devastating to current efforts at poverty eradication. It is therefore imperative that the international community increase its political will in the commitment to an authentic international development underscored by the preservation of the environment. In the interim, the weak African countries should be sufficiently assisted financially and technically in order to be brought into the mainstream of global sustainable development.■

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ANNEX

Table 1. Net Disbursements of ODA by DAC Countries Combined to African Countries ($ million)

	1991	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*
South of Sahara							
Angola	158.9	194.0	151.4	224.0	241.7	294.4	227.0
Benin	160.0	171.2	147.7	142.0	177.4	164.9	148.0
Botswana	104.2	93.4	80.1	56.7	54.5	67.9	55.8
Burkina Faso	270.1	267.6	254.7	264.7	252.3	269.2	217.9
Burundi	122.9	148.8	125.75	108.5	108.4	67.8	38.2
Cameroon	377.1	579.0	528.0	397.0	345.5	279.6	330.2
Cape Verde	79.1	80.0	81.4	81.5	76.9	77.5	68.0
Central African Rep.	98.1	106.71	116.8	94.2	122.4	121.0	61.3
Chad	137.6	148.4	145.7	103.5	127.0	121.8	96.4
Comoros	30.5	23.1	28.8	17.8	21.7	22.0	15.3
Congo Dem. Rep.	342.71	162.7	99.1	97.3	117.7	106.3	104.5
Congo Rep.	117.7	101.7	116.3	252.9	105.0	394.6	260.0
Cote d'Ivoire	434.7	527.4	708.5	820.2	726.6	449.2	232.7
Djibouti	82.9	92.0	94.0	94.2	79.6	70.8	62.2
Equatorial Guinea	35.2	35.9	27.7	16.5	21.7	23.3	17.8
Eritrea	-	-	48.1	95.7	94.6	124.8	80.9
Ethiopia	464.4	457.0	417.1	566.9	525.5	445.4	372.5
Gabon	140.5	64.8	97.5	161.2	135.6	113.4	30.2
Gambia	55.0	50.4	49.9	38.2	25.1	17.2	17.4
Ghana	448.6	332.7	312.4	331.8	358.6	348.9	291.9
Guinea	173.3	233.5	184.6	186.3	220.4	134.7	125.5
Guinea-Bissau	62.3	56.8	56.5	123.5	76.9	124.8	58.5
Kenya	608.4	519.7	426.5	400.5	458.7	345.7	301.0
Lesotho	74.1	69.0	73.8	45.5	61.6	49.3	44.6
Liberia	56.7	26.1	24.6	35.5	31.1	112.4	31.0
Madagascar	274.2	215.5	227.8	189.9	194.9	229.8	549.0
Malawi	208.7	207.9	158.6	251.1	220.9	263.9	174.0
Mali	279.7	239.1	221.0	243.0	285.1	297.5	256.6
Mauritania	110.36	116.4	196.0	128.1	126.0	98.8	95.5
Mauritius	61.5	34.7	26.8	7.7	11.0	-1.1	2.7
Mayotte	71.4	73.2	82.1	96.4	106.2	123.9	102.3
Mozambique	769.3	1006.9	812.8	733.0	698.3	551.9	621.6
Namibia	95.1	97.9	122.8	112.5	147.7	136.4	122.9
Niger	264.4	262.0	254.0	261.5	193.9	163.2	181.2
Nigeria	171.62	137.7	71.0	47.3	72.6	47.3	52.2
Rwanda	232.9	187.5	201.4	487.4	339.2	252.0	178.7

Table 1. (continued)

	1991	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*
South of Sahara							
St. Helena	14.8	15.2	14.1	13.1	12.4	15.4	14.8
Sao Tome & Principe	24.1	26.1	28.3	26.4	61.5	28.9	21.2
Senegal	421.4	454.0	363.8	475.1	399.4	392.0	292.0
Seychelles	16.8	15.4	6.8	7.3	11.0	7.8	6.3
Sierra Leone	67.9	74.1	105.7	53.8	59.6	67.0	41.4
Somalia	116.0	497.3	687.9	437.6	119.2	39.6	46.0
South Africa	-	-	183.3	214.4	318.5	311.9	415.0
Sudan	368.8	187.5	164.1	174.5	130.6	118.1	85.7
Swaziland	31.1	26.7	33.4	27.5	37.7	20.6	16.3
Tanzania	763.8	816.2	650.1	570.3	586.7	605.4	569.1
Togo	124.5	134.9	77.2	63.5	117.8	97.2	75.7
Uganda	285.3	254.8	347.8	344.5	423.1	369.9	438.8
Zambia	582.8	699.0	510.6	434.0	439.5	354.1	367.0
Zimbabwe	359.2	535.8	310.1	280.3	347.7	280.8	222.5
South of Sahara (unallocated)	600.0	682.1	393.3	434.4	364.8	469.4	361.4
Total	10950.0	11539.8	10647.4	10870.3	10391.8	9688.5	8598.8
North of Sahara							
Algeria	306.9	375.5	265.1	373.5	289.8	263.0	192.5
Egypt	4157.0	2996.2	1823.8	2310.7	1689.5	1933.3	1496.3
Libya	3.0	1.5	2.0	1.8	3.2	2.1	1.8
Morocco	610.8	733.7	422.0	317.9	347.4	391.4	215.2
Tunisia	263.9	298.2	126.8	72.7	52.1	41.5	69.3
North of Sahara (unallocated)	5.7	5.5	3.5	7.8	23.8	12.2	12.9
Total	534.3	4410.5	2643.1	3084.3	2405.8	2643.3	1987.9
Africa Unspecified	389.2	385.5	266.4	578.6	433.9	496.3	791.4
Africa Total	16686.5	16335.8	13556.9	14533.2	13231.5	12828.1	11378.1
America	4856.7	4293.7	4263.8	4550.0	4798.7	5757.4	3920.9
Middle East	3783.4	2871.8	2086.8	3061.8	1715.3	3597.5	1355.3
Asia	13349.3	13602.8	12176.0	13910.3	12481.7	11975.1	8119.9
CEEC/INIS	4985.5	5203.5	5217.1	5549.5	7087.0	4036.8	4041.8

Source: OECD, Geographical Distribution of Financial Flows to Aid Recipients 1993-1997, p. 64.

Table 2. Net disbursements of ODA from all sources
Combined to regions ($ millions)

	1991	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*
South of Sahara	17690.0	19143.5	17330.0	18912.0	18488.7	16748.5	15065.5
North of Sahara	6986.3	5366.7	3737.3	3908.3	2981.1	3362.5	2881.3
Africa Total	25208.5	25029.8	21476.9	23531.4	22055.3	20680.6	18743.9
Europe	2241.0	2284.0	3411.5	2196.3	2284.6	2518.4	2002.7
America	5998.0	5587.8	5605.2	6150.1	6861.7	8185.1	6270.8
Middle East	5076.1	3738.8	3128.7	4392.9	2908.3	4870.3	2549.3
Asia	20272.4	19724.9	17611.3	21118.2	18767.6	18973.3	14545.1
CEEC/INIS	6574.2	6057.1	5952.6	6863.2	8420.0	5602.3	5634.2
Total	90046.5	86932.6	78253.5	87072.4	82767.3	80941.0	67692.8
Percentage Africa	28.0	29.0	27.5	29.3	26.7	25.6	27.7

Source: OECD, Geographical Distribution of Financial Flows to Aid Recipients 1993-1997, (OECD: Paris), p. 64.

Table 3. Net Disbursements from Multilateral Agencies to African Countries ($millions)

	1991	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*
South of Sahara							
Angola	135.2	166.4	139.8	227.0	176.7	249.7	208.6
Benin	108.4	98.8	140.2	110.5	96.9	122.0	78.5
Botswana	42.9	35.5	35.3	-1.7	-1.9	-14.5	43.9
Burkina Faso	140.7	167.9	210.6	167.1	227.3	145.5	147.7
Burundi	134.8	161.6	92.2	203.4	181.4	133.2	77.7
Cameroon	250.9	229.2	-13.0	284.4	-9.1	68.7	80.5
Cape Verde	24.7	42.1	34.7	38.4	39.6	39.0	40.8
Central African Rep.	73.3	76.1	56.5	71.8	44.8	44.4	30.5
Chad	126.0	92.4	79.2	110.2	111.8	180.4	123.7
Comoros	29.0	24.5	21.2	22.2	21.8	18.0	12.8
Congo Dem. Rep.	212.8	97.4	77.7	146.7	76.8	57.4	54.9
Congo Rep.	13.5	11.7	4.2	147.8	2.4	52.7	-9.1
Cote d'Ivoire	382.4	311.2	-22.7	653.5	426.7	291.8	28.5
Djibouti	22.6	22.1	30.2	23.3	23.5	21.8	19.9
Equatorial Guinea	20.5	24.6	25.3	13.8	12.2	6.2	6.0
Eritrea	-	-	19.3	50.4	50.2	29.5	29.5
Ethiopia	642.6	737.0	684.0	511.3	379.4	440.1	300.5
Gabon	29.2	12.2	15.4	106.6	46.2	23.4	8.5
Gambia	45.9	64.4	37.0	33.4	22.2	21.7	24.0
Ghana	451.0	301.5	390.3	203.1	124.7	280.8	168.7
Guinea	197.1	233.7	259.8	205.1	209.3	157.9	226.2
Guinea-Bissau	51.3	45.2	38.0	51.6	36.3	53.1	66.3
Kenya	214.4	300.3	376.1	175.6	185.9	171.8	75.5
Lesotho	49.3	75.4	90.8	87.9	62.3	59.2	45.2
Liberia	100.3	93.3	97.5	27.7	91.7	94.0	64.4
Madagascar	178.2	139.3	132.3	92.4	103.8	128.9	263.5
Malawi	308.8	351.2	325.0	207.9	196.5	224.2	168.4
Mali	172.5	192.0	165.0	212.8	314.4	235.0	201.8
Mauritania	99.7	114.8	132.7	138.9	118.5	179.8	156.9
Mauritius	3.0	-4.7	-12.4	-9.3	-4.1	11.7	21.6
Mayotte	0.8	1.5	1.2	8.3	1.5	5.8	1.9
Mozambique	303.3	458.3	369.0	487.7	397.5	371.1	336.9
Namibia	89.1	45.5	31.9	31.9	45.0	54.3	42.8
Niger	107.0	108.0	77.6	108.0	79.0	94.3	148.2

Table 3. (continued)

	1991	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*
South of Sahara							
Nigeria	291.9	400.3	407.9	232.7	-31.9	-139.7	-111.0
Rwanda	127.3	165.8	154.5	226.4	373.4	421.5	412.3
St. Helena	0.5	0.6	0.6	1.0	0.2	0.5	0.3
Sao Tome & Principe	27.2	30.8	18.6	23.3	22.8	18.1	12.3
Senegal	178.2	254.3	182.0	177.8	233.4	160.5	106.3
Seychelles	4.2	8.0	16.0	10.1	6.2	11.5	7.7
Sierra Leone	35.6	63.2	105.5	222.3	143.1	124.3	87.5
Somalia	70.2	146.1	193.2	99.9	72.1	51.4	56.9
South Africa	-	-	92.0	80.2	67.5	90.9	159.4
Sudan	490.0	350.4	293.0	240.3	123.2	126.9	102.7
Swaziland	19.7	21.8	17.8	18.6	17.4	23.2	21.3
Tanzania	277.8	496.6	266.0	355.7	268.1	270.3	373.4
Togo	73.4	89.6	18.9	59.9	74.2	68.4	49.0
Uganda	311.3	447.0	243.3	383.8	390.5	308.0	398.0
Zambia	116.6	312.0	303.3	210.4	1524.7	205.2	201.5
Zimbabwe	139.5	425.1	351.3	235.3	94.9	78.5	104.9
South of Sahara Unallocated	11.1	102.8	20.5	203.8	55.0	427.1	383.9
Total	6935.4	8144.6	6826.2	7731.1	7325.7	6299.3	5661.8
North of Sahara							
Algeria	400.7	242.8	205.5	215.9	401.9	307.5	484.6
Egypt	285.7	332.3	346.0	335.2	78.2	140.3	450.7
Libya	23.4	4.9	4.0	5.1	5.2	7.9	7.3
Morocco	521.4	586.0	505.8	387.4	216.7	398.1	43.6
Tunisia	480.1	244.2	425.6	222.0	120.9	234.0	164.1
North of Sahara Unallocated	0.0	7.6	38.2	41.4	46.8	42.2	8.2
Total	1711.4	1418.0	1525.1	1207.0	869.8	1129.9	1158.5
Africa Unspecified	150.8	145.7	145.3	137.5	155.1	72.8	6.5
Africa Total	8797.5	9708.2	8496.6	9075.6	8350.6	7501.9	6826.8
Europe	158.4	544.9	1186.0	130.5	196.8	1163.7	906.4
America	2948.4	1284.8	4195.6	3319.8	4059.3	5761.8	5584.5
Middle East	960.8	873.1	848.7	964.8	1195.2	1207.7	841.7
Asia	9789.1	8459.9	9082.7	9421.8	9364.0	9137.8	14344.2
CEEC/INIS	2448.9	3001.8	3468.6	4172.9	4074.2	4782.0	6453.8
Total all Regions	25103.1	23872.7	27278.2	27085.4	27240.1	29559.9	34957.4
Percentage Africa	35.0	40.7	31.1	33.5	30.7	25.4	19.5

Source: OECD, Geographical Distribution of Financial Flows to Aid Recipients 1973-1997 (OECD: Paris), p.72.

DEBT RELIEF AND SUSTAINABLE DEVELOPMENT IN SUB-SAHARA AFRICA

*Nguyuru H.I. Lipumba**

EXECUTIVE SUMMARY

For a large number of heavily indebted poor countries, the traditional debt rescheduling exercises have neither delivered debt sustainability nor promoted sustainable growth with debt reduction. The Heavily Indebted Poor Countries (HIPC) Initiative is an improvement over the previous rescheduling exercises. It is, however, a very slow process and its sustainability measures do not focus on the fiscal crisis of African governments. Debt sustainability should be determined by the ability of governments to raise revenues to pay the debt while providing necessary infrastructure and social services and without imposing an enormous tax burden on the private sector (which will discourage investment). The debt relief provided so far is not adequate to guarantee debt sustainability for countries exporting primary commodities that face volatile commodity prices. The enhanced HIPC initiative agreed after the 1999 G-8 Cologne Summit deepens debt relief and links it to attaining monitorable targets in poverty reduction and social development.

Broad-based economic growth and poverty eradication is a do-it-yourself process. International bureaucrats cannot drive it. Financial and technical assistance from outside can help an internally driven process. If assistance from outside dominates the policy-making process aimed at poverty eradicating growth, it is more likely to fail. Debt relief can help development efforts of a country by removing the debt overhang problem and allowing policy to focus on promoting broad-based growth. It is, however, doubtful that the provision of debt relief can be used by the international community to twist the hands of policy-makers to focus on poverty eradication. Linking debt relief to the implementing of IMF and World Bank conditionalities undermines policy ownership that is necessary for poverty-reducing growth. Donors can assist in promoting poverty-reducing growth by linking the provision of new aid resources to countries that have democratically elected governments pursuing appropriate policies. Across the board debt cancellation is the appropriate policy for removing the debt crisis of African countries that will allow serious governments to pursue poverty-reducing growth strategies. The moral hazard problem is exaggerated. Countries with bad policies are not servicing their debt in the first place. Governments that are serious about promoting broad-based development have to spend more time negotiating debt relief when they should be designing poverty-reducing policies.

* Nguyuru Lipumba is Chairman, Civic United Front, Tanzania.

INTRODUCTION

SUSTAINABLE development entails three sets of interrelated objectives: economic development, social development and environmental protection. To attain sustainable growth, human and natural resources have to be used efficiently to promote growth of output and income. This growth should lead to the reduction of poverty while protecting the environment. Sustained reduction in poverty and improvement in the provision of social services, such as basic education, preventive and curative medicine, clean water and adequate shelter, requires broad-based growth of output. Although sustained long-term growth is usually dependent on technological progress, it is also associated with capital accumulation because technical progress is usually embodied in new capital goods. The necessary, but not sufficient, condition for sustained high growth of output is large levels of investment.

Poor countries such as those of Sub-Saharan Africa lack capital. In the framework of a debt-cycle hypothesis, countries that lack capital are expected to borrow and use foreign savings to increase domestic investment and growth. As income increases, domestic savings will increase and enable the borrowing country to pay the external debt. During the 1970s, Sub-Saharan Africa borrowed abroad but these loans did not promote sustainable growth of output and exports. The "Volcker" recession of the early 1980s and the collapse of Africa's terms of trade ignited the debt crisis. For over a decade Sub-Saharan African countries have faced a debt crisis that has retarded growth, undermined poverty reduction and degraded the environment.

This paper analyses the potential role of debt relief in supporting sustainable development. The paper first discusses the role of debt flows in promoting growth and sustainable development. It then analyses the so-called traditional mechanisms of external debt relief, discusses the impact of the HIPC Debt Initiative, discusses the Enhanced HIPC Debt Initiative, and, finally, discusses policies for promoting poverty-eradicating growth in Sub-Saharan Africa.

DEBT FLOWS AND ECONOMIC GROWTH

The central neoclassical view of international capital markets is that capital will be "reallocated from developed countries, where it is relatively abundant and its return is lower, to developing countries, where capital is more scarce and its return higher" (Cline, 1995, 141).

There are implicit requirements for the growth-through-debt model to work in practice. First, external loans should be used to increase investment rather than finance consumption or, worse, capital flight. Second, allocation and utilization of investment must be efficient. External loans should not be used to finance monuments such as new capital cities or highly protected, inefficient, import-substituting industries. Third, external loans must be used in projects that directly or indirectly produce tradable goods, so as to save or generate foreign exchange that is required to service the debt. Fourth, domestic savings should actually increase as the economy grows. Fifth, debt exporters should be willing to provide stable and predictable flows.

Surges of external loans to developing countries were not a logical workout of the debt-cycle hypothesis. Developing countries did not have access to international commercial bank loans before the 1973-74 oil price increase. The huge increase in revenues in oil-exporting countries, which were deposited in international banks operating in Europe, led to the rapid expansion of the petrodollar market. The oil price increase initiated a prolonged recession in industrialized countries and a decrease in the demand for loanable funds. International banks were increasingly eager to recycle the petrodollars, even to some countries in Africa. For most Sub-Saharan African countries, however, the predominant source of loans was official bilateral and multilateral creditors, although several countries were able to borrow commercially in the 1970s. Loans were available at low interest rates that were negative in real terms. The 'push' factors, such as the availability of loanable funds from bank deposits of oil-exporting countries and low demand for credit in industrialized countries experiencing recession and low interest rates— rather than the 'pull' factors of competitive, low-cost producers and high productivity in developing countries— initiated the surge of commercial bank lending to these countries.

The servicing of external loans appeared easy because of the commodity booms of the mid-1970s. Neither private nor official creditors were overly concerned about how their loans were used, nor bothered by the overall policy and institutional framework of borrowing countries. Most of the loans were to sovereign governments and international bankers tended to believe that countries never become insolvent and could always be squeezed and cajoled with the help of the International Monetary Fund to pay up their debts.

Several factors guaranteed debt-servicing problems when real interest rates turned highly positive and the terms of trade of traditional exports deteriorated: an institutional framework that promoted inefficient investment; overvalued exchange rates; highly protected, import-substituting industry that was biased against production of exportable goods; and the expectation that interest rates would remain low. Most countries did not have effective debt recording, monitoring and management systems. The debt crisis of the 1980s showed the risks of opening up to debt flows.

The extension of loans to African countries was

largely influenced by cold war rivalry and less by rational economic calculations of the productivity of external borrowing in African economies. The growth of debt was too high compared to the growth of exports (Annex, table 1). Most countries did not maintain good records of their external obligation but continued to have access to official credit from Western governments and, to a lesser extent, socialist countries. African governments seem to have perceived most of the external loans as grants. During the "Cold War" period the supply of loans created its own demand, regardless of the loans' contribution to economic growth. In the 1970s, lending governments and international financial institutions generally ignored the moral hazard issue that had been used in the 1980s and 1990s to delay and deny debt relief to heavily indebted countries.

The beginning of the world debt crisis is reckoned to have started in 1982 after Mexico failed to service its debt. Some African countries entered the debt crisis earlier than Mexico. As early as 1977, Tanzania's debt arrears on principal and interest exceeded the value of exports. In 1980, at least six countries, including Central African Republic, Chad, Mali, Mauritania, Sudan and Tanzania, had arrears exceeding 20 percent of their exports (Annex, table 2). The aggregate size of African debt was small and owed to official creditors and therefore did not have any impact on the international banking system. International efforts to address the African debt crisis had to wait for the action of non-governmental organizations such as OXFAM and CAFORD.

In retrospect, external borrowing was not the best way of utilizing foreign savings, particularly for Sub-Saharan countries, which had limited efficient formal sector private enterprises and few medium-sized local entrepreneurs. For public guaranteed debt, the country commits itself to service the debt and pay the principal, regardless of the profitability of the activity financed by external loans. Sub-Saharan African countries are poor and have limited entrepreneurial and technological capability. Foreign direct investment offers a better alternative for capital inflow than external borrowing because the investor takes the responsibility for managing the investment and the risk of failure. Only if the investment is profitable can the investor repatriate profits. If the investment is successful, the profit rate is likely to be higher than the interest rate on external loans, and hence the amount that can be repatriated will be larger than in the case of servicing external loans. This is not a problem if foreign firms generate or save foreign exchange. Foreign investment can be immiserising if domestic distortions are large, and foreign firms are established to monopolize protected domestic markets and earn monopoly rents. Debt accumulation in African countries neither increased the effective capital stock nor promoted growth.

THE TRADITIONAL MECHANISM OF EXTERNAL DEBT RELIEF

At the outset, the debt crisis was largely considered a liquidity problem causing temporary balance of payments problems. Early strategies involved non-concessional rescheduling of payments falling due and new lending packages linked to IMF stabilization and structural adjustment programs. Twenty-seven countries that are now classified as HIPCs agreed to 81 non-concessional flow reschedulings under Paris Club arrangements between 1976 and 1988. In the second half of the mid-1980s, creditor nations reluctantly accepted that heavily indebted countries face not only a liquidity problem but also a solvency problem. Since the mid-1980s, bilateral creditors have used a wide range of instruments to address the debt burden of poor countries, most of which are in Sub-Saharan Africa. The traditional mechanism of addressing the debt burden of poor countries has focused on debtor countries implementing stabilization and structural adjustment programmes supported by the International Monetary Fund and the World Bank. This mechanism included flow rescheduling agreements with Paris Club creditors followed by stock of debt operations for countries with a three year good track record implementing IMF supported programmes. Debtor countries also have to agree to seek at least similar terms from non-Paris Club creditors (that is, use the most-favoured creditor principle), bilateral forgiveness of ODA debt, and new financing on concessional terms. For a large number of heavily indebted poor countries, the traditional debt rescheduling exercises have neither delivered debt sustainability nor promoted sustainable growth with debt reduction. The integrity of the Paris Club rescheduling exercises was undermined as countries continued to accumulate debt payment arrears after every rescheduling. Why has the debt crisis persisted despite the adoption of structural adjustment and debt rescheduling exercises?

Implementing IMF Stabilization Programmes

In the past decade most of the heavily indebted poor countries in Africa have implemented IMF supported stabilization programmes. Their foreign exchange regimes have been liberalized. They have accepted IMF Article VIII obligations not to impose payment restrictions on current account transactions. The dates of the most recent three IMF programmes are shown in Annex table 3. Nineteen HIPCs of Sub-Saharan Africa have continuously implemented IMF programmes for at least three years in the 1990s. Of these 19, eleven countries, including Benin, Burkina Faso, Ethiopia, Guinea, Malawi, Mali, Mauritania, Mozambique, Tanzania, Togo and Uganda, had at least six years of implementing IMF programmes in the 1990s. Inflation has been drastically reduced in

many countries. These reforms, however, have yet to make a significant impact in terms of initiating and sustaining high growth of exports and output.

Paris Club Debt Rescheduling

The Paris Club rescheduling of the early 1980s was mainly non-concessional, with a grace period of only five years and maturity of ten years, and used market-based interest rates. Repeated rescheduling of these standard terms did not resolve the debt crisis of most countries, which continued to accumulate debt payment arrears. Indebted countries needed more than cash flow relief. The stock of debt was just too high to be effectively serviced. Although the inability of the poor countries to service their debt did not affect in any way the finances of creditor countries, the latter were slow to act on the predicament of the former. In 1988, creditor countries introduced concessional rescheduling on "Toronto terms". The menu of options under the Toronto terms could provide debt and debt service reduction of up to a third of the net present value of the rescheduled debt. However, the Toronto terms did not solve the debt crisis of poor countries. In 1991, creditor nations improved the terms of concessional rescheduling, the so-called London terms, which were expected to provide debt relief of up to 50 per cent of the net present value of the eligible debt. However, the London terms did not do the trick, either, and in 1994 creditor nations introduced the Naples terms that replaced the Toronto and London terms. Under the Naples terms, countries could receive a reduction in eligible non-ODA debt of up to 67 per cent in terms of net present value. The Lyon terms increased debt relief of up to 80 per cent of net present value of eligible debt.

The Paris Club rescheduling excluded the debt of multilateral financial institutions that continued to have the status of preferred debt that had to be fully serviced before a country could even apply for Paris Club rescheduling.

Many heavily indebted African countries have gone through a number of debt rescheduling exercises. Between 1986 and 1997, Tanzania had five Paris Club debt reschedulings. After each one, debt payment arrears continued to accumulate. The Paris Club commitment of reducing debt of up to a third under the Toronto terms, a half under the London terms, two-thirds under the Naples terms and 80 per cent under the Lyon terms have not led to a large reduction in nominal debt stock. Multilateral debt, which accounted for 40 to 60 per cent of poor countries' debt, was not included. Paris Club creditors did not offer the maximum reduction of eligible debt or cancel the ODA debt. The amount of debt cancelled during the 1985-97 period as a percentage of debt in 1985 and 1997 is shown in Annex table 4. Among countries that rescheduled their debts during the 1985-97 period, only Benin, Burkina Faso, Central African Republic and Senegal reduced their 1985 debt stock by at least 50 per cent. It appears that France was more generous in canceling the debt of her former colonies. Less than 20 per cent of the Sub-Saharan debt of 1985 was cancelled during this period.

A large share of resources from creditor nations has been provided as grants. Although ODA assistance has been decreasing since 1994, Sub-Saharan Africa has received the largest share of ODA. It should also be noted that despite the heavy debt burden most countries in Sub-Saharan Africa had overall positive net resource transfers (Annex, table 5). Even when we consider debt flows only, net resource transfers have been positive throughout the 1980s and 1990s. The only countries with large negative net gross resource transfers, relative to their GNP, are not HIPCs. They are the mineral rich countries of Botswana and Gabon, and, surprisingly, Swaziland. Nigeria has also recorded negative net resource transfers for a number of years.

If the net resource transfers have remained positive in HIPCs then why the fuss about the debt crisis strangling African economies? First, positive net resource transfers are partly the result of accumulating debt payment arrears. If these countries fully serviced their debt then their net resource transfers would be negative. Second, positive net resource flows are misleading with respect to the budget constraint problem facing governments. Most aid projects are not incorporated into the budget process. The funds are usually not available for budget allocation and are tied to projects selected by donors with cosmetic participation by debtor governments. The purchase of imports is usually tied to the country providing aid. Debt service has to be paid out of a country's recurrent revenue.

Large future debt servicing obligations and debt payment arrears cause debt overhang problems that discourage investment in a debtor country. Future debt servicing will require increased taxes. Investing in a country with a large debt service obligation may imply high taxes and social instability in the future. Domestic and foreign investors may hesitate to commit themselves in such economies. Countries with large debt payment arrears will have problems accessing international capital markets, thereby reducing external capital inflow and encouraging capital flight. Private capital markets are highly sensitive of countries that routinely run debt payment arrears. As Martin (1997, 150) has noted "All creditworthiness and ratings analyses on which foreign investors rely include strong negative debt elements. Those running portfolio investment funds in Africa or attempting to promote investor interest in HIPC privatizations assess the existence of debt overhang as a key negative influence. Some incentives, such as export credit guarantees, are directly cut off as a consequence of a debt overhang". The debt overhang stifles invest-

ment and growth. Resolving the debt crisis is a prerequisite for building African creditworthiness in the medium and long terms.

The debt sustainability measures do not focus on the fiscal crisis of African governments. Debt sustainability should be determined by the ability of government to raise revenues to pay the debt while providing necessary infrastructure and social services and without imposing an enormous tax burden on the private sector (which will discourage investment). Sachs (1996) has suggested that African countries can start growing fast if they strengthen the rule of law, lower the highest marginal tax rates to 20-30 per cent, adopt uniform tariff rates of 10 per cent, and limit government expenditure to 20 per cent of GDP, to be roughly allocated as follows: education (5 per cent), health (3 per cent), public administration (2 per cent), army and police (3 per cent), and government investment (5 per cent), mainly in road infrastructure, particularly rural roads. This type of minimalist expenditure on essential areas does not leave any revenues for debt servicing. Many African countries, including the favoured reformers such as Ghana and Uganda, are unable to raise 18 per cent of their GDP in fiscal revenues.

Tax revenue, as a percentage of GDP, for selected Sub-Saharan African countries is shown in Annex table 6. Most countries are unable to collect 20 per cent or more of their GDP in taxes. The exceptions are some mineral exporting countries such as Botswana, Gabon, Namibia, South Africa, Zimbabwe and the small middle-income economies of Mauritius and Swaziland.

If governments are unable to service their external debt, they are also likely to be unable to service their domestic debt obligations. A government that routinely accumulates debt payment arrears will not have the fiscal discipline that is necessary for both maintaining macroeconomic stability and efficient utilization of public resources to promote sustainable growth and poverty alleviation. Effective public expenditure management cannot be attained if governments are required to set aside 20-40 per cent of their revenue to service external debt that was, in the first place, unproductively utilized and failed to promote growth. It is widely recognized that "improving government performance requires, among other things, sustained commitment of, and political support from, key governmental and societal players and a realistic time frame to carry out appropriately sequenced reforms" (World Bank, 1999b). Public expenditure management is critical for maintaining and sustaining fiscal discipline to promote macroeconomic stability. It is also important for the prioritization of expenditures to support sustainable and poverty-reducing growth. High debt service obligations will undermine political support of reformers who want to bring discipline and improve management of public finances.

THE IMPACT OF THE HEAVILY INDEBTED POOR COUNTRIES (HIPC) DEBT INITIATIVE

The failure of the traditional mechanism of debt reduction and the pressure of NGOs calling for debt cancellation of poor countries implementing policies that support human development led the IMF and World Bank to propose the Heavily Indebted Poor Countries (HIPC) Debt Initiative in 1996. This initiative was meant to deal, in a comprehensive manner, with the overall debt burden of poor countries. The HIPC Initiative is guided by six principles: (i) the provision of a durable exit strategy by targeting overall debt sustainability on a case by case basis; (ii) debtor countries should have a track record of their ability to put the expected debt relief to good use; (iii) new measures will build on the Paris Club mechanism; (iv) broad coordination of all creditors to provide debt relief on an equitable basis; (v) preservation of the preferred creditor status and financial integrity of the multilateral financial institutions, which are also expected to provide debt relief; (vi) new external financing on concessional terms.

Boote and Thugge (1997, 140) were confident that the HIPC Initiative could resolve the debt crisis of poor countries. They asserted that "the HIPC Debt Initiative completes the array of instruments available to the international community to reduce the debt burden of these countries to sustainable levels, and for the countries to exit from the debt rescheduling process, provided they are prepared to adopt and pursue strong programmes of adjustment and reform. Implementation of the initiative should eliminate debt as an impediment to economic development and growth, and enable HIPC governments to focus on the difficult policies and reforms required to remove the remaining impediments to achieving sustainable development."

The original HIPC Initiative required debtor nations to have a track record of at least three years implementing IMF stabilization programmes before reaching a decision point whereby creditors made a commitment to provide sufficient debt relief to reduce the debt burden of eligible countries to sustainable levels, provided a country completes another three years of implementing a stabilization programme supervised by the IMF.

The HIPC Initiative considers that external debt sustainability is attained when a country is able to meet its debt service obligations promptly without accumulating debt payment arrears, rescheduling of debts or requesting debt relief. The servicing of debt should not adversely affect growth. The indicators used to determine debt sustainability are the debt export and debt service ratios. When the HIPC Debt Initiative was introduced in 1996 the IMF and World Bank set debt sustainability targets of a net present value debt-to-export ratio of 200-250 per cent and

debt service ratio of 20-25 per cent. Later, a fiscal indicator was introduced for very open economies. Countries with an export-to-GDP-ratio of 40 per cent and a revenue-to-GDP ratio of 30 per cent could qualify for HIPC debt relief if the net present value of debt to government revenue was 280 per cent or higher. Only poor countries that have these characteristics and can only borrow from the World Bank at International Development Association (IDA) terms are eligible. Nigeria, a member of the HIPC with an enormous debt overhang problem, does not qualify even when it implements IMF supported stabilization programs.

Among the 41 countries that were classified by the IMF and World Bank as HIPCs, 33 are in Sub-Saharan Africa. The implementation of the HIPC initiative has been slow, requiring a six year track record of implementing IMF and World Bank supported reforms before reaching completion point. Since the adoption of the HIPC initiative in 1996, out of 29 eligible countries, only Uganda, Guyana, Bolivia and Mozambique have received debt relief under this mechanism. Mozambique has received the most generous debt relief. The nominal debt has been reduced by $3.7 billion, equivalent to 63 per cent of the net present value of total debt. Uganda's debt has only been reduced by 20 per cent.

Côte d'Ivoire, Burkina Faso and Mali have reached a decision point and are in the pipeline to receive debt relief between the end of 1999 and 2001. Benin and Senegal reached a decision point and their debt was considered sustainable after receiving Paris Club rescheduling using the Naples terms.

The HIPC initiative is an improvement to the previous rescheduling exercises. It is, however, a very slow process. Only two African countries have received HIPC debt relief. Qualifying for an early completion point seems to be largely a public relations exercise from NGOs. Although Burkina Faso reached a decision point in September 1997, before Mozambique (April 1998), its debt relief is expected in the year 2000 while Mozambique reached its completion point in 1999. Burkina Faso has been as good a reformer as Mozambique. International NGOs and bilateral donors better championed the plight of Mozambique while Burkina Faso did not attract similar attention.

The debt relief provided is not adequate to guarantee debt sustainability for countries exporting primary commodities that face volatile commodity prices. Even after being the first country to receive debt relief under the HIPC initiative, the recent collapse of coffee prices makes Uganda's debt service unsustainable. The HIPC initiative reduced Uganda's overdue external debt by $650 million, or 20 per cent of the nominal value of the debt. The IMF concluded that Uganda's debt was sustainable after the 20 per cent debt reduction. It projected that the debt-servicing ratio of Uganda will decrease to an annual average of 14.5 per cent from 1998-99 to 2000-01, compared to an average of 22.2 per cent from 1995-96 to 1997-98. This reduction in debt service can be attained if the value of exports (in US dollars) grows at an annual average rate of 15.4 per cent over the period from 1998-99 to 2000-01, which is too optimistic, given the current weak commodity prices. The trend growth rate of Uganda's exports quantity index from 1986 to 1996 was only 0.4 per cent. The optimistic projections seem to be based on the unusual export performances of 1994 and 1995, which were associated with a coffee price boom and good weather conditions leading to a bumper coffee harvest. Ugandan tax collection is around 10-11 per cent of GDP. The export-to-GDP ratio is still low, around 12 per cent of GDP. A debt servicing ratio of 15 per cent implies using 1.5 per cent of GDP, or 15 per cent of tax revenue, to service debt. Can Uganda afford to service its debt and invest in poverty eradication? Without continued development assistance, Uganda will not be able to service its debt.

THE ENHANCED HIPC INITIATIVE

The international civil society has been critical of the too little, too late approach of implementing the HIPC Initiative. The G-7 Cologne Summit responded by proposing the Enhanced HIPC Initiative that should not only aim at sustainable debt levels but assist in promoting sustainable growth with debt reduction. The cash flow savings from debt relief should be used in the social sectors, particularly education and health. The IMF and the World Bank have been challenged to work with eligible countries to develop strategies of poverty reduction that should be integrated into the overall macroeconomic policy framework. The Enhanced HIPC Initiative aims at linking debt relief with the attainment of a number of internationally agreed targets for the year 2015 (relative to 1990). These include reducing the incidence of extreme poverty by half, reducing infant and child mortality by two-thirds, achieving universal enrolment in primary education, and eliminating gender disparity in education (by 2005).

In order to provide faster, deeper and broader debt relief, the benchmarks for debt sustainability have been reduced. The net present value debt-to-export benchmark has been lowered from its initial range of 200-250 per cent to 150 per cent. The benchmark for the debt service ratio is now 20 per cent rather than a range of 20-25 per cent. The fiscal benchmark, in the form of the net present value debt-to-fiscal ratio has been lowered from 280 to 250 per cent. The qualifying export to GDP ratio and revenue to GDP thresholds for the fiscal benchmark have been lowered from 40 to 30 per cent and from 20 to 15 per cent respectively. The bilateral donors are committed to forgiving 90 per cent of the ODA debt for countries qualifying under the Enhanced HIPC Ini-

tiative.

The track record of implementing reforms under World Bank and IMF supervision has been reduced to a minimum of three years rather than six years with the adoption of floating completion points, whereby countries can receive debt relief if they are considered to be strong reformers implementing poverty-reduction programs. The tying of the provision of debt relief to the implementation of poverty-reducing strategies, rather than simply adopting policies to maintain macroeconomic stability, has the potential of increasing the time required before a country can receive debt relief. Reducing poverty significantly takes time. Designing an institutional framework for a sustained improvement in both the quality and quantity of education and health services is a long-term process.

Designing and formulating appropriate policies to foster broad-based poverty-reducing growth and monitoring progress in attaining development goals requires the availability of accurate and timely statistics. Many HIPC countries do not have reliable social economic data. In Tanzania, for example, even national accounts are unreliable. The 1997 revised national accounts have increased GDP estimates of 1988 and 1992 by 263 and 68 per cent respectively. Government revenues as a percentage of GDP in 1992 decreased from 20 per cent to 12 per cent simply as a result of revising the national accounts. A tax effort that was considered reasonable before the revised accounts was apparently too low. The implication of earlier estimates of national accounts is that fiscal adjustment should focus more on reducing expenditure rather than raising taxes. The revised accounts suggest low tax effort and the need to increase tax collection through better tax administration. Many HIPCs do not have reliable social indicators such as net primary school enrollment rates, student-teacher ratios, and children malnutrition rates. Governments are not even aware of the correct number of their employees and soldiers. Can these governments prepare realistic poverty reduction strategy papers with monitorable social indicators before reaching a decision point in order to receive debt relief under the Enhanced HIPC?

The easily monitorable indicators such as budgetary allocation may not necessarily reflect sustainable improvements in social indicators. Crash programmes to increase primary school enrollments may be attained at the cost of drastically reducing the quality of education that may undermine increases in numeracy and literacy among the population.

The new benchmarks have increased the number of eligible countries from 29 to 33. It has also increased the amount of debt relief to be offered to HIPCs. Debt relief for poverty reduction continues to be tied to implementing IMF and World Bank programmes. The World Bank has proposed a comprehensive development framework (CDF) that goes beyond the "Washington Consensus" policies that was the basis of structural adjustment programs. The CDF goes beyond promoting growth, low inflation and balance of payments equilibrium and directly incorporates human development, particularly improvement in education, health and longevity of the whole population. According to Stiglitz and Wolfensohn (1999) "The World Bank's development objectives are focused on the achievement of democratic, equitable, and sustainable increases in living standards." Economic growth is seen as a necessary, but not sufficient, condition for sustained progress in other measures of well being, including education, health and nutrition. They argue that "to reduce misery and improve living standards, equity and sustainability must come to be viewed as essential complements to growth, not substitutes. Achieving rapid growth at the cost of relegating a significant portion of the population to poverty, or substantially degrading the environment — even if such trade-offs existed — would not represent sound policy. The old approach of an exclusive focus on growth as the elixir for all the world's problems is thus too circumscribed. Such a trickle-down approach ignores the substantial social gains from growth directed towards the poor. In other words, the quality of economic development — not just its existence — can be important."

The CDF framework has been criticized as too "fuzzy" and "using buzz-words of ageing hippies" and may undermine development by not focusing on growth. Development is a multifaceted process and involves building institutions that sustain the broad provision of education and basic health, promote participation in productive economic activities by establishing stable rules of the game such as widely accepted property rights, competition and the rule of law. There is no single factor that can guarantee poverty-reducing growth. The important question is can an international financial institution promote democratic and equitable development in poor countries?

The World Bank has not yet fully operationalized the CDF. The framework for poverty reduction is expected to have the following key elements: (i) poverty is multi-dimensional and is not limited to a lack of access to social services; (ii) high economic growth is a necessary condition for sustained poverty reduction; (iii) poverty reduction must have transparent poverty-related goals that can be monitored using proxy intermediate indicators; and (iv) sustained implementation of an anti-poverty strategy requires broad participation of civil society in both preparing and monitoring the programme.

The World Bank (1999a) has argued that "to design a consistent poverty framework, it is vital to have a good understanding of the determinants of poverty. Presentation of information on the levels and trends in poverty outcomes and intermediate indicators is necessary, but not sufficient, for developing an outcome-oriented strategy. The next step is to

assemble and distill information on the causal processes underlying human development, poverty and inequality outcomes." This is a tall research agenda for ministries of finance and planning in poor African countries. If the enhanced HIPC debt relief is conditional on the preparation of detailed poverty reduction framework papers that are fully owned and can be implemented by African governments, few countries will qualify.

Broad-based economic growth and poverty eradication is a do-it-yourself process. International bureaucrats cannot drive it. Financial and technical assistance from outside can help an internally driven process. If assistance from outside dominates the policy-making process aimed at poverty-eradicating growth, it is more likely to fail. Debt relief can help the development efforts of a country by removing the debt overhang problem and allowing policy to focus on promoting broad-based growth. It is, however, doubtful that the provision of debt relief can be used by the international community to twist the hands of policy-makers to focus on poverty eradication. Linking debt relief to implementing IMF and World Bank conditionalities undermine policy ownership that is necessary for poverty-reducing growth. Donors can assist in promoting poverty-reducing growth by linking the provision of new aid resources to countries that have democratically elected governments pursuing appropriate policies. Across the board debt cancellation is the appropriate policy for removing the debt crisis of African countries that will allow serious governments to pursue poverty-reducing growth strategies. The moral hazard problem is exaggerated. Countries with bad policies are not servicing their debt in the first place. Governments that are serious about promoting broad-based development have to spend more time negotiating debt relief than designing poverty-reducing policies.

POLICIES FOR PROMOTING SUSTAINABLE POVERTY-REDUCING GROWTH

After fifty years of development experience, there are generally accepted prerequisites for promoting sustainable development. Macroeconomic stability characterized by low to moderate inflation and a competitive real exchange rate is important for growth. An institutional framework that promotes the rule of law and social stability, and encourages private sector investment and economic activity is essential for growth. Governments have an important role of providing or facilitating the provision of basic infrastructure and promoting the development and functioning of markets. Without effective governments economic policies will be distorted, fiscal deficits will be large and likely to cause inflation, and public expenditure will not be effectively utilized to improve the health and education of the poor and provide essential infrastructure. Effective governments are also required to develop a regulatory and taxation framework to protect the environment. Empirical research on determinants of growth has shown that investment and education are important factors in promoting growth. East Asian economies that had sustained growth for thirty years had high investment rates and high primary and secondary school enrollment rates. High investment rates require high domestic savings rates. Foreign savings can only supplement domestic savings but cannot be a driving force for financing the domestic investment required to support broad-based growth. Without an effective regulatory framework to protect the environment, high investment rates and growth can undermine the ecological integrity of a country.

Macroeconomic Stability in African Countries

After more than a decade of stabilization policies, many African countries have attained low rates of inflation. Annex table 7 shows that out of 49 Sub-Saharan African countries, at least 33 had single digit inflation rates in 1998. The CFA franc zone countries have traditionally had low rates of inflation because of anchoring their currencies to the French franc. This policy has, however, led to the overvaluation of the exchange rate before the 1994 devaluation. Uganda has remarkably reduced its inflation rate from a triple digit average during 1985-90 to single digit levels in 1995-98 without sacrificing growth. Exchange rate policies of most countries have removed distortions. By the end of 1998 at least 34 Sub-Saharan African countries — compared to three countries in 1985 — had accepted IMF Article VIII obligations that requires countries to remove foreign exchange restrictions on current account transactions. Most countries have unified their exchange rate and the parallel market premium has gone down to less than 10 per cent. Massive exchange rate overvaluation is no longer a common phenomenon among African countries.

Despite these huge improvements, most countries do not have a framework for maintaining macroeconomic stability. Budget deficits continue to be large even after including aid. Governments implementing IMF programs tend to use cash budgeting to control expenditures. Cash budgeting has reduced the financing of deficits by printing money. It has, however, been accompanied by an increase in debt payment arrears to domestic suppliers of goods and services and on non-Paris Club bilateral debt. Reliable and up to date estimates of budget deficits do not exist in most African countries because of large payment arrears for goods and services. Effective fiscal management is the main stumbling block for attaining macroeconomic stability. African governments need to both improve tax administration, in order to increase government revenue, and improve the allocation of government expenditure to focus on improv-

ing basic social services, including health and education, and upgrading infrastructure, particularly roads. Significant debt relief can be a catalyst to improve the management of public finances.

Investment Rates

Investment in physical capital is a necessary, though not a sufficient condition for a high growth rate of output. During 1960-92, all fast-growing East Asian countries had average annual investment rates of 20-30 per cent of GDP, measured in internationally comparable prices. Investment rates in African countries have been low. Ten countries, including Angola, Burundi, Chad, Ethiopia, Madagascar, Mozambique, Rwanda, Sierra Leone, Uganda and Zaire, had average annual investment rates of less than 5 per cent. Another 14 countries, including Benin, Burkina Faso, Cape Verde, Central African Republic, Congo, Gambia, Ghana, Guinea, Malawi, Mali, Niger, Somalia, and Tanzania, had investment rates of 5 to 10 per cent. The only countries with investment rates of around 20 per cent, similar to that of China, Hong Kong, Indonesia and Thailand, are some of the mineral exporting countries, including Botswana, Gabon, Namibia, South Africa and Zimbabwe. Surprisingly, Guinea-Bissau also had a relatively large share of its GDP invested. Only diamond rich Botswana had growth rates comparable to that of East Asia. Other countries with high rates of investment were unable to sustain high growth rates.

The cost of investment in Africa is very high compared to other countries. Investment as a share of GDP is significantly higher when computed in domestic prices than in internationally comparable prices. This is partly caused by over-pricing of imports to Africa and by corruption, which inflates costs of public sector investment projects. The high growth rate of African debt, which did not contribute to growth, is partly explained by the high cost of imported goods.

The low levels of investment rates are partly explained by low savings rates, as domestic savings usually finance a large share of domestic investment. The exception is initial capital-intensive mineral-related investment, which is usually foreign funded, but once production has started retained profits account for most of additional investment. The institutional arrangements and policy environment has not been conducive to promoting private investment. Inadequate provision and low quality of public goods, including effective administration of justice and dispute settlements, public infrastructure including roads, power and water supply and telecommunication, have discouraged private investment. Policy instability and changing rules of the game have discouraged private investment and promoted capital flight.

The main cause of high savings rates is high growth of income. Low savings rates in Africa is partly caused by poor growth performance. Another reason for low levels of domestic savings rates is the weak financial system. The financial institutions in most countries in the region have not been performing the role of effectively mobilizing savings and channeling resources to highly productive investment. In almost all countries, except South Africa, Mauritius and Zimbabwe, the financial sector is underdeveloped (both geographically and functionally), thin and shallow. It has been argued that financial systems were characterized by considerable 'financial repression' geared to the financing of budget deficits, directed credit allocation, and administrative setting of interest rates. Negative real interest rates, particularly on deposits, have been common in countries with moderate to high inflation rates.

The liberalization of financial markets was expected to lead to positive but low real interest rates, greater savings mobilization, a decrease in intermediation costs by lowering the spread between lending and deposit rates, an increase in the volume of credit to the private sector and an increase in the efficiency in credit allocation by selecting more productive investment projects.

Reform of the existing financial systems is necessary. However, the direction and scope of the reforms have been overly influenced by the 'financial repression' hypothesis and the empirically unverified assumption about the positive impact of financial liberalization in mobilizing savings and their more efficient allocation to more productive investment activities. In addition, the design of the financial sector reforms in Sub-Saharan Africa has not taken into consideration the historical realities of African countries that have been characterized by missing credit markets and the experience of countries that have succeeded in promoting sustained economic growth such as the East Asian tigers whose governments strived to create financial markets. Limited emphasis has been directed to creating an environment that promotes transparent private enterprises, and improving and standardizing accounting systems to facilitate information flows from private enterprises to financial institutions that could increase the number of bankable indigenous private enterprises.

Promoting domestic savings

African countries have very low and, in most cases, decreasing savings rates, particularly when compared to East Asian economies. Low per capita incomes are not a complete explanation of low rates of savings. Low per capita income in China and India is not associated with low and declining savings rates as in most of Sub-Saharan Africa. Economic stagnation and negative growth rates of per capita income has contributed to the low savings rates in Sub-Saharan Africa. Financial repression has been seen as a major cause of low savings rates in less devel-

oped countries. Empirical work that shows negative real interest rates are associated with low savings rates fail to distinguish between small and large repressions. Countries with large negative interest rates drive regression results that show significant positive elasticity of savings rates with respect to interest rates. When these countries are excluded from the sample, real interest rates lose statistical significance. It should be noted that high negative interest rates are the result of high inflation, a symptom of government failure not only to collect taxes and control expenditure, but also to deliver government services and maintain the rule of law. Where the government is excessively inefficient, savings rates and growth are likely to be low. In this situation, increasing nominal interest rates to make real interest rates positive is unlikely, by itself, to increase the savings rate and promote growth. High interest rates may exacerbate the financial position of weak governments because of increases in government debt servicing. Before using interest rates to promote savings, economic reforms should focus on improving government fiscal discipline.

African financial markets are highly fragmented where the majority of the population in rural areas and the informal urban sector has no access to financial services. If savings are to be effectively mobilized, financial services have to be extended to the population that is currently under served — which requires innovative ways of linking the formal and the informal financial sectors through encouraging the development of emerging semi-formal intermediaries.

Developing an efficient financial system is costly and takes time. There are large fixed costs associated with installing an information gathering and monitoring system. Moreover, monitoring a few large projects or borrowers costs less per dollar lent than monitoring many small projects. At low levels of development, when per capita incomes are low, the cost of developing financial institutions to finance small investors can be prohibitive. At initial stages of economic development, financial growth is likely to follow a breakthrough in initiating the process of economic development. Once the development process has been initiated the efficiency and growth of the financial infrastructure can accelerate the development process by increasing the savings rate through offering better services and attractive returns to savers, reducing risks by diversifying financial institutions' assets and debtors, improving intermediation efficiency by reducing the spread between the lending and savings rates, and through increases in the productivity of the capital stock by selecting more productive investment projects and better entrepreneurs. For latecomers in the development process financial markets do not develop spontaneously. They have to be created by supportive government policies. The emergence and expansion of a class of domestic borrowers is necessary for the growth of financial intermediation. Improvement in accounting systems and bookkeeping practices are a prerequisite for commercial banks to provide credit to firms. High tax rates have, in many cases, encouraged accounting practices that are geared to tax evasion rather than summarizing the true financial position of a firm. Tax policy reforms should not only focus on revenue mobilization but also on simplifying the tax code and improving accounting practices of commercial enterprises.

Financing African Investment Requirements

To initiate a poverty-reducing self-sustained growth process, Africa requires investment in physical and social infrastructure. Sub-Saharan Africa as a region has a poor physical and social infrastructure characterized by poor communication and transport systems, weak agricultural research and extension networks, limited telecommunication development and unreliable power and water supplies. Investment by the private sector, including foreign investment, is unlikely to flourish in countries with poor infrastructures even when the exchange rate is appropriate and relative prices are undistorted. Domestic savings, even when increased, will be inadequate to finance the required investment. There is no escape for the need for external financing of any realistic infrastructure investment program. Given the perceived political and economic instability in African countries, private financing of long term investment projects will simply not be available and hence the need for public sources of external funding.

The resource constraint of African countries is worsened by excessive and unpayable debt burdens. We should, however, not exaggerate the increase in resources resulting from debt relief, particularly given the high levels of debt payment arrears. Additional resources are only increased when the favored multilateral debt is cancelled. The cancellation of some of the bilateral debt such as that of Italy, Japan, and United States is more likely to offset new aid flows.

Investment in Education and Health

The new growth theory emphasizes the importance of human capital in promoting growth. Advocates of cancellation of poor countries' debt want the savings to be used to improve social services, particularly health and education. It is widely believed that sustained modern growth in real per capita income cannot be accounted for by the accumulation of conventional units of physical capital or by the increased application of hours of labour per capita. The source of modern growth is explained by changing quality of labour and capital, change in organization, policy environment or technology. All these factors are brought about or facilitated by a healthy and edu-

cated population. Investment in human capital empowers individuals to innovate, learn and adopt new technologies and effectively manage enterprises and other complex organizations. Also, educated individuals in democratic societies tend to be more conscious about the environment.

Adopting improved technologies for agricultural production requires a basic primary education of good quality that ensures functional literacy and numeracy. The education of girls is absolutely important for improving the health and care of children, family planning and a clean environment at home. In most African countries, primary education is not yet universal and widespread and adult illiteracy is common (Annex, table 8). Long-term development and social progress requires attaining and maintaining universal primary education. Only Botswana, Cape Verde, Lesotho, Mauritius, South Africa, Swaziland, Togo, Zambia and Zimbabwe have attained universal primary education. Education is, however, not only a means for attaining high growth, but also an end in itself for empowering individuals to live a more fulfilling life.

The productivity of individuals is also determined by their health and nutritional status. Since independence, infant mortality rates have decreased but are still very high. Life expectancy at birth is very low compared to East Asian countries. In some of the countries, including Botswana, Burundi, Central African Republic, Congo D R, Congo, Côte d'Ivoire, Ethiopia, Kenya, Malawi, Rwanda, Tanzania, Togo, Uganda, Zambia and Zimbabwe, life expectancy is falling mainly as a result of the scourge of AIDS. Public policy towards AIDS prevention is necessary for poverty reduction. Botswana's commendable improvements in human development has been eroded by AIDS with life expectancy falling by fifteen years in the last decade. Uganda has shown how active public policy can reduce the spread of the deadly disease. Some have argued that debt relief should be directed towards AIDS prevention.

The Role of Agriculture in Promoting Poverty Eradicating Growth

The main objective of economic reforms and adjustment policies must be to establish conditions for poverty-eradicating sustainable economic growth. Attaining a sustainable balance of payments deficit, low inflation, and a competitive exchange rate are important goals if and only if they contribute to economic growth and improvement in the living standards of the majority of Africans who are in poverty. Eradicating poverty in Africa is a long-term goal that requires immediate action. For African countries, it is inappropriate to design policies that focus on stabilization in the short run, adjustment in the medium-term and growth and poverty alleviation in the longer-term after attaining macroeconomic stability and adjusting relative prices. Stabilization and adjustment policies have to be designed in such a way that poverty-reducing growth is initiated.

There is a broad, though not universal, consensus among students of African economic development that a poverty-eradicating development strategy must be based on increasing productivity of smallholder agricultural producers and the promotion of small to medium labour intensive manufacturing enterprises. Economic growth and structural transformation of the economy depend on increasing labour productivity. Broad-based human resource development or investment in human capital is both an objective of development policy and an instrument for achieving sustainable growth.

It is generally agreed that the overall impact of government policies has led to the neglect of agriculture and direct and indirect taxation of African farmers. The World Bank has rightly criticized the high levels of direct and indirect taxation of the agricultural sector. To get the African agricultural sector moving, however, price incentives alone are not adequate. We need improvement in the rural infrastructure and effective research and extension and credit arrangement that will enable smallholder farmers to access appropriate productivity-increasing technologies. In the past two decades, both land and labour productivity have tended to decline while population is increasing at an average rate of 3 per cent – a rate that will double the population every 23 years. African countries will be condemned to permanent poverty if they do not address the problem of how to broadly increase agricultural productivity.

Smallholder farmers cultivating less than one hectare dominate African agriculture. Smallholder farmers are generally efficient producers given the nature of the agricultural production function and decision-making and the resource endowment of African countries. Yet agricultural productivity remains quite low relative to its potential given the existing level of global agricultural knowledge.

A rapid growth of agricultural incomes will stimulate the demand for manufactured goods and services. The growth of nonagricultural small-scale enterprises in rural areas, including the manufacturing activity of blacksmiths, tailors, carpenters, masons, repair shops, etc., depend on the dynamism of the agricultural sector. Domestic food intake is below the minimum recommended and lacks proteins and fats. Domestic demand for food, as incomes increase, can provide an additional stimulus for growth. Increasing specialization and commercialization of smallholder production will stimulate intra-regional trade and can initiate rapid growth in other sectors.

Agricultural progress and modernization is usually accompanied by increases in commercialization of agricultural production. To increase the use of off-farm products — inputs and final consumer goods

and services — rural producers have to sell a larger share of their output. Rural infrastructure is indispensable. A broad-based agricultural development strategy also requires the development of rural infrastructure to connect rural producers to urban and world markets.

In many African countries the potential of rain-fed agriculture has not been exhausted. Improved marketing systems and price incentives have the potential of increasing output by fully utilizing the rural labour force and surplus land. The scope of increasing agricultural output in the long term by relying on improved marketing systems and price incentives is, however, limited even in countries with surplus agricultural land. Technical change that increases total factor productivity is necessary for transforming African agriculture. The collapse of real salaries, low budgetary allocation, lack of equipment, demoralization of scientists and lack of a clear research agenda further weakened African agricultural research capacity, which has never been adequate. Cooperation in agricultural research among African countries has tended to decrease. There is a backlog of agricultural technologies that are known and used in one country that could be utilized in neighbouring countries. Positive price incentives are important for encouraging farmers to invest and adopt more productive technologies as they become available. There is, however, no "Green Revolution" that has occurred without a government-supported system of credit allocation to encourage the adoption of better agricultural technology.

The main immediate problem facing an agricultural based development strategy is that world market prices of agricultural commodities, particularly tropical beverages, have collapsed. In a world of falling world market prices, liberalizing trade policies and depreciating the exchange rate are unlikely to maintain real positive price incentives. If all African countries try to increase their existing exports and attempt to capture their peak market shares and Asian countries continue to increase similar exports at current growth rates, export prices are bound to continue decreasing. The "fallacy of composition" is a real problem that in the real world is not resolved by the small country assumption. The World Bank and other aid agencies do not support international commodity agreements. The collapse of world market prices for tropical beverages have not led to a reduction of consumer prices but an increase in profits of food processing multinationals. International commodity arrangements that can guarantee some reasonable minimum producer prices can be useful in promoting agricultural transformation in African countries committed to supporting an agricultural-based development strategies. Industrialized countries are, however, unlikely to support such a strategy.

Diversification of agricultural exports should be a priority in any agricultural-based development strategy. Each country needs to put in place supporting policies and institutions that are necessary for a rapid increase in new exports of fruits and vegetables, oilseeds and nuts, fish products, flowers and exotic tropical plants based on smallholder producers.

Agricultural trade distorting practices of the US, Japan, and especially the European Union are not conducive for promoting agricultural exports. Non-tariff barriers, including health and sanitary standards, can be effectively used to limit trade opportunities of African countries. The Uruguay round has only slightly liberalized agricultural trade. Moreover, in the short run African exports will lose the special treatment they receive in the European Union when the preferences of the Lome Convention are phased out in the year 2000. The improvement of market access of African countries to developed country markets, including the capacity to meet sanitary standards, is essential for promoting broad-based development. Technical assistance may be useful.

The structural adjustment programmes tended to focus on macroeconomic stabilization, market liberalization and privatization. Comprehensive agricultural development strategies that focused on removing supply constraints facing African agriculture did not feature prominently in the Policy Framework Papers. The enhanced HIPC initiative is focusing on reallocating debt service savings into social sectors that have an impact on growth only in the longer term. The Poverty Reduction Strategy Papers that will replace Policy Framework Papers emphasize focus on monitorable social indicators. Policies to promote agricultural development, including improving rural infrastructure, can initiate growth and expand the tax base that can finance provision of social services. Increasing rural incomes can increase the capacity of the rural population to cover part of the cost of social services. An agricultural development strategy should feature prominently in African countries' Poverty Reduction Strategy Papers.

The Role of the State

> "*Much of the role of government can be viewed as establishing infrastructure in its broadest sense--educational, technological, financial, physical, environmental, and social. Because constructing the broad infrastructure is beyond the capacity or interest of any single firm, it must be primarily the responsibility of government*" (World Bank, 1999).

The development and poverty crisis in Africa is first and foremost the crisis of the African State. Most African governments have not fulfilled the traditional roles of maintaining law and order and providing a just legal framework under which households and private firms will produce and trade goods and services, investing in and maintaining physical

and social infrastructure, and promoting agricultural research and extension. For most African countries with a rudimentary financial system, macroeconomic stability is essentially a fiscal phenomenon. At the aggregate level public sector deficits broadly defined to include public and quasi-public enterprises are the main domestic cause of balance of payments problems, the external debt crisis and inflation. The IMF stabilization programmes tended to emphasize short-term reduction of deficits by reducing aggregate expenditures or increasing government revenue. Raising government revenue in a sustainable way, without discouraging savings and promoting investment, was not part of the earlier IMF stabilization programmes. Prioritizing government expenditure and respecting the budget constraint is an essential characteristic for promoting poverty-reducing growth.

To reduce poverty and promote growth requires a government bureaucracy of high quality that has to put in place efficient tax and expenditure systems that minimize inefficient and unproductive spending. The first priority of a government seriously committed to promoting sustainable development may well be to improve the quality of the public institutions so that it can pursue the objective of poverty-reducing growth in the most efficient way. The task of improving the quality of government can be formidable. Synergy and *espirit de corp* is important in public institutions because they work together. The objective of poverty reduction cannot be attained if there is an efficient tax revenue institution but expenditure departments do not function well. Broad improvements in all critical institutions of governance are necessary for overall improvements in the quality of government. A comprehensive approach that addresses problems of different institutions of governance, including the judiciary, police, tax administration and expenditure departments at the same time, may be necessary before embarking on a poverty-reducing strategy.

Effective public expenditure management requires that "the total amount of money a government spends should be closely aligned to what is affordable over the medium term and, in turn, with the annual budget; such spending should be appropriately allocated to match policy priorities; and the spending should produce its intended results at least cost" (World Bank, 1999b). Undisciplined fiscal policy has adverse consequences on the poor. Budgetary allocation on priority areas for the poor will not be adequate. Improvements in public expenditure management need a focus on efficiency, the results achieved with expenditure. Government budgets should be the product of policy choice and planning. If the policy choice is sustainable poverty reduction, the whole government budget should reflect this choice and not just expenditure of funds released from debt relief.■

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ANNEX

Table 1. Trend growth rate of total debt stock and exports of goods and services

	1971-1980		*1980-90*		*1990-97*	
Country	*Debt*	*Exports*	*Debt*	*Exports*	*Debt*	*Exports*
Angola	….	…	23.8	15.0	2.9	4.8
Benin	30.7	15.6	11.4	5.1	3.8	2.0
Botswana	12.7	27.1	16.1	15.5	0.5	2.5
Burkina Faso	41.5	20.5	11.8	4.7	6.3	-2.1
Burundi	43.6	…	21.1	…	2.8	-3.6
Cameroon	37.8	20.3	10.0	2.3	5.8	-0.7
Cape Verde	79.3	30.2	17.8	6.8	8.9	10.7
Central African Republic	23.1	15.5	15.6	2.0	3.5	1.3
Chad	29.8	-19.0	7.3	14.6	9.7	2.3
Comoros	58.8	…	16.9	12.1	1.7	1.2
Congo, Dem. Rep.	32.1	12.1	8.6	3.3	3.4	-4.0
Congo, Rep.	30.8	…	13.9	0.5	1.6	3.2
Côte d'Ivoire	34.7	18.8	8.5	1.5	-0.4	6.3
Djibouti	30.8	…	25.4	…	5.1	-1.4
Equatorial Guinea	21.4	…	12.0	…	2.6	34.2
Eritrea	…	…	…	…	35.6	9.0
Ethiopia	17.5	10.8	21.9	2.5	2.3	8.5
Gabon	31.6	…	14.8	-3.1	1.3	3.5
Gambia, The	42.0	…	9.5	10.3	2.5	1.6
Ghana	11.3	6.8	11.7	1.6	6.9	9.2
Guinea	11.2	…	8.0	…	5.1	-1.5
Guinea-Bissau	71.5	…	19.1	…	4.5	17.2
Kenya	22.9	14.0	8.4	1.4	-0.9	5.9
Lesotho	28.2	18.4	18.1	2.9	8.3	2.3
Liberia	19.4	…	10.6	…	1.6	…
Madagascar	3.8	9.5	11.4	1.1	1.7	8.9
Malawi	21.2	14.7	7.3	2.2	6.1	2.9
Mali	11.7	21.9	13.8	7.4	2.4	3.6
Mauritania	43.0	4.9	9.9	6.0	2.4	0.0
Mauritius	37.5	14.0	7.2	14.7	14.1	6.5
Mozambique		…	9.2	…	3.9	9.0
Niger	41.9	33.3	7.7	-0.1	-0.4	-7.4
Nigeria	26.6	30.3	14.0	-8.4	-1.1	3.4
Rwanda	70.7	13.9	16.5	-0.6	6.1	-3.3
Sao Tome and Principe	…	18.4	19.9	-5.9	8.4	3.2
Senegal	30.7	5.7	10.8	4.7	0.1	1.2
Seychelles	…	29.1	14.6	10.2	-1.7	6.1
Sierra Leone	18.0	18.8	9.2	-1.2	-0.3	-10.9
Somalia	27.8	34.9	11.3	…	1.5	…
South Afica	…	…	…	…	4.9	…
Sudan	35.3	13.5	10.2	-3.2	2.1	10.7
Swaziland	24.7	10.8	3.7	6.3	2.8	6.0
Tanzania	18.1	4.4	0.1	-3.6	2.1	17.4
Togo	50.0	17.3	3.1	3.3	1.5	0.0
Uganda	17.5	3.6	14.7	-1.3	5.7	25.9
Zambia	17.8	4.8	9.4	0.0	-0.8	0.5
Zimbabwe	13.1	19.3	11.6	2.3	6.8	8.2

Source: Computed using data from World Bank Global Development Finance 1999 CD Rom

Table 2: Total arrears on LDOD Percentage of Exports

Country	*1975*	*1980*	*1985*	*1990*	*1994*	*1995*	*1996*	*1997*
Angola	…	…	1.8	17.5	153.9	140.8	32.6	34.9
Benin	10.1	5.9	43.8	19.7	16.7	12.9	12.7	13.1
Botswana	0.0	0.0	0.0	0.2	0.9	0.5	0.0	…
Burkina Faso	0.0	0.1	4.2	16.8	12.9	11.5	11.1	6.8
Burundi	…	…	5.7	0.1	12.2	3.5	34.9	35.4
Cameroon	0.3	0.9	2.1	23.1	45.5	48.4	68.4	26.8
Cape Verde	…	0.0	0.7	11.8	17.8	16.8	18.8	16.1
Central African Republic	…	26.3	2.0	17.3	46.6	47.4	63.8	65.8
Chad	…	52.8	59.9	8.0	25.8	14.3	16.0	13.1
Comoros	…	0.0	9.3	78.5	49.7	56.8	69.1	68.0
Congo, Dem. Rep.	9.0	2.8	15.7	50.8	417.9	424.7	428.8	521.0
Congo, Rep.	…	1.4	13.8	50.1	103.2	117.8	78.1	88.6
Côte d'Ivoire	0.0	0.0	2.2	71.5	98.1	81.8	68.4	4.7
Djibouti	…	…	…	…	5.8	7.8	8.4	11.6
Equatorial Guinea	…	…	…	113.7	167.4	144.2	73.9	29.8
Eritrea	…	…	…	…	0.0	0.0	0.0	0.0
Ethiopia	0.1	0.2	0.3	41.2	569.1	503.6	581.1	506.2
Gabon	…	0.0	0.0	7.7	6.2	0.9	0.0	0.0
Gambia, The	…	0.5	22.4	0.8	2.9	2.2	0.1	0.1
Ghana	6.1	0.8	6.5	13.3	10.6	7.3	2.1	1.6
Guinea	…	…	…	29.1	83.0	63.5	56.1	75.6
Guinea-Bissau	…	…	206.1	703.0	931.6	1422.2	782.9	391.8
Kenya	0.0	0.3	0.9	7.5	3.5	1.3	1.5	3.6
Lesotho	0.0	0.0	0.1	0.8	2.9	2.2	2.2	1.8
Liberia	…	0.8	38.7	…	…	…	…	…
Madagascar	0.2	3.2	24.4	79.4	209.6	220.3	216.4	95.5
Malawi	…	1.3	0.6	5.7	4.1	2.0	3.8	4.5
Mali	33.1	23.6	32.4	13.1	56.9	56.9	70.0	78.1
Mauritania	0.4	19.7	15.1	41.9	61.1	49.5	48.7	63.0
Mauritius	…	0.4	0.0	0.4	0.1	0.0	0.0	0.0
Mozambique	…	…	166.1	310.9	266.8	284.0	237.3	248.1
Niger	0.4	0.2	2.7	19.6	22.9	38.0	23.5	31.1
Nigeria	…	0.0	1.8	14.4	92.4	96.8	79.6	83.2
Rwanda	…	0.0	0.0	6.5	134.0	64.2	85.3	58.7
Sao Tome and Principe	0.0	0.0	31.3	341.2	355.0	335.4	205.2	174.0
Senegal	0.0	0.0	2.2	0.0	19.4	4.4	0.9	0.8
Seychelles	…	0.0	0.0	4.4	8.0	8.1	7.8	7.5
Sierra Leone	…	8.5	51.2	168.2	27.4	15.5	18.5	24.2
Somalia	…	8.1	147.5	…	…	…	…	…
South Africa	…	…	…	…	0.0	0.0	0.0	0.0
Sudan	0.0	58.4	186.3	1414.8	1698.7	1203.6	1352.6	1157.4
Swaziland	0.0	0.0	0.0	0.0	0.7	0.5	0.1	0.1
Tanzania	…	270.3	1206.5	223.2	215.7	186.7	178.0	144.2
Togo	0.3	8.4	0.1	0.6	45.4	14.0	12.4	0.7
Uganda	1.7	30.4	14.6	121.3	83.8	39.0	33.7	28.8
Zambia	0.2	2.4	63.2	169.2	166.8	72.5	82.7	70.3
Zimbabwe	…	0.0	0.0	0.0	0.9	0.9	0.1	0.0

Source: World Bank Global Development Finance 1999 CD Rom

Table 3: Recent Three IMF Programs

Country Name	*IMF Program Type*	*Approval Date*	*Expiration Date*	*Amount Approved (SDR Million)*	*Amount Drawn (SDR Million)*
Angola	None				
Benin	ESAF	08/28/1996	01/07/2000	27.18	16.31
	ESAF	01/25/1993	05/21/1996	51.89	51.89
	SAF	06/16/1989	06/15/1992	21.91	15.65
Botswana	None				
Burkina Faso	ESAF	09/10/1999	09/09/2002	39.12	5.59
	ESAF	06/14/1996	09/09/1999	39.78	39.78
	ESAF	03/31/1993	05/30/1996	53.04	44.20
Burundi	ESAF	11/13/1991	11/12/1994	42.70	19.21
	SAF	08/08/1986	08/07/1989	29.89	29.89
	Stand-by	08/08/1986	03/31/1988	21.00	0.00
Cameroon	ESAF	08/20/1997	08/19/2000	162.12	126.09
	Stand-by	09/27/1995	09/26/1996	67.60	28.20
	Stand-by	03/14/1994	09/13/1995	81.06	21.91
Cape Verde	Stand-by	02/20/1998	12/31/1999	2.50	0.00
Central African Republic	ESAF	07/20/1998	07/19/2001	49.44	16.48
	Stand-by	03/28/1994	03/27/1995	16.48	10.71
	SAF	06/01/1987	05/31/1990	21.28	21.28
Chad	ESAF	09/01/1995	04/30/1999	49.56	49.56
	Stand-by	03/23/1994	03/22/1995	16.52	10.33
	SAF	10/30/1987	10/29/1990	21.42	21.42
Comoros	SAF	06/21/1991	06/20/1994	3.15	2.25
Congo, Dem. Rep.	Stand-by	06/09/1989	06/08/1990	116.40	75.00
	SAF	05/15/1987	05/14/1990	203.70	145.50
	Stand-by	05/15/1987	05/14/1988	100.00	24.50
Congo, Rep.	ESAF	06/28/1996	06/27/1999	69.48	13.90
	Stand-by	05/27/1994	05/26/1995	23.16	12.50
	Stand-by	08/27/1990	05/26/1992	27.98	4.00
Côte d'Ivoire	ESAF	03/17/1998	03/16/2001	285.84	123.86
	ESAF	03/11/1994	06/13/1997	333.48	333.48
	Stand-by	09/20/1991	09/19/1992	82.75	33.10
Djibouti	Stand-by	04/15/1996	03/31/1999	8.25	7.27
Equatorial Guinea	ESAF	02/03/1993	02/02/1996	12.88	4.60
	SAF	12/07/1988	12/06/1991	12.88	9.20
	Stand-by	06/28/1985	06/27/1986	9.20	5.40
Eritrea	None				
Ethiopia	ESAF	10/11/1996	10/22/1999	88.47	29.49
	SAF	10/28/1992	11/08/1995	49.42	49.42
	Stand-by	05/08/1981	06/30/1982	67.50	67.50
Gabon	EFF	11/08/1995	03/07/1999	110.30	60.67
	Stand-by	03/30/1994	03/29/1995	38.60	38.60
	Stand-by	09/30/1991	03/29/1993	28.00	4.00

Table 3. (continued)

Country	*IMF Program Type*	*Approval Date*	*Expiration Date*	*Amount Approved (SDR Million)*	*Amount Drawn (SDR Million)*
Gambia, The	ESAF	06/29/1998	06/28/2001	20.61	3.44
	ESAF	11/23/1988	11/25/1991	20.52	18.02
	SAF	09/17/1986	11/22/1988	10.86	8.55
Ghana	ESAF	05/03/1999	05/02/2002	155.00	22.16
	ESAF	06/30/1995	05/02/1999	164.40	137.00
	ESAF	11/09/1988	03/05/1992	388.55	388.55
Guinea	ESAF	01/13/1997	01/12/2000	70.80	47.20
	ESAF	11/06/1991	12/19/1996	57.90	46.32
	SAF	07/29/1987	07/28/1990	40.53	28.95
Guinea-Bissau	ESAF	01/18/1995	07/24/1998	10.50	10.50
	SAF	10/14/1987	10/13/1990	5.25	3.75
Kenya	ESAF	04/26/1996	04/25/1999	149.55	24.93
	ESAF	12/22/1993	12/21/1994	45.23	45.23
	ESAF	05/15/1989	03/31/1993	261.40	216.17
Lesotho	Stand-by	09/23/1996	09/22/1997	7.17	0.00
	Stand-by	07/31/1995	07/30/1996	7.17	0.00
	Stand-by	09/23/1994	07/31/1995	8.37	0.00
Liberia	Stand-by	12/07/1984	12/06/1985	42.78	8.50
	Stand-by	09/14/1983	09/13/1984	55.00	55.00
	Stand-by	09/29/1982	09/13/1983	55.00	35.00
Madagascar	ESAF	11/27/1996	07/27/2000	81.36	40.68
	ESAF	05/15/1989	05/14/1992	76.90	51.27
	Stand-by	09/02/1988	05/15/1989	13.30	2.80
Malawi	ESAF	10/18/1995	10/31/1999	50.96	43.33
	Stand-by	11/16/1994	06/30/1995	15.00	12.73
	ESAF	07/15/1988	03/31/1994	66.96	66.96
Mali	ESAF	08/06/1999	08/05/2002	46.65	6.75
	ESAF	04/10/1996	08/05/1999	62.01	62.01
	ESAF	08/28/1992	04/09/1996	79.24	79.24
Mauritania	ESAF	07/21/1999	07/20/2002	42.49	6.07
	ESAF	01/25/1995	07/13/1998	42.75	42.75
	ESAF	12/09/1992	01/24/1995	33.90	33.90
Mauritius	Stand-by	03/01/1985	08/31/1986	49.00	49.00
	Stand-by	05/18/1983	08/17/1984	49.50	49.50
	Stand-by	12/21/1981	12/20/1982	30.00	30.00
Mozambique	ESAF	06/28/1999	06/27/2002	58.80	8.40
	ESAF	06/21/1996	06/27/1999	75.60	75.60
	ESAF	06/01/1990	12/31/1995	130.05	115.35
Namibia	None				
Niger	ESAF	06/12/1996	08/27/1999	57.96	48.30
	Stand-by	03/04/1994	03/03/1995	18.60	11.11
	ESAF	12/12/1988	12/11/1991	47.18	23.59

Table 3. (continued)

Country	*IMF Program Type*	*Approval Date*	*Expiration Date*	*Amount Approved (SDR Million)*	*Amount Drawn (SDR Million)*
Nigeria	Stand-by	01/09/1991	04/08/1992	319.00	0.00
	Stand-by	02/03/1989	04/30/1990	475.00	0.00
	Stand-by	01/30/1987	01/31/1988	650.00	0.00
Rwanda	ESAF	06/24/1998	06/23/2001	71.40	23.80
	SAF	04/24/1991	04/23/1994	30.66	8.76
	Stand-by	10/31/1979	10/30/1980	5.00	0.00
Senegal	ESAF	04/20/1998	04/19/2001	107.01	49.94
	ESAF	08/29/1994	01/12/1998	130.79	130.79
	Stand-by	03/02/1994	08/29/1994	47.56	30.91
Seychelles	None				
Sierra Leone	ESAF	03/28/1994	05/04/1998	101.90	96.85
	SAF	03/28/1994	03/27/1995	27.02	27.02
	SAF	11/14/1986	11/13/1989	40.53	11.58
Somalia	SAF	06/29/1987	06/28/1990	30.94	8.84
	Stand-by	06/29/1987	06/28/1988	33.15	5.53
	Stand-by	02/22/1985	09/30/1986	20.10	20.10
South Africa	Stand-by	11/03/1982	12/31/1983	364.00	159.00
Sudan	Stand-by	06/25/1984	06/24/1985	90.00	20.00
	Stand-by	02/23/1983	03/09/1984	170.00	170.00
	Stand-by	02/22/1982	02/21/1983	198.00	70.00
Swaziland	None				
Tanzania	ESAF	11/08/1996	02/07/2000	181.59	181.59
	ESAF	07/29/1991	07/28/1994	181.90	85.60
	SAF	10/30/1987	10/29/1990	74.90	74.90
Togo	ESAF	09/16/1994	06/29/1998	65.16	54.30
	ESAF	05/31/1989	02/28/1993	46.08	38.40
	SAF	03/16/1988	05/30/1989	26.88	7.68
Uganda	ESAF	11/10/1997	11/09/2000	100.43	73.65
	ESAF	09/06/1994	11/09/1997	120.51	120.51
	ESAF	04/17/1989	06/30/1994	219.12	219.12
Zambia	ESAF	03/25/1999	03/24/2002	254.45	10.00
	ESAF	12/06/1995	12/05/1998	701.68	661.68
	SAF	12/06/1995	12/05/1996	181.75	181.75
Zimbabwe	Stand-by	08/02/1999	10/01/2000	141.36	24.74
	Stand-by	06/01/1998	06/30/1999	130.65	39.20
	EFF	09/11/1992	09/10/1995	114.60	86.90

Source: Country Information in www.imf.org

Table 4. Principal and interest forgiven 1985-97
(per cent of total debt)

Country Name	*1985*	*1997*	*Country Name*	*1985*	*1997*
Angola	125.3	36.9	Liberia	0.3	0.2
Benin	53.4	28.1	Madagascar	35.5	21.9
Botswana	1.3	0.8	Malawi	7.3	3.4
Burkina Faso	70.6	27.8	Mali	35.1	17.4
Burundi	31.2	13.3	Mauritania	16.0	9.5
Cameroon	28.5	9.7	Mauritius	0.5	0.1
Cape Verde	9.2	4.1	Mozambique	32.2	15.5
Central African Republic	71.9	27.9	Niger	44.0	33.3
Chad	81.4	17.2	Nigeria	0.2	0.2
Comoros	35.7	24.3	Rwanda	18.0	5.9
Congo, Dem. Rep.	9.1	4.6	Sao Tome and Principe	0.0	0.0
Congo, Rep.	11.1	6.7	Senegal	51.8	36.2
Cote d'Ivoire	21.0	13.0	Seychelles	0.0	0.0
Djibouti	31.0	15.7	Sierra Leone	32.2	19.9
Equatorial Guinea	15.0	7.0	Somalia	7.9	5.0
Eritrea	…	0.0	South Africa	…	0.0
Ethiopia	4.0	2.1	Sudan	0.9	0.5
Gabon	26.2	7.4	Swaziland	0.4	0.3
Gambia, The	4.7	2.7	Tanzania	15.4	19.5
Ghana	16.8	6.3	Togo	39.9	27.9
Guinea	31.3	13.0	Uganda	14.2	4.7
Guinea-Bissau	16.2	5.6	Zambia	27.8	18.8
Kenya	17.7	11.4	Zimbabwe	2.3	1.1
Lesotho	7.0	1.8	Sub Sahara Africa	18.3	8.9

Source: World Bank Global Development Finance 1999 CD Rom

Table 5. Gross net transfers as a percentage of GNP

Country	*1970-74*	*1975-79*	*1980-84*	*1985-89*	*1990-94*	*1995-97*	*1996*	*1997*
Angola	…	…	…	12.3	11.6	-3.8	-12.0	-11.2
Benin	4.0	7.8	10.1	7.3	11.8	8.6	8.9	6.3
Botswana	20.7	12.8	5.0	-3.5	-7.2	-5.7	-6.5	-5.7
Burkina Faso	5.8	7.8	9.5	8.5	13.4	11.5	11.6	9.7
Burundi	4.2	6.6	10.3	10.7	19.2	18.4	20.0	10.4
Cameroon	4.0	7.8	3.6	0.0	4.0	-0.4	0.0	-0.2
Cape Verde	…	…	50.1	36.4	22.6	21.5	22.6	20.6
Central African Re-	7.7	7.9	10.3	10.3	11.4	11.1	13.5	7.7
Chad	5.9	9.7	7.8	15.8	14.0	12.8	14.1	11.0
Comoros	17.2	25.6	30.3	21.2	12.5	10.7	10.9	8.6
Congo, Dem. Rep.	3.5	4.3	-0.3	2.3	3.8	1.7	1.8	1.2
Congo, Rep.	18.0	12.8	16.5	2.2	2.7	2.1	-0.6	9.3
Cote d'Ivoire	2.7	6.0	-0.5	-4.1	3.2	1.0	2.7	-4.4
Djibouti	…	…	…	…	…	10.8	11.7	9.1
Equatorial Guinea	7.2	…	…	31.0	36.4	90.9	172.1	6.6
Eritrea	…	…	…	…	…	13.2	12.6	10.8
Ethiopia	…	…	…	11.6	16.5	7.9	6.2	7.6
Gabon	13.4	3.8	-7.4	5.4	-4.1	-10.1	-9.8	-11.2
Gambia, The	6.1	12.2	22.4	28.1	17.0	11.0	17.6	8.7
Ghana	1.5	1.6	2.4	6.4	13.0	11.2	12.1	7.7
Guinea	…	…	…	…	7.6	5.8	5.4	5.5
Guinea-Bissau	0.6	36.3	48.7	48.3	32.1	28.1	29.5	29.7
Kenya	3.7	3.5	3.0	4.5	4.0	-1.1	-1.6	-2.3
Lesotho	8.2	6.6	10.0	10.9	8.6	6.4	6.3	5.3
Liberia	-1.3	9.8	11.6	…	…	…	…	…
Madagascar	3.9	2.8	7.8	7.0	10.8	11.7	7.4	20.2
Malawi	9.1	12.5	6.7	12.3	18.8	15.9	13.3	8.1
Mali	11.9	11.7	16.1	16.3	11.6	11.7	10.7	10.9
Mauritania	9.3	22.4	23.5	15.8	16.2	16.9	22.2	13.8
Mauritius	1.7	3.7	2.4	2.5	1.1	6.9	0.6	14.6
Mozambique	…	…	…	31.6	51.5	37.6	31.3	28.0
Niger	6.3	11.8	9.0	11.2	12.7	9.7	8.0	12.8
Nigeria	-2.8	0.1	-0.2	-1.9	-3.2	-0.9	-2.1	0.8
Rwanda	6.0	9.4	7.5	7.4	25.7	37.9	41.3	27.1
Sao Tome and Prin-	…	13.9	37.9	43.7	84.7	66.1	65.8	38.4
Senegal	4.5	4.5	10.6	6.9	9.8	6.6	6.2	6.6
Seychelles	20.4	14.8	13.6	10.2	4.3	5.0	4.1	6.8
Sierra Leone	4.1	2.6	2.4	4.7	12.2	12.1	11.2	11.9
Somalia	8.9	28.0	54.1	33.7	…	…	…	…
South Africa	…	…	…	…	…	0.9	-0.9	0.8
Sudan	3.1	7.4	11.0	4.9	5.5	2.3	2.3	1.6
Swaziland	-2.8	10.2	1.3	-2.5	-3.3	-3.5	-5.3	-0.6
Tanzania	…	…	…	…	18.4	9.4	8.0	9.1
Togo	1.7	21.9	4.9	6.2	7.2	8.0	9.5	4.5
Uganda	…	…	8.4	5.7	14.7	10.3	9.5	10.1
Zambia	-1.9	5.4	6.2	14.9	17.5	9.1	9.0	7.8
Zimbabwe	-0.5	0.8	2.9	-0.5	3.9	1.5	0.6	0.4

Source: World Bank Global Development Indicators, 1999

INCREASING THE CONTRIBUTION OF FOREIGN INVESTMENT TO SUSTAINABLE DEVELOPMENT: DOMESTIC AND INTERNATIONAL POLICY MEASURES

John R. Dilyard
H. Peter Gray[*]

EXECUTIVE SUMMARY

The developing world consists of two relatively clearly defined groups of countries: those which are growing at a sustainable rate, albeit with interruptions caused by short-term dislocations (industrializing/developing) and those whose performance is close to stagnation (poor countries). This distinction reinforces the observation of the Commission on Sustainable Development (CSD) that "poverty elimination" had become the "poor stepchild" of the annual CSD sessions. The paper addresses an important aspect of the problem: can the inadequacy of official development assistance to nations in need of external finance be remedied by private portfolio and direct investment and, if so, what are the necessary policy measures for both the investing and recipient nations?

The policies will hinge on the adequacy of the institutions needed by both the more developed countries and poorer countries if they are both to attract and retain inward flows of private portfolio equity investment and to avoid financial crises.

The need for external finance derives from the low level of domestic savings and, possibly, the inability to generate export revenues to meet the developmental need for hard currency. Private investments, direct and portfolio, are possible sources of the needed finance. Neither direct nor portfolio investment is likely to be available to the developing countries in the amount needed because of inadequate resource bases and/or an inadequate "institutional infrastructure" and because of inadequate supplies of savings being generated in the consumer-driven economies of the industrialized world. Further, part of the supply of finance potentially available to the developing countries has been siphoned off by the needs of countries with economies in transition.

There is good reason to consider under-emphasis on poverty as a serious omission if, as seems reasonable, very poor countries will almost inevitably tend to devote any increase in available resources to consumption and to investment which generates consumption goods rather than to the other goals of Sustainable Development ("environmental protection and the creation of biodiversity" and "social programmes"). Failure of the participants in the Rio Summit to officially acknowledge and to repair the inadequacy of financing available to the very poor countries is a major concern.

In a globalized economic system with a liberalized international economic involvement, developmental strategy requires that nations seeking sustainable development take advantage of the benefits of international trade and investment by following a policy of outward industrialization allowing inflows and outflows of direct investment and utilizing portfolio finance where this is expected to be long-term. This paper addresses two sources of private foreign financing, direct investment and portfolio investment. The paper can be seen as validating Jun and Brewer (1997) in the greater contribution of direct investment to sustainable development, but it also shows the inadequacy of heavy reliance on the corporate sector because these channels of funding together will fail to eliminate the inadequacy of external funding, particularly for poor countries. The paper also examines why this should be so, and what steps must be taken if either direct and/or private portfolio investment are to be relied upon to eliminate the funding "gap" between the available flow and the amount which could be used efficiently.

It is necessary to recognize the need for developing countries to have sophisticated institutional infrastructure if they are to rely on private funds for financing sustainable development. In poor countries, such sophistication is probably not feasible because the ability to create the "institutional financial infrastructure" needed to

[*] H. Peter Gray is Professor Emeritus of Economics and Management, Rutgers University, United States; John Dilyard is Professor of Management, St. Francis College, United States.

attract private portfolio investment is acquired only as part and parcel of the process of the institutional evolution that is endemic in sustainable development. Middle-income or industrializing/development countries can benefit greatly from inflows of direct investment and, if they have developed or can develop the appropriate financial infrastructure, from inflows of modern portfolio investment.

THE United Nations Commission on Sustainable Development recognizes the sovereignty of individual developing nations as well as the three goals of eliminating poverty;[1] the development of social programs; and the importance of limiting environmental degradation while recognizing the dangers of reductions in biodiversity. Developing nations have, therefore, the acknowledged right to allocate such economic gains as they may achieve according to their own set of priorities. The priorities among the goals will vary according to the level and rate of growth of income of individual countries and their cultures. It may also be reasonably assumed that the lower the level of per-capita gross domestic product, the greater will be the share of any incremental product that will be devoted to consumption (the elimination of poverty) and the smaller the share for the other goals identified by the Rio Summit.

Modern conditions divide the developing world into two relatively clearly defined groups of countries: those which are growing at a sustainable rate, albeit with interruptions caused by short-term dislocations (industrializing-developing or I-D countries) and those whose performance is close to stagnation (poor countries). The 1996 Human Development Report (UNDP, 1996, 3) identifies 101 countries (not including China or India but with 25 per cent of the world's population) as suffering from "failed growth," defined as having per-capita income lower in 1993 than before 1990. Boote and Thugge (1997, table 2) identify 41 heavily-indebted poor countries which stand in drastic need of debt relief.

The existence of such a large share of the world's population in countries with failed growth is both an important moral problem for the civilized world in the light of the goals agreed upon at the Rio Summit and offers the possibility of substantial damage to the global commons as poor countries are likely to commit large amounts of environmental damage in their search for greater product.[2] Given this scenario, the distribution of income gains and sustainable development among the population of developing countries has significant importance for the global benefits to be derived from the reduction of pollution spillovers. It is, therefore, important that the Commission on Sustainable Development address the foreign financing of economic development in the non-industrialized world as well as the conditions in the recipient countries necessary for such financing.

Investment in I-D and poor countries works its effect mainly by augmenting the rate of economic growth and by contributing to any evolution in the host economy that accompanies economic growth. Portfolio investment, unless it incorporates foreign expertise and training related to a specific project, will serve to supplement domestic savings so that the rate of capital formation can be increased and, possibly, to ease any shortage of foreign exchange needed for the acquisition of foreign-made capital goods. Foreign direct investment (FDI) is likely to include technology transfer, foreign expertise and training of indigenous personnel, as well as a supplement to domestic savings. Access to foreign markets may also be generated when the affiliate is incorporated into a global network of production and distribution. The emphasis on economic growth leaves, as noted above, the partition of the economic gains among the three goals of the Rio Summit to the individual nation. This does not preclude some spillover gains to limiting environmental degradation and to the creation of social programs. The degree to which such spillover effects are generated will depend to a large degree on the concern of the multinational corporation with the aspirations of the host country there will be wide variability among multinationals.

Jun and Brewer (1997) noted that the top twelve recipient nations (including China, which we would contend is unique) receive about 80 per cent of FDI flows as well as a substantial part of private portfolio flows. These data reinforce the suggestion that the

[1] The Commission on Sustainable Development cited, as a criticism of progress reports, that "poverty elimination" had become the "poor stepchild" of the annual CSD sessions *(CSD Update*, vol. 3, November, 1996).

[2] Damage to the environment committed by very poor nations has different characteristics than the damage perpetrated by the industrialized nations and the richer developing nations. The decimation of the rainforests of the Amazon basin and the generation of carbon monoxide from petroleum consumption are obvious examples of the two kinds.

developing countries have been effectively divided into two blocs and that the more affluent developing countries enjoy a virtuous cycle of self-reinforcing development while the poor countries suffer a vicious cycle of self-reinforcing stagnation.

The purpose of this paper is to examine the way in which private capital flows are attracted to developing countries so that savings can be transferred from the developed countries in the form of direct and private portfolio investment flows to I-D and poor countries. Given that the Rio Summit relied upon the corporate sector to be the key actor in the "battle to save the planet" (Ismail, 1996), the role of private financial transfers and their distribution between the two groups of developing countries must constitute a primary area of focus. The paper identifies the adequacy or inadequacy of "institutional infrastructure" as an important factor affecting the ability of a developing nation to attract (and to retain) inward investment. Institutional infrastructure comprises the institutional setting, the rules and regulations and the efficiency of their enforcement that prevail in a country.[3] Inward private portfolio investment, particularly portfolio equity investment (modern foreign portfolio investment or MFPI) is extremely sensitive to the adequacy of "financial institutional infrastructure".

THE ROLE OF PRIVATE CAPITAL IN SUSTAINABLE DEVELOPMENT

All developing countries need to attract a flow of net inward foreign investment in some form and for an extended period as a supplement to domestic savings during the process of development.[4] Thus, a nation must be able to generate inflows of foreign funds in the form of direct investment, traditional private and official portfolio investment, modern portfolio investment (denominated in host-country currency — see below) or official development assistance (ODA) to supplement its sustainable development initiatives.

The financing of sustainable development must confront three problems: first, the adequacy of the total flow of available funds (the actual or potential flow relative to the amount which can be effectively and efficiently used);[5] second, the distribution of these funds among the two groups in the developing world; and third, the ability of the developing countries to avoid financial or environmental crises in which the direction of the flow of funds reverses and net capital flows return to the industrialized world.

In the absence of a substantial increase in ODA and other subsidized flows, the flow of private capital from the industrialized to the developing world is likely to be less than the perceived need of the developing countries. Since private capital seeks high risk-adjusted rates of return, global excess demand for savings can lead to competition among developing countries to attract inflows of investment and to turn the terms of trade against developing countries and in favour of multinational corporations and industrialized nations with surplus savings.[6] Even if the total foreign savings available for transfer to developing countries were, in some sense, adequate, it is probable that its distribution would be biased towards the I-D countries. It is therefore possible to perceive of a quasi-optimistic scenario in which the I-D countries do receive (almost) as much private investment as they can effectively utilize — largely in the form of FDI and portfolio capital — while poor countries continue to be underfunded.

The major problems facing poor countries are the lack of a policy framework that favours inward FDI, institutional infrastructure that allows FDI to be used effectively, the resources needed to attract inward FDI (Dunning and Narula, 1996) and the lack of financial infrastructure or the sophistication necessary to attract private portfolio capital even if the greater benefit allows a risk premium to be paid. I-D countries, however, may have local resources of sufficient quality to attract inward FDI and they may have financial infrastructure which is adequate to attract inward private portfolio investment under tranquil conditions but not adequate to retain inward portfolio investment in turbulent times.

Not all components of the gross inflow are equally valuable per unit of inflow. What matters is that they accumulate to the amount which the country can use effectively; there is, therefore, substantial substitutability among the different components.

[3] The concept is developed below. Institutional infrastructure must be clearly distinguished from "physical" infrastructure whose role in development is well recognized. The two types of infrastructure have features in common and some aspects, such as the existence of good communications networks, might be classified in either category.

[4] This is an assumption which could be disproved by reference to the remarkable success of Taiwan, Province of China, which has run current account surpluses and has a substantial positive balance of foreign assets owned over liabilities to foreigners. This example is more honoured in the breach than in the observance.

[5] The volume of funds which can be efficiently used depends, importantly, on the efficiency of the recipient government. Doubts about this efficiency are probably responsible for the current emphasis on private capital flows.

[6] This fact is best established and is most sophisticated in the competition to attract inward FDI (Guisinger and others., 1985).

Table 1. Net long-term resource flows to developing countries, 1990–1997($ billion)

	1990	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998**
Net long-term resource flows	100.8	123.1	152.3	220.2	223.6	254.9	308.1	338.1	275.0
Official flows	56.9	62.6	54.0	53.3	45.5	53.4	32.2	39.1	47.9
Private flows	43.9	60.5	98.3	167.0	178.1	201.5	275.4	299.0	227.1
From international capital markets	19.4	26.2	52.2	100.0	89.6	96.1	149.5	135.5	72.1
Private debt flows	15.7	18.6	38.1	49.0	54.4	60.0	100.3	105.3	58.0
Commercial banks	3.2	4.8	16.1	3.3	13.9	32.4	43.7	60.1	25.1
Bonds	1.2	10.8	11.1	37.0	36.7	26.6	53.5	42.6	30.2
Others	11.4	3.0	10.7	8.6	3.7	1.0	3.0	2.6	2.7
Portfolio equity flows	3.7	7.6	14.1	51.0	35.2	36.1	49.2	30.2	14.1
Foreign direct investment	24.5	34.4	46.1	67.0	88.5	105.4	126.4	163.4	155.0

Source: Calculated from World Bank, *Global Development Finance*, 1999.
* 1998 levels are estimated.

Table 2. The distribution of foreign direct investment flows to developing countries, 1990–1997 ($ billion)

	1990	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*
Foreign direct investment to all developing countries	24.5	34.4	46.1	67.0	88.5	105.4	126.4	163.4
Direct investment in the top 12 developing countries	17.3	23.2	33.5	49.8	68.5	76.1	94.3	114.0
Direct investment in all other developing countries	7.2	11.2	12.6	17.2	20.0	29.3	32.1	49.4
Sub-Saharan Africa	0.8	1.6	1.6	1.9	3.3	3.5	4.3	5.2

Source: Calculated from World Bank, *World Development Indicators 1999.*

ODA is probably the most valuable because it carries no corresponding liability, but the shortfall of ODA for countries seeking sustainable development is well recognized and the authors see little evidence in the United States, at least, of any quick turnaround in attitude. Direct investment, with its concomitant transfers of proprietary technology, environmental management techniques, human capital and possible access to foreign markets for value added in the host country, is very valuable (Fry, 1996). The per unit value of inward portfolio investment depends upon the degree to which the foreign savings is locked into the recipient nation and upon the efficiency with which it is allocated to projects with a high expected rate of return.

Data on recent flows of all categories of capital (foreign savings) to developing countries are given in table 1. This paper focuses on three kinds of private capital flows: direct investment, traditional portfolio debt flows and portfolio equity flows. Two categories, direct and portfolio equity, are central to this paper because they are effectively denominated in the currency of the recipient country and have different characteristics from debt flows, which are usually defined in hard currency. What is of significance here is the division of flows (of each kind) between the top twelve recipients and the rest of the developing world. Details of the division in all three kinds are given in tables 2, 3 and 4.

Private portfolio flows have surged, particularly in

Table 3. The distribution of private debt flows to developing countries 1990–1997 ($ billion)

	1990	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*
Private debt - all	15.7	18.6	38.1	49.0	54.4	60.0	100.3	105.3
Private debt in the top 12 countries	9.6	16.3	23.6	31.5	49.9	49.4	86.7	75.6
Private debt - all others	6.1	2.3	14.5	17.5	4.5	10.6	13.6	29.7

Source: Calculated from World Bank (1999). *World Development Indicators 1999.*

Table 4. The distribution of modern foreign portfolio investment flows to developing countries, 1990-1997 ($ billion)

	1990	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*
MFPI, all countries	3.7	7.5	14.1	51.0	35.2	36.1	49.2	30.2
MFPI, top 12 countries	2.5	6.7	12.9	47.7	25.3	24.8	29.4	18.7
MFPI, all others	1.2	0.8	1.2	3.3	9.9	11.3	19.8	11.5

Source: Calculated from World Bank (1999). *World Development Indicators 1999.*

countries located in regions where sustained development seemed and seems feasible. The success of countries in East Asia, prior to 1997, and Latin America is identified in tables 5 and 6. Some East Asian developing countries are beginning to attract more inward investment as they have successfully begun to overcome the disruption caused by the 1997 crisis. However, the contribution of foreign investment to sustainable development depends upon the growth of the stock of the inward investment: hence the importance of the ability to retain inflows from past years. Direct and modern portfolio investments have very different degrees of reliability (sensitivity to a lack of confidence in the host economy) and, therefore, provide different levels of benefit per dollar of investment: this is largely due to the different characteristics of the assets.[7]

The benefits (and the potential costs) of inward FDI are well known and are discussed in detail in Jun and Brewer (1997). Here we are concerned with the lack of volatility and the steady growth of the stock of inward FDI. While the physical assets acquired as a result of FDI are defined in the currency of the recipient country, the real assets will not be vulnerable to a depreciation or devaluation of the host country currency brought on by an excessive rate of inflation (a traditional macroeconomic problem) and financial assets of affiliates can be protected against weakness in the host currency by borrowing locally. When there is an overvaluation of the host currency brought about by excessive inflation, the terms of trade facing host-country enterprises improve without fundamental reason. Thus, a depreciation merely restores the original terms of trade or there will be, at most, a relatively minor weakening of the currency's real rate of exchange (the nominal rate adjusted for different degrees of inflation). The capitalized value of the affiliate's physical assets in the parent company's home currency and the price-competitiveness of exports from the affiliate will not be seriously affected in the long run (Gray and Miranti, 1990).[8]

While a host country's policy framework may explicitly attract or deter inflows of FDI in a macroeconomic sense, the detrimental effects of inadequate institutional infrastructure can be offset through the

[7] Data on FDI flows include changes in the outstanding portfolio of assets and liabilities of established MNC affiliates.

[8] This does not mean that the local affiliates benefit from the excessive inflation: indeed, they may temporarily lose their price competitiveness and find the host-country market depressed as the authorities seek to fight the inflation without depreciation. Further, a change in the real rate of exchange (terms of trade) that will engender a given current balance will, self-evidently, affect the value of the FDI asset in the home-country currency.

Table 5. Equity funds in emerging equity markets[a]

Country		*Total Assets ($ million)*	*Number of Funds*	*GDP($ billion)*
Argentina		230	6	297.5
Brazil		1,497	53	759.2
Chile		1,200	7	67.1
China		6,680	108	835.7
Colombia		40	2	73.1
India		3,450	60	311.4
Indonesia		597	27	233.5
Korea		5,150	94	461.8
Malaysia		875	20	
Mexico		1,348	12	330.0
Philippines		654	13	82.9
Taiwan, Province of China		3,953	29	272.0
Thailand		2,855	31	183.2
Regions	Asia	40,125[b]	375	–
	Latin America	9,750[b]	155	–

Sources: UNCTAD (1997, Table A.19)
Note: The number of funds includes funds from the more developed countries as well as from the industrialized countries.
[a] asset values and the number of funds are taken as of September 30, 1996.
[b] assets do not include the asset values of the country funds.

creation of special enclaves which contain adequate (or, at least, less inadequate) institutional infrastructure, such as export zones, by the host country. These measures may not be needed by the more affluent developing nations in their attempts to attract inward FDI but they offer a means for poorer nations to buffer any inward FDI from domestic malfunction.[9]

When branches or affiliates of foreign banks are present in the enclave, they can shelter multinationals' foreign affiliates from any adverse effects of inadequate financial infrastructure. He (1999) shows the importance of the presence of foreign banks. When foreign banks were allowed to establish themselves in the Shanghai region of China, their presence brought about spectacular increases in inward (non-financial) FDI and in gross regional product. Inadequate institutional infrastructure can affect the benefit to be derived by a foreign affiliate in a developing country because of differences in the ability of affiliates in developing economies to engage in activities which rely on sophisticated practices. One such possibility is the difficulty which obtains in assessing the likelihood that certain transferred technologies could precipitate a disaster because of inadequate supervision by the host government.[10] Per contra, Lundan (1996) shows that inward FDI in pollution-intensive industries can improve the pollution standards of the host country because the multinational corporation is limited in its pollution capability by the demands of its customers or because the firm finds the world-wide standardization of equipment to be beneficial.

Inward FDI may be expected to grow steadily as reinvested profits expand existing affiliates and as growth in the host economy increases the capability

[9] Enclaves are often made still more attractive by the offer of various investment incentives (Guisinger and others, 1985). Of course, the creation of enclaves only makes inward FDI more attractive and the local resources must be attractive enough to foreign multinational corporations to warrant inward FDI. This requires, at a minimum, a reliable well-trained workforce which, in turn, requires good educational infrastructure.

[10] There exist modern technologies which are disaster-capable, meaning that a malfunction can cause great harm outside the confines of the property of the producer ("disasters" are distinguished from "accidents" which take place within the confines of the producer's property). When the operation is deprived of adequate supervision by the parent multinational corporation and of adequate regulation by the host country, the result could be a disaster. The disaster in the Union Carbide (India) Ltd., pesticide plant in Bhopal causing over 1,750 people to be killed by poison gas is perhaps the best example (Gladwin and Walter, 1985). On the subject of sales of baby formula in developing countries with unsanitary water supply, see Beauchamp (1983).

Table 6. Private capital flows and private equity flows into I-D countries ($ billion)

Country	*1986*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*
Argentina									
NPCF	0.9	-0.2	2.9	5.6	13.6	10.1	9.7	16.1	19.8
PI(eq)	nil	0.0	0.4	0.4	5.5	1.2	0.2	0.9	2.2
Brazil									
NPCF	-0.1	0.5	3.6	9.7	16.2	12.3	20.0	29.7	43.4
PI(eq)	nil	nil	0.8	1.7	5.5	5.1	4.4	4.0	3.8
Chile									
NPCF	-.5	2.1	1.5	1.8	2.4	5.1	5.5	7.4	9.6
PI(eq)	nil	0.3	0.0	0.3	0.4	0.9	0.3	0.1	0.5
Colombia									
NPCF	1.6	0.3	0.2	0.7	2.1	4.3	4.7	7.7	10.2
PI(eq)	nil	nil	nil	nil	0.2	0.3	0.1	0.3	0.1
Indonesia									
NPCF	0.8	3.2	3.4	4.6	1.1	7.7	11.5	16.2	10.9
PI(eq)	nil	0.3	0.0	0.1	2.5	3.7	4.9	3.1	0.3
Malaysia									
NPCF	0.8	1.8	4.2	6.1	11.3	8.5	10.1	12.8	9.3
PI(eq)	nil	0.3	0.0	0.4	3.7	1.3	2.3	4.4	-0.5
Mexico									
NPCF	0.6	8.3	12.0	9.2	21.2	20.7	16.0	25.2	20.5
PI(eq)	nil	0.6	4.4	5.4	14.3	4.5	0.5	3.9	2.1
Philippines									
NPCF	0.4	0.6	0.4	-0.7	3.3	3.9	4.3	5.0	4.2
PI(eq)	nil	nil	nil	0.3	1.4	1.4	2.0	1.3	0.1
Thailand									
NPCF	-0.2	4.4	5.0	4.3	7.5	4.4	10.0	13.6	3.4
PI(eq)	0.0	0.4	0.0	0.0	3.1	-0.5	2.2	1.6	-0.3

Notes: NPCF = net private capital flows; PI(eq) = portfolio investment in equity markets (annual flow).
Source: World Bank (1999c). *World Development Indicators* (Washington, D.C.: World Bank)
The data set did not provide data for either Korea or Singapore.

of accommodating higher levels of technology thereby inducing the creation of new affiliates. The realized benefits of FDI also should provide confirmation that a policy framework supportive of FDI consistent with the goals of sustainable development complements well the return-seeking motives of FDI. Still, the type of FDI flowing into a country is not always under the control of the country; it simply may not possess assets and/or resources that can be exploited in an economical way without some sort of incentive housed within the policy framework. It is therefore crucial for sustainable development that incentives geared to attract FDI are consistent with the environmental concerns and objectives of the Rio Summit.

Inward debt investments constitute "traditional portfolio investment" and are ordinarily denominated in hard currency (that is, not the borrower's currency).[11] Such loans made to governments and or private entities in a developing country usually have long maturities and are endangered only by serious economic problems in the debtor country. A serious recession or a crisis can affect the ability of the debtor to service the debt or even result in default.[12] The long (original) maturities of these loans means that they can be traded in secondary markets in periods of

[11] However, see the account of the Thai crisis below.

[12] The existence and transparency of bankruptcy law is a component of the institutional infrastructure.

stress but that they cannot bring about a capital flight unless local firms (including the debtor) buy them back and, improbably, use hard currency to effect the purchase. Of course, reliance on debt investment is vulnerable to the drying up of supply in the event of bad performance by the debtor's economy and/or an increase in the risk premium when lending ultimately resumes.

Modern foreign portfolio investments (MFPI) usually comprise acquisitions of equities in (emerging) stock markets in developing countries: there are also some investments in debt instruments denominated in local currency and traded locally. The assets are, therefore, denominated in the currency of the host country and, unless closely tied to exports, are sensitive to economic conditions in the host country. The existence of an equity market of adequate efficiency in a developing country usually indicates that the country perceives itself to have achieved sustainable growth. Thus, poor countries are unlikely to be able to attract noteworthy inflows of MFPI.

In recent years investments in equity markets in I-D countries by asset-holders based in industrialized countries have increased substantially (tables 5 and 6). The most important way in which this flow of funds occurs is through the creation of mutual funds (unit trusts) in industrialized countries which specialize either in equities in one country or in a region. These funds are able to reduce transaction costs for investors, provide country-specific knowledge and proselytize investors on the virtues of international portfolio diversification as a sales promotion technique (notwithstanding caveats in the prospectus). Mutual funds can also give ultimate beneficiary owners of equities the impression, not always warranted, that by having a country specialist provide local day-to-day control over their assets their capital will be reasonably secure against sudden financial crises.[13]

As of September 1996 there existed 375 equity mutual funds specializing in Asian markets with asset values in excess of $40 billion (table 5). There also existed 31 funds which specialized in Thai securities with assets of $2.8 billion. While this was small in relation to international claims by foreign banks of about $70 billion, it was important because of its ease of encashment and lack of any fixed maturity (table 6). Equity investments are inevitably denominated in the capital importer's currency. Equities have no predetermined maturity and are traditionally regarded as long-term liabilities. However, in a liberalized system of markets and from a narrow international flow-of-funds aspect, the foreign-owned equities are easily-encashable assets (though not, in a technical sense, liquid). They can be sold at the going market price in an established market quite quickly and promptly converted to the creditor's home currency in the foreign exchange market (subject to any dislocations which exist in a crisis situation and subject to the existence of capital controls). To the extent that the capital importing countries use these inflows to finance investment in long-term projects, the capital-importing country is financing long-term investments with easily encashable liabilities and is contravening good financial practice of matching the maturities of asset and liability. Only if the financial system is robust enough so that equity flows are not volatile or the central bank has sufficient reserves of foreign exchange or lines of hard-currency credit to negate any lack of confidence, could financing investment with easily encashable funds be an appropriate policy.

The existence of foreign-owned equities in an internationally-liberalized system drastically increases the host country's optimum volume of foreign-exchange reserves. This quantum has traditionally been defined in terms of necessary imports (a flow) but should now allow for the inclusion of encashable liabilities to foreigners (a stock). This represents a fundamental change in concept and sharply reduces the benefits of the MFPI. Note too that the benefits derived from the inflow of foreign saving into a local equity or stock market depends upon the efficiency of that market as an allocative device (Singh, 1992) as well as upon the additional volume of new issues of equity by locally-owned firms attributable to the reduced cost of equity capital.

Competition among mutual funds in the industrialized world has forced some firms to seek out new areas for investment. Helliar and others (1998) report on the criteria by which emerging equity markets are opened up for investment by British mutual funds. Clearly, foreign fund managers will seek to escape from the effects of a local crisis as best they can. The result of the infusion of foreign funds into local equity markets is a substantial overhang of potentially volatile foreign exchange. A crisis, whether originating in the domestic economy or in the foreign exchange market, is likely to generate a sudden outflow of funds and to expand a domestic political or economic crisis into a foreign-exchange crisis.[14] In principle, a country with a sophisticated macro-financial policy could instruct its monetary authority to hedge the value of foreign-owned equities, but this

[13] Certainly, an individual could never hope to manage effectively a portfolio of assets in a series of apparently unrelated volatile markets.

[14] Note that traditional portfolio investment has the lender's asset specified in the lender's (hard) currency so that it is the possibility of inability to service the debt — not the foreign exchange rate — that is crucial in traditional portfolio investment.

seems to call for almost as much financial sophistication as liberalization and will substantially raise the cost of the funds.

According to Singh (1992), the purpose of the original plan for emerging nations to develop stock markets was to attract portfolio investment which would replace debt as a source of hard currencies given that commercial banks in industrialized countries were likely to be unwilling to make loans or buy bonds in emerging markets. This original plan (put forward by the World Institute of Development Economics Research in 1990) argued for the abandonment of control over international capital movements[15] and seems to show a sublime faith in the idea that equity investments in countries which cannot sell debt to foreign banks are long-term and not subject to sudden withdrawals.

PORTFOLIO EQUITY INVESTMENT

Classical economic theory sees net international capital inflows as a source of saving which can be used for capital formation and, at the same time, constitute assets that can be used by investors as a means of achieving a diversified portfolio with a high risk-adjusted rate of return. This interpretation and the argument that the freedom of international capital movements will increase global allocative efficiency both rely on the assumption that economic systems are inherently stable with no important exogenous (or endogenous) shocks to engender a financial crisis. The emerging equity markets must be assumed to have significant depth, breadth and resiliency. Indeed, in the absence of some assurance of the possibility of repatriation of funds in a time of stress, the volume of private portfolio equity investment in developing countries would remain quite small.

A financial system consists of a series of interlinked financial markets which function under known sets of regulations and procedures (including the existence or non-existence of a lender of last resort and of insurance against the failure of deposit intermediaries). The greater the number of financial products traded and the greater the inter-temporal and geographic range of those products, the more sophisticated is the system and the greater is its ability to promote allocative efficiency under tranquil conditions. A well-functioning financial system will be regulated by the financial authorities (in a national system, the central bank) and the set of policies in force and effectively administered (macro-financial policy). Given the existing set of statutes, macro-financial policy is designed to generate a combination of products, practices and regulations which will promote an effective mix of allocative and stability efficiencies.[16]

Such policies are enhanced by central bank cooperation (lines of credit) and by the creation of supranational bodies (for example, the IMF), which are designed to provide temporary assistance. Policymakers must recognize the need for transparency of regulations and practices and for the availability of reliable information so that people who are engaged in any part of the system may have a full appreciation of the way in which the system is designed to work and works (or have reliable access to someone who has such knowledge).[17] People for whom an understanding of the system is necessary include executives of both financial and non-financial corporations – especially executives engaged in international financial transactions – and people employed in the regulation and administration of the system. All of these people need to be aware of the potential for the foreign sector to generate adverse shocks.

The industrialized countries of the world have developed their financial sectors over the last century and a half (and more) and possess a series of highly specialized firms and operatives who are both well-trained and well-equipped to cope with slow change: these specialist firms create linkages among major financial markets across space and time and provide information. Within the industrialized countries, a relatively fast rate of innovation resulting from the liberalization of capital markets, the adoption of new and different exchange-rate systems, the introduction of computers and the ability to quickly transact financial operations throughout the integrated sector has been accomplished with relatively little stress (although the crises of the pound sterling and the Italian lire in 1992 could be attributed in part to a failure of national central banks and/or treasuries to understand the degree to which new financial instruments, such as derivatives, could be profitably used by private firms to punish badly overextended, vul-

[15] This required the elimination of section 3 of Article VI of the International Monetary Fund's Articles of Agreement. The question of the absence of capital controls is considered in Section IV below.

[16] Macro-financial policy can be seen as the financial equivalent of macro-organizational policy (Dunning, 1992) which is designed to make the country attractive to internationally-mobile productive activities. This paper does not address "monetary policy" designed to reduce the variability of GDP around its trend.

[17] People who are active in only one aspect of the system, for example, depositors in a financial intermediary, need have a knowledge only of the institutions which they use and any related institutions.

nerable national currencies).[18] Even given that advanced capitalist economies are likely to have efficient financial infrastructures does not mean that mistakes cannot happen and that crisis is impossible. In addition to the foreign-exchange crises of sterling and the lire, the near failure of Long-Term Capital Management in the United States in 1998 was only resolved by astute and massive rescue operations.[19] That these experiences did not result in major instability offers proof of a good measure of stability efficiency in the financial system of the industrialized countries.

Generally, the financial sectors of the industrialized countries have avoided severe crises despite the development of domestic and international strains as new regulatory frameworks, new technologies (including new financial instruments) forced new awareness of different dimensions of risk and as portfolio managers and other actors push their analytic models to the limit. Advanced capitalist economies can then be expected to have efficient financial infrastructures, provided that the rate of technological change does not exceed the capacity of actors to keep up-to-date with the intricacies of innovations and provided that prolonged tranquillity does not introduce underestimation of the probability of adverse shocks in the mindset of operators in the market.[20] One consequence of the generally adequate financial infrastructure in industrialized countries is that models of the financial sector in, and transactions among, these countries had substantial resistance to shocks and models of international transactions did not need to specify explicitly the components of financial infrastructure. Unfortunately, most pre-1997 analyses neglected to consider the question of the adequacy of financial infrastructure in developing countries.[21]

An efficient financial infrastructure implies the existence of a financial policy framework that provides for adequate prudential regulation. The latter is a static concept and, as Herring and Litan (1994) and Maehara (1994) suggest, the goal of having prudential regulation keep up with technological innovations in times of rapid change may not, even in sophisticated systems, be feasible. This point overlaps with the idea that as technology advances, problems of enforcement grow and regulation will distort capital markets without an adequate increase in stability-efficiency. This is a strong argument for greater reliance on market forces (i.e. for liberalization) as a means of disciplining firms exposed to excessive risk.[22]

Good financial infrastructure requires: good macro-financial policy and the power to introduce the needed constraints and support systems vested in the central bank; the acceptance by the financial community of the authority of the central bank; good data so that the central bank and operators in financial markets are able to make rational decisions on a reliable basis; and ongoing research into the operations of the system. The greater the number of specialist institutions linking together markets for different kinds of assets and liabilities, the quicker the speed of reaction of these institutions to new information, the more reliable the information, the higher the levels of operator experience and skill in acting in the existing system of financial markets and the greater the mass of financial resources at the disposal of stabilizing institutions, the greater is the adequacy of financial infrastructure of the country. However, there is an internal problem here: the ability to generate good financial infrastructure depends upon the existence of good financial infrastructure. Macro-financial policy must be able to rely on the existence of good data and responsive financial firms if it is to be able to generate good macro-financial policy. Currently, the Chairman of the Board of Governors of the Federal Reserve System is regarded by the financial sector of the United States as a central banker par excellence. He would not be as successful were he to be the cen-

[18] For a discussion of the contribution of computer links to the growth of international financial flows, see Minsky (1986). For an assessment of central bank policy in Italy in 1992, see Salvatore (1998).

[19] The bail-out of Long-Term Capital Management in August, 1998, in New York required an infusion of $3.5 billion.

[20] The latter is the essence of Minsky's (1986) theorem, which can be seen as a variant version of "adaptive expectations". The theorem identifies a subtle but potentially serious reduction in the quality of the financial infrastructure as operators are lulled into a sense of false security by a prolonged absence of adverse shocks or by the creation of unidentified speculative bubbles, possibly caused by general or sectoral "irrational exuberance" (Canterbery, 1999).

[21] The crisis in East Asia in 1997 served as a catalyst for analysis of "why things went wrong". In general, analysts have focused on what may generally be termed "inadequacies of capital markets" rather than on the broader range of characteristics of I-D and poor countries contained within the rubric of "institutional infrastructure" as the idea is developed here. Eichengreen and others (1998) have conducted the most broad-based assessment of which the authors are aware.

[22] Herring and Litan (1994) and Maehara (1994) both advocate allowing individual firms/banks to fail in the expectation that this will not generate a crisis and should cause others firms/banks to reduce their vulnerability and to enhance the stability efficiency of the system. In a system with good stability-efficiency, this is very likely to be so, but the stakes are high and, in many cases, the odds are not knowable. The proposal can be seen as compatible with ensuring that Minsky's (1986) fears of operatives being lulled into a sense of false and overoptimistic security will not occur, but it neglects the possibility that one failure can, in a taut system, start a chain reaction.

tral banker in a country in which good financial infrastructure did not exist.

The lack of an adequate financial infrastructure implies three things.[23] First, the transaction costs of using the system of financial markets will be higher, the greater the degree of inadequacy of the infrastructure. Second, the allocative efficiency of the system will be reduced as individual investors make suboptimal decisions as a result of their lack of understanding of the fine points of the system, from the inferior quality of information available, or from misguided attempts to steer funds to "cronies". Third, the probability of a major crisis is greater than would exist with adequate infrastructure because economic units will not correctly assess uncertainty and the danger of a vicious cycle. The last possibility is significantly enhanced in an open economy allowing transactions on both goods-and-services and capital accounts: it is this possibility of substantial instability that tends to be neglected in traditional analysis.

A system of markets, linkages and skilled operators (good financial infrastructure) is not created overnight and is likely to be very sensitive to culture, tradition, established practices as well as to the set of "formal institutions" inherited from the past. An I-D country may very well have a financial sector which operates with more-or-less satisfactory effectiveness in allocating capital in a closed economy and/or in an environment which is evolving only slowly and the country may have financial infrastructure which enables it to withstand some domestic shocks without creating a financial crisis.[24] Unsatisfactory financial infrastructure is likely to build up stresses over time so that the adequacy of a country's financial infrastructure is likely to deteriorate in the absence of a pause in economic growth and/or advances in financial technologies.[25] Given that institutions and expertise (infrastructure) require time to develop, a system that has been inherited from the past can tolerate only some (unknowable) rate of innovation of financial markets and practices without potentially drastic loss of effectiveness. The critical rate of innovation may easily be exceeded in a developing economy either when the economy has experienced rapid growth over a period of years — and expectations have adapted to assume the inevitable continuation of that growth (Tversky and Kahneman, 1982) — and/or has, in the process, become deeply exposed to the substantially more sophisticated global financial system developed by the industrialized economies with all of the possibility of exogenous shock which "membership" in the global system creates. All of the indigenous participants in a national financial system cannot be expected to have a full appreciation of the benefits and the potential costs of the new internationally-open system. Under these circumstances, there will be a gap between the quality of financial infrastructure in existence and the quality required if stability efficiency is to be adequate in the new more open and sophisticated financial system. It is this gap between the existing and the required quality of financial infrastructure which can be held largely responsible for the crises in Thailand and, through contagion, in other East Asian economies.[26] From a policy framework perspective, then, it is important that adequate regulations and procedures are created to support the function of a solid financial infrastructure: this is an example of (financial) institution building.[27]

In Thailand, financial infrastructure fell short of what was required in virtually every dimension: exchange-rate policy; the sophistication of private financial institutions, recognition of the need to hedge foreign-exchange exposures; culture; the accuracy of firms' financial statements; the effectiveness of prudential regulation; and the vulnerability to a panic withdrawal of non-residents investments in equities.[28] No single dimension was crucial in bringing about the ultimate flight from the baht and the abandonment of the dollar peg on July 2, 1997: all contrib-

[23] Qualifications to the efficiency of the market system usually emphasize the first aspect of greater transaction costs but neglect the second which derives from imperfect, and possibly asymmetric, information. Asymmetric information receives great stress in Eichengreen and others (1998) and the possibility of (deliberately) bad data relatively little analysis. In financial systems in developing countries, the second issue is of major importance because it contributes to the potential for instability (Rahman, 1998).

[24] One of the major benefits from the establishment of branches and affiliates of major global banks in an industrializing country is the introduction of better banking techniques which multinational banks bring with them. These techniques may spill over to indigenous banks if competition between the two groups is allowed.

[25] There is a similarity here to Minsky's theorem: small shocks will allow the financial infrastructure to be improved at some cost of short-run and localized dislocation (cf. Maehara, 1994).

[26] The problem of contagion is not addressed in this paper. Contagion has clearly been a problem in the East Asian crisis but it operates largely through the mindsets of foreign asset holders who, having misread the effectiveness of financial infrastructure in the country in crisis, take steps to reduce their positions in countries with similarly inadequate financial infrastructure and which are suddenly perceived to be potentially subject to similar adverse shocks. For analyses of the East Asian financial crises, see Letiche (1998) and Rahman (1998).

[27] For a definition of "institutions" see World Bank (1999, 22-23).

[28] What happened in Thailand was an exemplar for Indonesia, Korea, Malaysia and the Philippines except that these countries (with the exception of Korea) were shocked by contagion rather than by the original loss of confidence in a national currency.

uted, directly or indirectly, to the crisis. The individual strands of inadequacy can be examined sequentially.

In any crisis which finds its roots in the international sector, foreign-exchange policy needs to be examined first. In an attempt to attract foreign capital and to limit domestic inflation, the Thai government had, with the encouragement of the International Monetary Fund, tied the baht to the United States dollar so that its rate of exchange was fixed. Note that this policy optimistically assumed that the Thai economy had the stability efficiency to withstand any adverse shock that the U.S. economy could withstand. In practice, this proved to be untrue. At a time when the dollar strengthened against other major currencies in 1997, some relative inflation in Thailand caused the baht to strengthen in real terms against the currencies of its competitors on two counts. The net result was that the price-competitiveness of Thai exports was eroded.

In consequence, the central bank needed, if the pegged rate was to be sustained, to raise the yield on loans denominated in baht to finance the reductions in the rate of growth of exports. Banks and non-financial firms which had access to dollar or yen loans were able to borrow in these currencies at substantially lower rates and, in this way, to reduce apparent borrowing costs. Clearly, more sophisticated bankers and executives of non-financial firms would have recognized an interest rate premium to be a sign of potential weakness and would have borrowed in hard currency only if they could have saved a sum large enough to allow for an exchange rate-hedge and would have hedged their positions. It seems that both non-financial firms and banks which borrowed in hard currency to finance activities which yielded baht were naively relying on the continuation of the dollar/baht rate of exchange.[29] Once the peg to the dollar was seen to be in danger of collapse, the baht was subjected to serious withdrawals of foreign capital.

In Thailand, as elsewhere in East Asia, culture made transparent disclosure of financial conditions much more difficult to achieve with the net result that balance-sheet data hid the very highly-leveraged positions of many large firms (as well as the foreign exchange exposure of banks and some large non-financial firms). One way in which the vulnerability was hidden, in addition to lax accounting standards, was through substantial reliance on related-party transactions and through off-balance sheet financing of debt. These conditions made it possible for bankers and executives of non-financial firms to take undue risks without these risks being fully appreciated by foreign lenders and investors.[30] One study (Rahman, 1998) emphasizes the inadequacy of the auditing process in Southeast Asia – particularly by international firms. The study reports "horror stories" of firms given a clean bill of health by an international accounting firm only to fail weeks later. Of course, the local managers of country or regional unit trusts/mutual funds should have been aware of the inadequacies of the auditing process in a region in which they were, ostensibly at least, specialists.

The level of prudential regulation of the financial sector was simply inadequate (as the lax accounting reporting suggests). In part, this was due to a traditional antipathy for disclosure on the part of the Thai banks.[31] Both the general disregard for accurate data and the suspicion of authority made the task of imposing adequate standards of prudential regulation more difficult as did the lack of apparent need for concern with malfunction.[32]

One major weakness of central bank policy was the fact that it used up by far the greater part of its foreign exchange reserves in trying to maintain the peg (in accordance with the IMF policy). When renunciation of the dollar peg proved inevitable, there were no reserves left to support the baht against the swings of speculation which occurred.[33] In consequence, the damage inflicted on Thai firms burdened with debt denominated in foreign exchange was unnecessarily great. The social cost of the crisis was

[29] This was not as naive as it may appear *ex post facto*. Rahman (1998) notes that rating agencies in New York did not reduce their ratings on sovereign debt of the five East Asian countries until well after the start of the crisis.

[30] This lack of familiarity of East Asian practice indicates a substantial weakness in the financial infrastructure of industrialized countries: financial firms were prepared to lend money and to acquire equities without a thorough understanding of the lack of reliability of their data. Clearly, the investment was not sufficient to precipitate a system-wide crisis in the larger and more robust global system.

[31] The Thai banking system contains a large number of banks owned by overseas Chinese who have a very strong antipathy for disclosure and which tend to operate within a network of overseas Chinese firms in the region (Australian Department of Foreign Affairs and Trade, 1995).

[32] Eichengreen and others (1998, 21-22) puts great emphasis on the contribution of the inadequacy of prudential regulation to crisis (to the point that the expression, "inadequacy of prudential regulation" is used six times in one paragraph). The study correctly points out that liberalization magnifies any inadequacy in the network of prudential regulation. Of course, opening the financial system up to a more sophisticated system will magnify the shortcomings substantially more.

[33] This point was made by Peter B. Kenen at the twenty-fifth Annual Conference of the Eastern Economic Association, March 12, 1999, at Boston, Mass.

Table 7. Variables Used in Studies of Determinants of Direct or Portfolio Investment

Grosse	*Singh and Jun*	*UNCTAD*
Market Growth	Market Size	Market Size
Exports/Imports	Market Growth	Change in Market Size
Interest Rates	Exports	Exchange Rates
Credit	Wage Rates	Exchange Rate Variance
Inflation	Taxes	
Fiscal Balance	Work Days Lost	
Foreign Exchange Reserves	Political Risk	
GDP per Capita	Operating Risk	
Price of Oil	Debt Management	
	Home Country Factors	

Mody and Srinivasan	*Taylor and Sarno*	*Dilyard*
Market Size	Credit Rating	Market Size
Cost of Investment	Exchange Rates	Debt Burden
Taxes	US T-Bill Rates	Interest Rate Differences
Labor Costs	US T-Bond Rates	Credit Rating
Propensity for Trade	Real US Industrial Production	Stock of direct investment
Stock of direct investment		Profitability of direct investment
Country Risk		Size of Stock Market
Infrastructure		

substantial in the region.[34] The crisis was reinforced when domestic banks became insolvent when the prices of real assets fell drastically and firms declared bankruptcy.

THE DIVISION OF PRIVATE FLOWS BETWEEN INDUSTRIALIZING/DEVELOPING AND POOR COUNTRIES

It is useful to summarize the argument to this point: both I-D and poor countries need inflows of private foreign investment to achieve sustained development.

Inward FDI requires a certain degree of institutional infrastructure (both financial and legal) which is likely to be available in the higher-income I-D countries but which must be steadily improved through time as MNCs develop higher levels of expectation about the needed level of sophistication in the institutional infrastructure.[35] Poor countries can only hope to achieve inward FDI if they have specific assets which attract MNCs in industries which rely heavily on available assets (Dunning and Narula, 1996).[36] For this they will require a high level of institutional infrastructure which is likely to be most effectively supplied in an enclave. Poor countries are also likely to need to have the capability of negotiating with MNCs and of formulating an inward-investment policy framework (with a full knowledge of the potential costs of such a plan). While the resources needed to attract inward FDI probably have high opportunity cost, the direct benefits and positive externalities should also be high.

[34] In addition to the usual indicators of cost, there is a real possibility that the Thai economy suffered as Thai-owned firms were so weakened by the crisis as to be acquired relatively cheaply by foreign MNCs. As yet there are no data on this phenomenon and it presents scope for a very interesting inquiry.

[35] The Commission of Sustainable Development highlights the important role of government in institution building for financial sector development.

[36] Dunning and Narula (1996, 1-3) identify the deficiency in "location-bound created assets" as a cause of the low rate of inward FDI in poor countries. This concept comes close to the idea of institutional infrastructure since the assets have to be created by the local (host) economy and cannot be supplied by the MNC except in a defined enclave in which event the foreign affiliate is effectively cordoned off from the host economy.

Table 8. Concentration of foreign direct investment in a select group of countries, 1990-1997 (per cent)

	1990	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*
Share held by top 12	70.5	67.3	72.6	74.3	77.4	72.2	74.6	69.8
Share held by top 8	62.9	61.0	68.6	69.1	69.3	65.0	66.4	62.4
Share of top 12 held by top 8	89.2	90.6	94.6	93.1	89.6	90.1	89.0	89.4

Source: Calculated from World Bank, World Development Indicators, 1999.

Table 9. Concentration of private debt flows in a select grouping of countries 1990-1997 (percent)

	1990	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*
Share held by top 12	*61.1*	*87.6*	*62.1*	*64.3*	*91.7*	*82.4*	*86.4*	*71.8*
Share held by top 8	*62.8*	*68.6*	*56.0*	*56.4*	*58.6*	*67.4*	*65.6*	*56.3*
Share of top 12 held by top 8	*102.9*	*78.4*	*90.3*	*87.7*	*64.0*	*81.8*	*75.9*	*78.5*

Source: Calculated from World Bank, World Development Indicators, 1999.

Inward traditional portfolio investment also requires a discernible degree of institutional infrastructure but will be judged mainly on the ability of the economy to avoid financial crises. Failure to exhibit a satisfactory level of institutional infrastructure will probably result in a higher cost of borrowing for some countries rather than a complete lack of availability. While financial infrastructure is important, the other dimensions cannot be neglected.

Inward modern foreign portfolio investment must be sustained in the event of recession or financial stress lest its exodus aggravate adverse conditions and instigate a financial crisis. Poor countries will not be able to attract MFPI because of the absolute lack of financial infrastructure. Industrializing/ developing countries must recognize the vital importance of good financial infrastructure and must take conscious steps to generate it.

Attracting inflows of private portfolio investment to a developing economy can be valuable as a supplement to other types of investment inflow. However, if the inflows are not retained and are dissipated by outflows, a policy of attempting to attract easily-encashable foreign capital may not be a good one (irrespective of the efficiency of the local equity market). The damage inflicted by a crisis is simply too great. The key to the retention of MFPI is strong financial infrastructure. Since one purpose of strong financial infrastructure is to deter the existence of financial stress and to preclude panic repatriation of funds in times of financial stress, there is a question as to whether completely unimpeded capital mobility is appropriate for developing countries.[37]

The major argument for complete liberalization of capital movements (that is, the complete absence of controls on international funds transfers) is the enhancement of global allocative efficiency. There is nothing wrong with this goal[38] provided that the countries have adequate financial infrastructure and most analyses now address the ability of a country to effectively create various aspects of financial infrastructure (for example, prudential regulation and good macroeconomic policies). Indeed, financial capital movements are extremely difficult to control and have become more difficult in the light of recent technological innovations. Any regime of controls runs the danger of seriously distorting capital flows so that the cure may be worse than the disease.

Such a policy must address the level of sophistication of financial infrastructure in all of its dimensions. It is perfect freedom of capital movements which allows the easy encashability of assets and the

[37] The current policy of the IMF is, on the instructions of its policy-setting committee (which comprises finance ministers and central bankers), to amend the Fund's Articles of Agreement so that the Fund can promote the orderly liberalization of capital movements (Eichengreen and Mussa, 1998, 16). Analyses of the process are now subject to more caveats than in 1997 (Fischer, 1997, 1998).

[38] Particularly with respect to direct and traditional portfolio investment.

Table 10. Concentration of portfolio equity flows in a select grouping of countries, 1990-1997 (per cent)

	1990	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*
Share held by top 12	66.7	87.7	91.4	93.5	71.8	68.7	59.8	61.9
Share held by top 8	52.7	83.2	67.5	76.1	56.9	48.6	43.4	54.9
Share of top 12 held by top 8	79.0	94.8	73.8	81.4	79.3	70.7	72.6	88.6

Source: Calculated from World Bank, World Development Indicators 1999.

Table 11. Portfolio equity and direct investment in a select group of countries, 1993–1997 ($ billion)

	1993	*1994*	*1995*	*1996*	1997
Direct investment in:					
Argentina	*3.3*	*3.1*	*4.8*	*5.1*	6.6
Chile	*1.0*	*2.6*	*3.0*	*4.7*	5.4
South Korea	*0.6*	*0.8*	*1.8*	*2.3*	2.8
Malaysia	*5.0*	*4.3*	*4.1*	*5.1*	5.1
Mexico	*4.4*	*11.0*	*9.5*	*9.2*	12.5
Thailand	*1.8*	*1.4*	*2.1*	*2.3*	3.7
Equity investment in :					
Argentina	*5.5*	*1.2*	*0.2*	*0.9*	2.2
Chile	*0.4*	*0.9*	*0.3*	*0.1*	0.5
South Korea	*6.0*	*2.5*	*3.6*	*3.7*	1.3
Malaysia	*3.7*	*1.3*	*2.3*	*4.4*	(0.5)
Mexico	*14.3*	*4.5*	*0.5*	*3.9*	2.1
Thailand	*3.1*	*(0.5)*	*2.2*	*1.6*	(0.3)

Source: Calculated from World Bank (1999). *World Development Indicators* (Washington, D.C., World Bank).

concomitant conversion of local funds into hard currency.

A financial system in which data are not reliable and operators are ignorant of the implications of membership in a global system is in danger of having inadequate stability efficiency.[39] The benefits foreseen by advocates of complete mobility of international capital would, if adequate stability efficiency is to be maintained, require a highly sophisticated financial sector in each and every country.

Rahman (1998, 36) calls for international accounting firms to take the necessary steps so that the quality of audit services provided by their national practices all over the world does not fall short of practices

[39] The real cost of a crisis in an I-D country depends very much on the degree to which the other countries in the world are able to maintain an open market for the crisis country's exports. This requires an importer of last resort and is a role to be filled by the world's financial hegemony. The cost to the crisis country exceeds the bankruptcies of existing firms: it includes the very weakened condition of surviving firms and the high probability that the better of these firms will be acquired by foreign multinational corporations at the expense of national net worth.

in North America and Europe. This recommendation is based on the failure of firms that had received a "clean bill of health" only a few months earlier but it conjures up severe problems of extraterritoriality. Clearly Rahman is correct in the sense that common accepted standards of accounting would preclude the possibility of bad investments by lenders and mutual fund managers in the industrialized world but, like the Panglossian vision of a world with completely liberalized movements of portfolio capital, the approach neglects the adequacy of financial infrastructure (the state of preparedness of the financial sector to conform to the conditions required). Eichengreen and others (1998) offer a sensible review of the problems that must be confronted before freedom of financial capital can be as widespread as liberalized international trade now is. But the study fails to consider the cost of the inordinately larger reserves of foreign exchange which are required as well as the (opportunity) costs of the expenditure of resources in developing the necessary financial infrastructure (with its heavy demands on human capital) as a cost to be offset against the marginal benefits of freedom of international capital movements.

THE SIMILARITIES OF THE DETERMINANTS OF THE TWO INFLOWS: AN EMPIRICAL STUDY

As important as ODA is to promote economic development, it is not sufficient to sustain development. Ultimately, other sources of capital will be needed, and I-D countries are turning increasingly to the private sector to foster economic growth. The private sectors of I-D countries are, however, not sufficiently strong to generate all the private capital needed for continuing economic development. What cannot be raised internally therefore must come from external sources. External private capital flows into a developing country in two forms, direct and portfolio, with portfolio consisting of modern portfolio investment (equity) and debt.

Generally speaking, those entities that engage in direct and portfolio equity investment do so for different sets of strategic reasons. Direct investment in real assets implies the desire to control assets, while portfolio investment uses the ownership of assets to earn a definable return or gain.[40] As the ability of firms, institutions and individuals to invest in the private sectors of other countries becomes more complex in a globalized financial marketplace, however, the distinction between what functions as direct or portfolio investment can become less clear (Dunning and Dilyard, 1999). For example, it is conceivable that a firm can engage in a portfolio of several (relatively small) direct investments in several countries with the idea that those investments that do not meet previously established criteria will be divested. On the other hand, a consortia of investing entities, each making what essentially is a portfolio investment, could pool their resources to exert functional control over the firm in which the investment has been made.

Historically, studies addressing the determinants of private investment in I-D countries have treated direct and portfolio investment as distinct entities, concentrating primarily on internal country-specific (pull) factors to explain direct investment and external (push) factors to explain portfolio investment. Country-specific factors include domestic market size and/or growth, the history of exchange rate variability, and those such as interest rates, inflation, political risk and the existing stock of direct investment that address the general environment for direct investment. External factors, on the other hand, refer mostly to the interest returns available in alternative locations (developed countries) for portfolio investment; the expectation of higher rates of return on equity and bond investment in I-D countries pushes investment to those countries. Recent studies by Grosse (1997), Mody and Srinivasan (1998), Singh and Jun (1995), UNCTAD (1993), and Taylor and Sarno (1997), however, have expanded the list of explanatory variables for both types of investment to include internal and external variables. Recognizing that the functional purposes of direct and portfolio investment can be similar, Dilyard (1999) developed a common set of explanatory variables applicable to both. Table 7 presents a summary of the variables identified in all of these studies.

In his empirical study of the net flows of direct and private portfolio[41] investment to three East Asian and three Latin American countries[42] from 1980 to 1995, Dilyard used the following set of variables to explain each type of flow:

- Gross domestic product (market size);
- The ratio of total annual interest paid on all debt (domestic and foreign) to gross national product (debt burden);

[40] The operational distinction between direct and portfolio equity investment actually revolves around control, with 10 per cent ownership of a company deemed (by the UN, World Bank and others) to be sufficient to exercise managerial control.

[41] Private portfolio investment was defined as equity and all non-guaranteed debt, including bonds and bank loans.

[42] The East Asian countries were Indonesia, Malaysia and Thailand, while the Latin American countries were Argentina, Brazil and Chile.

- The ratio of short-term debt to total private debt (debt burden);
- The difference between the average annual rate on US Treasury Bonds and the average interest rate on all new private debt added during the year (interest rate differences);
- The difference between the average annual US prime lending rate and the average interest rate on all new private debt added during the year (interest rate differences);
- A comparison of the country's credit rating as determined by Institutional Investor magazine and the average credit rating for all rated countries (credit rating);
- The stock of all inward direct investment from all sources (stock of existing direct investment);
- The combined gross domestic product of developed (OECD) countries (market size);
- The stock of all outward-bound direct investment from OECD countries to I-D countries (a push factor)
- The profitability of US direct investment in an I-D host country (investment environment);
- The year-end capitalization level of the I-D country's stock market (a pull factor);
- The year-end capitalization of developed country stock markets (a pull factor).

Dilyard modelled the combined net flows of direct and portfolio investment against these variables using time series analysis techniques. Adjusting for the incidence of high degrees of correlation among variables common to this type of analysis, he found that either or both direct and portfolio investment in each of the two regions was strongly influenced by GDP, credit rating, the profitability of direct investment, and the size of the country's stock market.

These variables are pertinent to the role of private investment in sustainable development because they point to the environment in which investment can flourish. A large domestic market (GDP), a growing private sector (size of stock market), signs that the economy can support private investment (profitability), and evidence of fiscal and/or monetary infrastructure (credit rating) are all viewed positively by potential private investors. Thus, continuing inflows of private investment, in all its forms, is evidence that foreign investors view favourably the prospects of ongoing or sustained development in a country.

Applying this analysis to the concentration of direct and portfolio investment shown in tables 2, 3 and 4 suggests that only a small number of countries are expected to have sustained development. In fact, the concentration of investment flows can be shown to be even more severe by focusing on the six countries used in Dilyard's study plus China and Mexico. During the 1990s, these eight countries have been the destination of the vast majority of direct and portfolio investment.

The concentration of direct investment in these eight countries is demonstrated in table 8. On average, 90 per cent of the direct investment going to the twelve countries in tables 2, 3 and 4 and roughly two-thirds of the direct investment flowing to all I-D countries have gone to these eight countries from 1990 to 1997. This trend is mirrored in private debt. As table 9 shows, the eight countries were recipients of, on average, a little over 60 per cent of net private debt flows to all I-D countries. Debt flows, however, experienced more volatility than direct investment. Some of this volatility is due to the inclusion in debt flows of debt from private creditors that actually is guaranteed by a third party. Economically stronger countries tend to receive proportionally smaller amounts of this kind of debt than private, non-guaranteed debt. Thus, the large ($40 billion) increase in private debt going to I-D countries from 1995 to 1996 is likely made up of a significant portion of private, but guaranteed, debt.

If the distribution of direct investment and private debt suggests a strong relationship between a country's economic health and its receipt of private capital, what does the pattern of equity investment say? As is seen in table 10, the eight countries attracted anywhere from two-thirds to four-fifths of all equity investment in I-D countries from 1991 to 1993, but a lower amount from 1994 through 1997. Given the relative stability of direct and portfolio debt investment flows, one might expect the behaviour of portfolio equity investment to also be relatively stable.

Equity investment can be notoriously volatile and reacts quickly to any news that is expected to affect economic growth either positively or negatively.[43] Thus, even countries that appear to be an attractive location for direct investment may have undercurrents that frighten away portfolio equity investment. As evidence, examine the pattern of portfolio equity and direct investment in Argentina, Chile, South Korea, Malaysia, Mexico and Thailand from 1993 to 1997 (table 11). Each of these countries had at some point in that period either an economic crisis of its own or were adversely affected by the contagion of crises occurring in the region.

The response to these economic concerns in portfolio equity investment was rather immediate and dramatic capital flight. The problem was exacerbated as

[43] As evidence of this statement, one only need examine the recent turmoil in the United States stock market being caused by a combination of inflation fears, disappointing corporate earnings reports, and expectations on Federal Reserve Bank policy pronouncements.

well by its suddenness; these countries had the outward appearance of internal economic strength. Once weakness was revealed, the assumption of stability disappeared. The duration over which this capital flight occurred was (and is) a combination of the severity of the problem, investor expectations about the future and the existence of buying opportunities.[44]

Direct investment, on the other hand, did not experience the same kind of volatility as did portfolio equity investment. Indeed, in many cases direct investment actually increased. One reason this may have been occurring is that the flight of equity investment had created bargain basement buying opportunities for direct investment.[45]

It is difficult, of course, to use aggregate data to get inside the heads of those who engage in portfolio equity or direct investment, particularly with regard to their reactions to internal economic conditions. The empirical data presented here suggests that it is in portfolio equity where the most susceptibility to uncertainty occurs and where the lessons of East Asia (and more recently Eastern Europe) are most acute. As noted earlier, one of the problems that surfaced in Thailand in 1997 was the revelation of an amorphous financial infrastructure that brought about a crisis that not only severely damaged Thailand's economy but infected other country's as well. It also is instructive to note that the underlying causes of Thailand's weak financial infrastructure were largely irrelevant to the consequent capital flight; all that mattered was that which was believed to be true was proven false.

It is impossible to know how less severe capital flight would have been from these countries had the underlying economic fundamentals been shown to be more robust. Likewise, it is impossible to know how less violent the more recent reactions to similar uncertainties about the financial infrastructure of Russia would have been had the events in Thailand not occurred. The badly negative responses to unfavourable news about I-D countries' financial sectors, however, reinforce our premise that a sound financial infrastructure is a necessary component of sustainable development.

Arguably, a different set of policies, particularly those relating to financial infrastructure and prudent supervision, could have kept the crisis in East Asia from occurring. While a greater degree of disclosure of financial conditions (both at the national and firm level), rules, regulations and practices might have made those entities investing in East Asia more aware of the full nature of the financial environment in which they were participating, it may also have depressed the level of investment in the first place. This relationship between financial infrastructure and policy frameworks and the level of FDI and portfolio investment, which is revealed through empirical studies that address the determinants of those kinds of investment, thus becomes increasingly important when formulating and implementing policy.

POLICIES FOR INSTITUTION BUILDING

Both domestic and foreign private investment are responsive to the quality of institutions in a developing country. This fact requires that policymakers give active attention to the need for building institutions and that they recognize the difficulties of the task. Better institutions (World Bank, 1999b, 22-3) facilitate economic growth in much the same way that improved physical infrastructure contributes to economic growth. However, where the need for upgrading physical infrastructure in both quantity and quality is made clearly apparent (to both taxpayers and policymakers) by bottlenecks and increases in transaction costs, the need for upgrading institutional infrastructure is less obvious. Moreover, improvements in institutional infrastructure may encounter resistance because they require reversing precedent, confronting cultural values, or even worse, threaten the narrow economic interests of the members of the élite.

The need for good institutional infrastructure is not limited to the financial sector, though there is a strong case to be made that the need for good institutions in that sector is paramount.[46] Foremost among these in a world in which the superior efficiency of a system relying on free markets and private sector development are the existence of property rights (legal)

[44] Whenever a large amount of investment flows out of or into a stock market over a relatively short period of time, the possibility that investors are responding to a herd instinct in addition to (or in place of) more quantifiable factors is present. While this behaviour is not based on financial reasoning, its impact on the affected market can be profound.

[45] For example, East Asian cement manufacturers, which are faced with high over-capacity and flagging demand, have been the target of much acquisition activity.

[46] Gray (2000) identifies eight areas in which the quality of institutions ("socio-economic infrastructure") is important: legal; educational; technological; financial; communications; cultural; government administration; and the political system. "Socio-economic infrastructure" is a slightly broader concept than "institutional infrastructure": the former includes the ability and the willingness of the population to work within an existing set of institutions, as well as the set of institutions itself. That this distinction can be important in the financial sector is shown by some features of the Thai financial crisis in 1997. With reference to FDI, this distinction may be taken to include the attitudes and work ethic as well as the skills of the labour force.

and the probity and constructive commitment of those in political power (government administration).

Foreign direct investment is, by definition, private. Nations seeking to attain sustainable development must compete among themselves for a share of the flow of FDI from richer to poorer countries. To attract FDI to generate offshore production of goods and services destined for markets in OECD countries, with all of the current account benefits that this genus of MNC affiliates promotes (Fry, 1996), an efficient set of institutions that both accommodates and nurtures private sector development is essential. While the benefits of good institutional infrastructure apply to both foreign-owned and domestic firms, foreign-owned capacity is, because of its international mobility, much more locationally sensitive to the quality of institutional infrastructure.

Fortunately, inward FDI does not require that the availability of good institutional infrastructure be nation-wide. Countries in the early stages of achieving sustainable development can create enclaves (restricted geographical regions) in which both good institutional and physical infrastructure are provided.[47] Successful development in enclaves can create spillover effects and lead to wider improvements in infrastructure and, in the process, provide growth impetus to the rest of the national economy.

Traditional foreign portfolio investment also requires good institutional infrastructure. Evidence of an example of this need is the decision of the Japanese Government in November 1999 to shift the focus of its aid to Indonesia from financial ODA to the loan of financial experts.[48] The cited reasons for the change in policy are the "lack of legal know-how and the country's shattered banking system". The legal structure and the collapse of the banking system interact in that the non-existence of an operational bankruptcy law and the huge volume of bad debts in the banking system combine to render the banks incapable of transmitting financial transfers to firms in the export sector.

Modern foreign portfolio investment is probably the source of external funds (saving) that is most sensitive to the quality of institutional infrastructure. Only very high quality institutions can both attract and retain MFPI which can be so subject to herd reactions by foreign portfolio managers.

Policy formulation depends upon awareness on the part of policymakers and elected legislators of the need for high quality institutional infrastructure. The first step in promoting institution building is the provision of evidence of the importance of institutions so that policymakers recognize the building of institutions as an integral part of the search for sustainable development.[49] From recognition in general it is a short step to identification of what constitutes qualitative improvements in the various sectors. Identification of those institutions which can most usefully be improved does not mean that the process is simple: conservatism, vested interests, fear of foreign domination and cultural values and tradition can all impede institution building. The process is, then, a long one and it must be conducted with standing commitment and a long-term outlook (thus differing from physical infrastructure which usually can be identified with individual, possibly major projects). The upgrading of institutional infrastructure will require broad-based educational programs if new institutions are to be accepted by those affected.

Governments must recognize, in addition, the importance of both legislation and new, refined regulatory systems. The legal and regulatory dimensions must precede the upgrading of institutional infrastructure because there is an inevitable lag between facilitating more sophisticated practices and the ability of people working in the affected sector(s) to learn to adapt to the new system.

Finally, as the analysis of the recent financial crisis has shown, the rate of institution building required is positively related to the rate of change imposed by circumstance. In context, circumstances can be beyond the control of policymakers, as when new technologies force different procedures upon the national economy. However, a rapid rate of change can also be imposed by opening up the economy (or a sector) to a more sophisticated international system and this constraint must be recognized by policymakers in both countries and in supranational bodies. If institution building has some maximum rate of accomplishment built into the process as the ability of ordinary people to accommodate (institutional) change approaches its limit, then the recognition of that constraint must be explicitly identified in the decision-making process.

INWARD FDI AND THE ENVIRONMENT[50]

The thrust of this paper has been that for both I-D countries and, where possible, for stagnating countries inward direct investment is the preferable for-

[47] This is most clearly seen when the inward FDI is seeking to exploit (depletable) primary resources. Here it is essential that the host government have the inherent skills to negotiate an agreement with the foreign corporation that retains for the host country the Ricardian rent which belongs to the primary resources.

[48] "Japanese Aid to Jakarta to shift to Technical Expertise", *The Straits Times*, 13, November, 1999.

[49] The emphasis on the financial sector in this paper should not be seen as refuting the generality of the argument.

[50] This section draws heavily on OECD (1999), particularly the articles by Gentry and Zarsky.

eign conduit for financing sustainable development.[51] This raises the question of how direct investment can be expected to affect the two objectives of sustainable development other than growth in per-capita income: the preservation or improvement of the environment — reducing the *rate* of environmental depredation — and the development of desirable social programs. It is important to recognize, at this juncture, that any analysis of the effect of FDI on environmental depredation requires that a distinction be drawn between the direct and the indirect effects. The operations resulting from inward FDI generate the direct effect (for example, emissions from factories of affiliates of multinational enterprises (MNEs) or the side-effects of mining a primary resource) and the environmental repercussions of any induced economic growth constitute the indirect effects. A part of any consumption pollution brought about by economic growth may be offset by the reduction of some pollution generated by sheer pressure on resources. Clearly, the indirect effects are likely to include the generation of desirable social programs as well as increased pollution generated by additional consumption.[52] Since the indirect effects are unlikely to be very sensitive to the cause of economic growth (domestically-generated growth or FDI-induced growth) and since economic growth is seen as inherently desirable, this section does not explore the potential indirect effects.[53]

There exist both favourable and unfavourable direct effects. Simple logic suggests that countries seeking to attract inward FDI will regard sacrificing environmental quality as one of many possible incentives which can be offered to internationally-mobile investments. This possibility suggests that these developing countries will become pollution havens and that their environmental quality will be sacrificed for the sake of FDI-generated economic growth.[54] The reverse of this possibility is that established affiliates will transfer to the host nation production processes from the parent corporation and affiliates in more environmentally-sensitive economies and, in the process, reduce the total rate of environmental depredation in the host.

Examples of both kinds of FDI can be found, of course, but it is difficult to substantiate the predominance of either, in part because the generation of reliable data is extremely difficult.[55] There is also a wide range of possible ways in which pollution can be measured and different measures are likely to provide conflicting results. The problems are enhanced when MNEs based in environmentally-sensitive countries attempt to preserve the image of being environmentally friendly by subcontracting out the "dirty" production processes to other, possibly host-country firms. This is referred to as "cascading pollution". Zarsky (OECD 1999) finds evidence that supports both hypotheses. In an attempt to clarify the puzzle, Zarsky (OECD 1999, 52-57) develops a conceptual framework of linkages of which the macro linkages are the most important. The most pessimistic of these is the inability of national or supranational governments to control the behaviour of firms whose activities are internationally-mobile in a world in which poor countries cry out for sources of greater output and the regulation of pollution generation has been consigned to the level of individual states. In some countries, voters have relatively short time horizons so that longer-term problems, such as environmental depredation, are not given the attention they deserve. This concern echoes Kindleberger's (1986) concern with the lack of international public goods in the modern global economy. While recognizing the problems of both analysis and policy, it is worth noting that MNEs are, as a major global phenomenon, less than fifty years old: the society of nations has not yet addressed, with any degree of commitment, the problem of how to regulate the environmental implications of MNEs at the global level. Concern over the environment is necessarily urgent but there is need for commitment rather than despair. The beginnings of such a commitment are to be seen in the growth in the political strength of the environmentally concerned in the more affluent countries.

[51] ODA possibly excepted for the stagnating countries unable to attract adequate amounts of inward FDI.

[52] OECD (1999, 15) seems unduly concerned with the indirect effects: "This approach recognizes that although an investment might be judged 'environmentally-friendly' at the plant level, its operations may contribute to a larger-scale of economic activity at the macro level, which may in turn lead to additional environmental harms". If the source of net environmental damage is generated by the induced economic growth (an indirect effect), this implies that growth is harmful *per se* — unless the role of cascading pollution is important (see below). The argument reverts back to the point made in the first footnote to the effect that poverty elimination had become the "poor stepchild" of the annual CSD sessions.

[53] It is certainly possible, and even probable, that the establishment of foreign affiliate enterprises will give impetus to the improvement of the quality of socio-economic infrastructure – partly by spillovers from the affiliates' activities and partly by increasing the need for higher quality infrastructure.

[54] Given the fungibility among the various investment incentives and performance requirements, environmental quality may be sacrificed not only in terms of the affiliate's operations but also in terms of the mix of incentives offered (Gray and Walter, 1983).

[55] One way to improve the quality of empirical studies is to generate a series of interview-based studies at the industry level such as Lundan's (1996) study of the pulp and paper industry.

There is general agreement that MNEs from environmentally-sensitive countries are more likely to create "environmentally-friendly" affiliates because of the need to maintain a good environmental image in their home country and in other markets in which they compete. Concern for an MNE's general reputation can be an important lever for governments and non-government organizations (NGOs) which seek to ensure that FDI in developing countries is not motivated by the search for pollution havens. Perhaps more important in efforts to ensure that FDI is environmentally-friendly is that any lack (or waiver) of environmental regulation in a country which attracts an exporting affiliate be seen as an implicit subsidy of "dirty production". In this way, the goods produced by the affiliate would be subject to countervailing duties on importation into an environmentally-friendly country (Lundan, 1996, Chap. 2).

Other factors which limit the potential of the polluter haven hypothesis is that cost savings from dirty production are more likely to be realized in countries which are badly in need of inward FDI. Often, industries that would manage to effect substantial cost savings from lax enforcement of environmental controls tend to be heavily capital-intensive so that the exposure to political risk and similar socio-economic weaknesses in potential host countries is substantial.

While Gentry (1999, 37-42) analyses the various options open to governments and NGOs in industrialized countries to exert some control over the degree of environmental depredation which can be exercised by affiliate enterprises, the OECD volume refers only tangentially to the level of socio-economic infrastructure available in host countries. In addition to a lack of voter concern in some countries, the world operates seemingly as a series of independent states so that there is no major collective political understanding and commitments.

To regulate an industry or to put together a winning incentive package calls for a sophisticated set of institutions. These institutions are most likely to be found in I-D countries in which the willingness to cater to pollution-unfriendly processes is likely to be small (or, at least, significantly smaller than in stagnating countries). Since "dirty production" can be seen as an implicit subsidy, affiliates in a pollution haven will be limited to countries in which the affiliate is market-seeking. Countries with sufficiently large domestic markets are I-D countries and will not be sufficiently desperate for inward FDI that they will subsidize polluting industries.

CONCLUSIONS

Reliance on the (private) corporate sector to be the key actor in achieving the goals of the Commission on Sustainable Development will not be adequate. The dichotomy of developing countries into those making steady progress and those in stagnation identifies a group of poor countries that have not yet reached the level of sophistication in institutional infrastructure needed to attract substantial inward FDI or private portfolio investment. This conclusion does not mean that the corporate sector cannot play the major role in the further development of countries which have achieved (even low levels of) sustainable development and these are the countries which we have assumed to be most likely to divert a substantial part of incremental income to social programmes and environmental protection.

Models of economic development have not sufficiently emphasized the need for adequate institutional infrastructure, particularly financial infrastructure. This may be due, in part, to the predilection of economists for analyses which fail to recognize instability in financial markets and interruptions in the development process because of malfunctions of any kind.

It is recognized that many of the countries that are currently stagnating may not have institutional infrastructure which allows them to utilize adequately inflows of ODA. While governments and super-national global institutions may be responsible for the distribution of ODA, it would be valuable for the Commission on Sustainable Development to confront the question not only of how the volume of ODA can be increased but also to develop some criteria which might serve to guide the distribution of ODA among the stagnating economies.■

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ATTRACTING CAPITAL INFLOWS TO AFRICA: ESSENTIAL ELEMENTS OF A POLICY PACKAGE

Louis Kasekende
Ashok Bhundia*

EXECUTIVE SUMMARY

While Latin American and Asian economies have been recipients of large inflows of private foreign capital in the 1990s, Africa has been largely left out of this net private flow to developing economies. As a result, Africa continues to rely primarily on ODA flows to close the domestic savings-investment gap.

Negative investor perceptions are part of the problem. Attracting private capital to Sub-Saharan Africa (SSA) is complicated by negative investor perceptions about the region in general. There is a tendency to lump African countries together as part of a continent that carries high risks to investments and thus is unattractive to potential investors.

This paper analyses those policies that can help promote inward foreign investment into Africa to take advantage of the surge in cross-border flows into developing countries since the 1990s, while being mindful of some of the dangers this can present. The paper recognises that not all African countries are the same: there are characteristics and historical or colonial linkages that give advantages to some countries with regard to FDI and other capital inflows.

Among the most significant impediments to inward investment is political risk (whether perceived or real) and the fact that reforms in Africa seem to take considerable time to enhance the credibility of governments. This is often the result of several serious policy reversals in the past. Therefore, policies that promote transparency and allow for checks and balances against executive power will help to build credibility in the institutions and public offices of African countries. Institutional reform should include strengthening the judiciary and its ability to enforce the rule of law, and providing for an independent central bank for the promotion of monetary stability. Policy credibility can also be enhanced by external mechanisms of restraint through linkages with the European Union and other trading areas. This would be pursued in conjunction with rationalising and strengthening regional trade arrangements intended to increase market size. African countries should also reduce costs of doing business in the region by improving the quality of public infrastructure, investing in people and reducing corruption. But most important is the commitment to ensuring macroeconomic stability and continued reform of the African economies. This is critical for attracting sustainable long-term foreign investment to Africa.

Africa may not currently be a major recipient of inward investment, but the future promises enhanced integration into the global capital market as long as Africa can improve its investment climate.

* Louis Kasenkende is Executive Director for Policy and Research, Bank of Uganda, Uganda. Ashok Bhundia is Senior Research Economist, Bank of Uganda, Uganda.

INTRODUCTION

WHILE Latin American and Asian economies have been recipients of large inflows of foreign capital in the 1990s, Africa has been largely left out of this net flow of capital to developing economies. For example, African and Middle Eastern countries received less than 10 per cent of FDI flows to developing countries. In the case of portfolio flows, Africa received an even lower share of net flows to developing nations — in 1996 it was 1.6 per cent (World Bank, 1999a). As a result, Africa continues to rely on ODA flows for the lion's share of capital inflows to close the domestic savings-investment gap.

Official flows (including grants and debt-service) to SSA have averaged approximately 5 per cent of GNP over the period 1990-95 while the average is one per cent for all developing countries (World Bank, 1996). According to 1999 estimates by the Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC), total official development assistance declined for five successive years prior to 1998. In 1998 it increased by $3.2 billion to $51.5 billion, equivalent to 0.23 per cent of total donor country GDP (World Bank, 2000). The increase in official development assistance in 1998 is mainly associated with the rescue packages for East Asia and Russia. Otherwise the projections point to a decline in 1999. As budget constraints in donor countries become more severe, these flows are expected to fall further in the medium to long-term, while in the short-term conditionalities on their utilisation become stricter and therefore restrict the freedom of recipient countries to choose how funds are utilised. Therefore, it is essential that Africa attracts larger share of private capital flows to finance its development. This is by no means a simple task, or one that can be achieved overnight, but as a first step policy measures need to be identified which can achieve this goal. Beyond this, the task of implementing policy measures is potentially even more difficult.

Even when reforms are successfully implemented, the ability of policymakers to attract private capital to SSA countries is complicated by negative investor perceptions about the region in general. UNCTAD (1995) has the following comment on the issue: "although several countries in Africa have an investment climate that is good, a number of potential investors lump them together with other countries, and see them as part of a continent that is considered not to be attractive for transnational corporations, especially if compared with competing locations in the worldwide FDI market". While a considerable body of literature exists for the Latin American experience with capital flows, and some for East Asia, studies focusing on Africa are virtually non-existent — exceptions include Asea and Reinhart (1995) and Kasekende and Hussain (1997). The areas examined in this literature include the scale and composition of capital flows, their implications for macroeconomic management and their causes and sustainability, among others. This paper identifies those factors that can best encourage capital inflows to Africa, with a special focus on the policy measures that should be taken by governments. The paper also highlights efficient and productive ways in which foreign inflows can be utilised in financing development and ensuring sustained improvements in well-being as measured (rather crudely) by economic growth. Examples will be presented from Uganda's recent experience in the utilisation of foreign inflows.

MEASURING CAPITAL INFLOWS IN SUB-SAHARAN AFRICA

There are considerable difficulties in interpreting the data on capital flows to Africa. Often there is a lack of resources for the monitoring and recording of capital flows resulting in poor data quality. Some countries have kept a hands-off approach in the new liberalised environment so as to avoid sending the wrong signal to investors, who may believe (wrongly) that the old regime of control still exists. Some capital controls remain, but these have been easily circumvented. For example, in order to avoid capital account restrictions, some transactions are misrecorded as current transactions.

The composition of inflows to Africa is skewed towards those types that are most difficult to measure. The outcome has been that inflows to SSA countries have been under-recorded and this has been exacerbated by the absence of recording systems. In some African countries private transfers have reached high levels, such as 9 per cent of GDP in Tanzania and 4 per cent in Uganda (Helleiner, 1998), but it has been difficult to break them down into their constituent parts. Almost certainly some part of these private transfers represents capital account flows. Kasekende and Hussain (1997) find that including private transfers in the measurement of capital flows for Kenya, Uganda, Tanzania, Zambia and Zimbabwe increases them from an average 1.1 per cent of GDP for the period 1986-1993 to 4 per cent. Indeed, the inclusion of private transfers accounts for most of the increase in capital flows to these countries over the period 1990-1993 compared to 1986-1989. It is certainly possible that the increase in recorded private transfers is in fact a recovery, at least partially, in unrecorded foreign direct investment into these Sub-Saharan African economies. In the case of Uganda, the increase in private transfers is partly explained by the return of flight capital and returning Asians (Kasekende and Hussain, 1997).

While there are certainly difficulties in identifying the constituent parts of private transfers, on the whole, Sub-Saharan Africa continues to lag behind

Table 1. Composition of Private Capital Inflows to Developing Countries, (per cent)

	1978-82			*1990-93*		
	Latin America	*Asia*	*Sub-Saharan Africa*	*Latin America*	*Asia*	*Sub-Saharan Africa*
FDI	15.1	15.0	9.8	33.0	37.5	140.3
Portfolio	4.9	3.6	0.0	68.1	14.2	10.9
Long-term bank loans	63.6	53.9	53.9	-32.1	21.7	-143.5
Short-term loans	16.4	27.5	36.3	30.5	27.0	92.3

Source: IMF, *International Financial Statistics*, various issues; and World Bank, *World Debt Tables*, various issues

other developing regions of the world in attracting foreign capital inflows, especially in absolute terms. World Bank estimates based on capital account and debt/equity inflows indicate that during 1990-94 inflows averaged more than $180 billion a year. Of these, only $16 billion a year went to SSA countries.

Notwithstanding the above, Africa played host to increased levels of private capital inflows in the period 1994 to 1997. In that period, private capital inflows increased by a factor slightly higher than three from $4.8 billion to $16.3 billion (Kasekende and Kitabare, 1998). This was mainly on account of increased levels of foreign direct investment and other net investments. Kasekende and Hussain (1997) established that inflows to Africa, and especially to Sub-Saharan Africa, amounted to levels, measured in relation to GDP, comparable to flows to other developing countries. Indeed, the debate on the possible causes and the challenges to macroeconomic management of increased capital inflows was being considered as part of broader policy measures to sustain growth and promote macroeconomic stability. Apart from the potential adverse impact of these inflows, the recipients of private capital were able to finance higher levels of private sector investment rates. Uganda is a clear case where levels of investment well above its savings rate are largely financed by both private and public foreign savings.

In response to the East Asian crisis, developing countries in general suffered a contraction in private sector inflows. Private inflows to developing countries declined in both 1997 and 1998 from $212.1 billion in 1996 to $149.1 billion in 1997 and to $64.3 billion in 1998 (World Bank, 1999b). The decline largely affected the Asian countries, which suffered massive reversals of inflows in both 1997 and 1998. With the exception of South Africa, Africa largely survived the negative impact of the East Asian crisis on inflows due to the limited integration of their financial markets into the global capital markets. Indeed, FDI and net portfolio flows in 1998 were recorded at levels comparable to 1996. The issue then is how does Africa prepare itself for higher levels of volatility that may be associated with a deeper integration into the international capital markets.

CAUSES OF CAPITAL INFLOWS

Before putting together a policy package designed to attract foreign capital it is first necessary to identify factors that can achieve this goal. The literature groups the factors that attract foreign capital into two groups: external "push factors" and domestic "pull factors". Among the "pull" factors are:

- economic and political reforms that boost confidence in the economy;
- reforms such as debt restructuring which ease the long-run foreign exchange constraint and therefore enhance the sustainability of foreign exchange inflows;
- liberalisation of foreign exchange flows (both current and capital) in the balance of payments;
- simplification of red-tape requirements for direct and portfolio investment; and
- liberalisation of restrictions on private sector borrowing from abroad.

Among the "push" factors are:

- the relative decline in international interest rates (mostly US dollar rates) when compared to interest rates in developing economies;
- cyclical downturns in economic activity in developed economies, which reduce the demand for investment funds; and

- a move towards international diversification of asset portfolios by major portfolio investors such as pension funds and insurance companies.

The literature identified both push and pull factors as being behind the increase in capital flows to developing economies in the 1990s (for example, Asea and Reinhart, 1995). However, it is domestic or "pull" factors over which policy-makers can have a direct impact in attracting inflows of private capital.

THE POLICY PACKAGE

While public investment rates in Africa are comparable to those in other developing countries, private investment rates are much lower (Collier and Gunning, 1999). In a world of mobile capital, capital should flow to those areas where returns are highest. But while returns in Africa are high in nominal terms, in risk-adjusted terms they may not be, suggesting that reducing the risk factors in Africa can help attract more foreign capital. A policy package that reduces risk factors to foreign investment should also be able to deal with many of the risk factors that result in low levels of domestic private investment.

Reducing Political Risk

Enhancing the credibility of reforms

The international image that Africa has is one of unstable governments, military coups and abrupt policy reversals. Moreover, Sub-Saharan Africa seems to be seen as one homogeneous continent and therefore the bad behaviour of a few governments often leads to a negative image for all. Evidence from surveys suggests that policy reversal is regarded by investors (both domestic and foreign) as the main component of overall investment risk (Collier and Gunning, 1999). This is reflected in sovereign credit ratings for Africa. Although there are no formal credit ratings available for SSA outside South Africa, a number of agencies (among them the Economist Intelligence Unit) provide a measure for sovereign credit risk. Political and policy risk are given the largest single weight in the overall rating. However, most of the available measures have a large subjective element in their calculations (Bhinda and Martin, 1994) which bias the ratings downward.

Actions by governments that increase uncertainty (especially policy reversals) are particularly bad for attracting foreign capital. Uncertainty complicates long-term planning and deters investments that require large initial start-up costs or would entail large exit costs in the event of upheaval. Hadjmichael and others (1996, 29) concludes, "the most important impact of policies on private investment behaviour was through their effect on macroeconomic stability and uncertainty".

Policy reversals in the past have also made it more difficult for present Governments to credibly commit to reforms today. Building credibility is likely to take time while potential investors take a wait and see attitude. For example, in Uganda, even though the law on the return of property to their Asian owners was passed in the early 1980s, it was not until the late 1980s and early 1990s that Asians began to return in numbers.

Credibility also matters for the sustainability of reforms. Reforms that are credible are more likely to be sustainable in the long-run as economic agents react positively to policy measures and result in a virtuous circle of behaviour. For example, a credible programme of reforms can lead to increased domestic and foreign investment creating employment and tax revenues that can be used to cushion some of the costs of reform. When reforms lack credibility the intended benefits may take much longer to materialise while the costs of reform mount. Those sections of the population that are most burdened with the social costs of reforms may successfully lobby for policy reversal. Therefore, it is essential that reforms undertaken by governments have the support of the people from the very beginning and that there is a dialogue between interested parties and governments.

There may be mechanisms of restraint, both external and internal, that reduce the ex-ante probability of reversal and thereby increase the credibility of the reform process itself. External restraints might include conditionalities on foreign aid or membership of, and signatory to, international organisations such as the World Trade Organisation (WTO) which limit the ability of governments to impose discretionary measures such as increases in import duties, for example. However, on aid conditionality, Burnside and Dollar (1997) find that during a period of generally increasing aid conditionality there was, in fact, a deterioration of country risk ratings in Africa. This may be why the Highly Indebted Poor Countries (HIPC) Initiative is provided for only those countries that have implemented policy reforms over a sustained period.

Internal restraints include providing the central bank with legal independence, which would go a long way to ensure that monetary policy is free from political interference. According to Collier and Gunning (1999), internal restraints may be weaker because of autocratic behaviour by African presidents in the past. Measures should also be put in place that enhance judiciary independence so that it can operate without political interference. This will also ensure that politicians operate within the law, and where they do not, the judiciary can act as a check. An example is the recent impeachment of several Ministers in President Yoweri Museveni's Government in Uganda by Parliamentary majority. Such checks and balances are welcome developments, providing for effective monitoring of Government actions.

Political reform

Political disorder is very damaging to economic growth (Chege, 1999) and is not a conducive environment for both domestic and foreign investment. Political reform should be aimed at building frameworks that are more inclusive, encourage power-sharing and allow for enhanced public participation in the political process. There should be room for political debate; opposition groups should be given official recognition under the law. Lack of access to television and radio and other forms of communication, which unfairly limit the ability of opposition views to campaign for support, can lead to alternative, including violent, forms of struggle. In fact, peaceful conflict resolution is a key ingredient to maintaining stability in African economies. This has been demonstrated by recent conflicts in the Great Lakes involving several African countries.

Chege (1999) emphasises the need to reform political institutions in Africa as a basis for consolidating the reforms, mostly economic, which have been undertaken. It should also be noted that a high degree of ethnic diversity has not necessarily translated into greater conflict in African countries. As in any society, there will be conflicts over the distribution of power and resources, which, in Africa, most often works along tribal lines. Whether the outcome is peaceful or disorderly will depend upon the ability of the institutions of governance to resolve conflict peacefully. These institutions should be able to operate in an objective environment where decisions are made according to the law.

Inclusiveness in Africa does not have to mean Western style democracy. Institutions and the system of government should aim to be inclusive but in a way that accounts for the particular ethnic and religious characteristics of the individual country. For example, the Movement System since the National Resistance Movement took power in 1986 has served Uganda well and is expected to be a transitional phase to full multi-party democracy.

Experience from different multi-party elections in Africa in the 1990s shows that the results have not always been beneficial to the country concerned. It seems that tribal loyalty has translated into party loyalty along the same lines (Chege 1999). This means that multi-party democracy has merely transferred the potential for division along tribal lines to political parties. What is needed, in addition to free and fair elections, is a system of government and institutions that is inclusive to minorities. The political process should not be used as a convenient means of marginalising minority parties (tribes) using the cloak of multi-party elections. This will require careful consideration of the unique ethnic and religious characteristics of each country so that reforms are tailored to ensure a pluralistic and civil society that is able to minimise and peacefully resolve conflict.

Insurance against policy risk

Countries can sign bilateral or multilateral investment treaties that have legally binding elements establishing the obligations of the host country toward foreign investors from other signatory countries. These can help to ensure continuity in the environment under which foreign investors operate and also to limit the power of governments to renege on their promises. These mechanisms can also be used to resolve disputes. One example is the International Centre for the Settlement of Investment Disputes, a multilateral institution that is part of the World Bank group, which provides a mechanism for arbitrating investment disputes amongst member countries.

Such mechanisms should enhance the credibility of other complimentary reforms in areas affecting foreign investors. African governments should carefully consider signing multilateral and bilateral arrangements that can promote their own goals of attracting foreign investment, while not subjecting them to undesirable commitments that might otherwise be part of some of these arrangements.

Ensuring Macroeconomic Stability

Macroeconomic stability is a prerequisite for attracting sustainable, long-term foreign investment into a country. Hadjmichael and others (1996) conclude "the most important impact of policies on private investment behaviour was through their effect on macroeconomic instability and uncertainty". This suggests that greater macroeconomic instability can have a considerable adverse impact on domestic and foreign private investment.

A considerable amount has been achieved in the area of establishing a stable macroeconomic environment. In 1997, 33 countries recorded inflation rates less than 10 per cent compared to just 12 in 1994 (African Development Bank, 1998). But, much needs to be done to consolidate these improvements and to ensure that those countries which continue to perform poorly carry out the necessary reforms. Continued improvements in macroeconomic performance — low inflation, low and sustainable budget deficits, stable but competitive exchange rates — will help to enhance the overall environment in which private investment is conducted. For example, low budget deficits ensure that the private sector is not crowded out of the market for credit, and a stable and competitive exchange rate reduces uncertainty and ensures export competitiveness.

Macroeconomic Policies

Reducing the burden of external debt

In many African countries external debt servicing, most of it official, continues to exact a significant burden on finances. At the end of 1994, the total debt

stock was $164 billion, in present value terms, of which 17 per cent was owed to private creditors, 64 per cent to official creditors and 19 percent to multilateral institutions (Claessens and others, 1996). Resources that might otherwise be used to invest in public infrastructure, education and health have to be used to service external debt, often in circumstances where foreign reserves are low and have to be rationed.

In principle, heavy external debt does not automatically translate into low growth. Growth in export earnings can allow for continued importation of investment goods to maintain growth while servicing external debt at the same time. However, for reasons of solvency, this process cannot go on forever. There are two possible end scenarios; an orderly crisis-free resolution where foreign exchange earnings are generated by investments made using borrowed foreign money in the first place. However, if borrowed money is invested primarily in the non-traded sector, then a situation will arise where the economy is unable to pay for imports required to maintain growth. In these circumstances, the authorities may be forced to apply foreign exchange controls to limit the availability of foreign exchange for "non-priority" areas, including the ability of foreign investors to repatriate earnings and dividends. If private investors conclude that this end scenario will take place, it can induce a "rush for the exit" that brings forward such a crisis. This type of conclusion is most certainly affecting investor perceptions today about Africa.

A heavy debt burden can also hinder a country's ability to restore confidence in its domestic economy and credibility to its reform programme. The adjustments required to restore debt to sustainable levels are usually painful and, for this reason, may not be credible. For instance, those groups worst affected by the adjustment may be politically able to roll back some of the changes.

The HIPC Initiative has gone some way in reducing the debt-service burden to sustainable levels for heavily indebted poor countries that have a track record of implementing sound economic policies. These countries are required to invest the savings made from HIPC relief in priority areas such as health and education. As mentioned previously, improvements in human capital should be part of any process to encourage private capital inflows to Africa. But, in general, reforms should have significant local participation in their design to ensure that local ownership is maximised. This will enhance the long-run sustainability of reforms.

Capital account convertibility

Although many countries have made progress in eliminating capital account restrictions relating to long-term flows, a number of African countries continue to have restrictions relating to FDI and the repatriation of foreign exchange (IMF, 1999). These clearly do not help investor confidence in these countries.

Freeing-up capital account transactions can send a positive signal to the investment community about government intentions towards foreign investment; why would a government expose itself to a sudden flight of capital when confidence deteriorates, unless it has inside knowledge about its own strong commitment to reform?

Opening up the capital account should be carefully sequenced so that it is sustainable. The experience of East Asia has shown that the financial sector and supervisory authorities have to be effective in managing capital inflows during boom years, to ensure that returns generated by the investments into which they flow are able to service the future external obligations.

Investment in Public Infrastructure

"The low capacity of infrastructure, institutions and human capital constitute major underlying development challenges in the continent" (Africa Development Bank, 1998). This was stated as part of four broad sets of issues constraining private sector investment in Africa. This is one rationale for the present policy under the HIPC Initiative to direct savings from debt relief to social programmes such as health and education. Here the term public infrastructure is used in its broadest sense to include institutions, human capital as well as physical infrastructure such as roads.

Infrastructure investment

Inadequate public infrastructure reduces the return to private investment since they are complementary. For example, poor roads increase the cost of transporting goods to the market-place and may even make the supply unpredictable if they cause more frequent breakdown of vehicles. If the demand for these goods is price elastic it becomes more difficult for the producer to pass on the costs to the consumer. In the case of Uganda, recent survey evidence from private sector firms revealed that the power sector was a serious constraint to doing business (Reinikka and Svensson, 1998). An unreliable and costly power supply means that private businesses are often forced to invest in private generators, which further increases the costs of doing business.

Building Sound Institutions

When foreign investors arrive they are likely to meet several government agencies along the path to finally starting up operations, and such agencies can have a considerable impact on the final decision of whether or not to invest. The cost of doing business

increases when such institutions are very inefficient or require bribes to provide incentives for "fast-track" clearance. Other examples are slow and bureaucratic procedures in applications for investment licenses. Therefore, institutions need to be effective at providing the services they are designed for, and in a manner that is fair. Discretionary application of rules and procedures reduces confidence in public institutions and can lead to attempts to circumvent them or abuse them to gain unfair advantage (such as offering bribes). As part of a plan to encourage FDI, Bhinda and Martin (1994) recommend that tax and duty structures and levels should be made more transparent to encourage greater compliance.

Legal and regulatory environment

A fair and efficient legal system is essential in ensuring that all economic agents are treated fairly and that there exists an effective mechanism for resolving conflict. Legal rights (property rights, for instance) must be upheld, and the rule of law should prevail. Such a system can then act as a restraint against abuse of power by the executive arm of government, and a check against reversals of policies that are enshrined in the law. These mechanisms are designed to reduce the institutional uncertainty that any investor, whether domestic or foreign, faces when planning ahead and deciding whether or not to invest.

Africa's legal institutions suffer from a lack of credibility. Collier and Gunning (1999) report that African courts generally work less reliably than elsewhere, while only about a quarter of African lawyers consider the judiciary to be fully independent of the executive. This, in turn, often leads to less reliance on the courts to resolve conflict. That is why legal reforms to provide for an independent judiciary and a fair legal system for conflict resolution are essential in rebuilding credibility. These institutions should be provided with sufficient human and physical resources to carry out their duties.

Microeconomic and Sectoral Policies

Macroeconomic policies alone are unlikely to effectively promote foreign investment. Complementary microeconomic policies at the industry and firm level can play a critical role in providing incentives for foreign investors.

Tourism

Tourism is potentially a significant source of foreign inflows. Africa's vast natural resources, such as the game reserves and national parks, are the biggest attraction for foreign visitors that distinguishes Africa from other tourist centres. Tourism should be promoted in a way that safeguards the long-term viability of the continent's natural resources. Some of the income from national parks and game reserves could be used to improve the monitoring and safeguarding of animal populations against threats such as poaching.

Investment promotion centres

Investment promotion centres can, at their very simplest, take the form of international trade missions to countries that are potential inward investors, or the setting up of agencies designed specifically to speed up the clearance of procedures for inward investment. At the other end of the spectrum, they may be export promotion zones that provide for concessionary tax rates, tax holidays and other incentives.

Investor missions can have significant benefits if they are well targeted and organised to deliver a consistent and favourable message. Potential investors should be clearly identified and targeted and then missions should introduce opportunities to them that they are currently not aware of. This requires skilled communication and a well thought out strategy on the part of agencies such as investment authorities. On the other hand, if such missions are seen as lacking focus by foreign investors they may do more harm than good to a country's investment image.

This type of marketing has been seen in trade and investment missions from developed countries. They usually involve a high level politician (such as the minister for trade) and chief executives of top tier companies from the host country.

Export promotion zones

Export Promotion Zones (EPZs) are areas demarcated to provide various incentives to attract both domestic and foreign investment into export sectors. These incentives include tax exemptions on profits, favourable utility prices and guaranteed service provision and reduced red tape, among others. The essential question is whether such preferential treatment provides for a net benefit to the country over some specified time horizon. The initial costs to government can be high in the form of foregone tax revenue and utility provision. It may also be difficult to judge whether the resulting investment would have taken place anyway in the absence of the EPZs; governments would not want to provide incentives for those foreign investments that would take place even in the absence of specific incentives such as tax holidays.

But while EPZs may be costly in the short-run, they contribute significant positive externalities in the form of technology and management skill spillovers. Other benefits include increased employment and skill acquisition through training and development. The use of the EPZ in Mauritius has resulted in strong links between the domestic textile industry and textile producers in Hong Kong, China. In the case of countries like Uganda, EPZs could help to strengthen links between domestic investors and

Asian investors.

Encouraging joint ventures

In a joint venture, the local partner is likely to have a comparative advantage over its foreign partner with regard to information about local market conditions, bureaucratic procedures and contacts with local customers. The foreign partner may bring new and improved managerial skills to the relationship and have access to financing that may not be available to the local partner, as well as new technologies and processes being used in overseas markets. These synergies can help to overcome fears that foreign investors may have when investing in new markets and benefit the local partner in the form of a more rapid transfer of skills and technology.

In Africa, there is a paucity of information about local conditions, and this information gap may be enough to deter potential investment. So long as the legal relationship between partners is properly defined and laid out, joint ventures can be one way to encourage foreign investment, at least in the early stages of entry of foreign investors.

However, a number of safeguards should be put in place, which allow for equal participation for the local and foreign partner. For example, it should not be the case that foreign partners are not allowed to have voting rights on the board of directors of a company simply because they are from a foreign entity. Policies that are designed to simply attract foreign investment without providing for a stake in the decision-making processes are very likely to fail to deliver the intended benefits.

Strengthening the Financial Sector

The financial sector plays an important role in the management and sustainability of capital inflows. In Africa, the banking sector dominates the financial sector. Inflows of foreign capital can enhance the deposit base of banks and consequently their ability to expand their loan portfolio. If this happens too quickly, and internal monitoring and control systems are unable to manage such an expansion, a large share of these loans may become non-performing, eventually threatening the solvency of the bank.

Foreign inflows also present foreign exchange risks for banks. While the liability is in foreign currency, the corresponding asset will be in domestic currency. If the entity holding the loan has most of its revenues denominated in domestic currency, it will be subject to the risk of a depreciation in the domestic currency versus the foreign currency, which increases the cost of servicing the foreign currency loan. Such risks need to be effectively managed both internally and by external supervision by the Central Bank or other supervisory authority.

Foreign capital can flow into a country in several ways depending on the nature and purpose of the original inflow itself. For example, portfolio flows are more likely to flow into the country if there is a broad-based and liquid stock exchange where equity can be traded. Indeed, where a fledgling stock market exists, foreign capital can enhance liquidity and diversify equity holdings. However, one danger that has been highlighted by recent events in Latin America and East Asia is that short-term portfolio flows can be subject to sudden reversal, causing an exchange rate crisis.

Regional Co-operation

The small size of most African markets has often been highlighted as a disincentive for foreign investment that requires a minimum market size before it is profitable. Regional trade agreements that lower barriers to trade, by eliminating tariff and non-tariff barriers, can potentially solve this problem. Presently, within the Cross-Border Initiative in Eastern and Southern Africa there are five different Regional Trade Arrangements or RTAs (IMF, 1999). Member countries have to deal with conflicting objectives between these RTAs, different strategies for liberalising trade and investment, and conflicting rules and administrative procedures. The goal of facilitating cross-border activity would benefit from a harmonisation of the goals and objectives of the different RTAs, at the very least. A better solution would be to rationalise the structure of the overlapping RTAs, and consolidate them into fewer entities or one single entity. It would then be easier to align objectives and goals, allowing for more co-ordinated implementation of agreements while ensuring objectives are internally consistent.

When regional groupings are not clear, potential investors can find it difficult to identify market opportunities. Complicated structures usually involve larger amounts of red tape requiring more investment in expertise in the areas of taxation and legal procedures, which increases the cost of doing business.

Encouraging Links with South African Companies and Investors

Encouraging tie-ups with South African investors may be another promising avenue for attracting foreign capital. South African enterprises have been "moving north" into other African countries in wide ranging areas, from mining to brewing. Within the Sub-Saharan region, South Africa has a better record of attracting foreign investment. This is partly the result of having a better image in the international community and the fact that the transition to the post apartheid period has been relatively smooth and peaceful.

South Africa could potentially be a conduit foreign direct investment to the rest of Africa. Geographical and historical links give South African entrepreneurs and companies expert regional knowledge about the risks and benefits of investing in various areas and sectors around SSA. This kind of reliable information about African investments can potentially solve the problem of market failure by providing for credible signals to potential foreign investors about the viability of different investment projects or proposals. Funds, which would not otherwise have been invested in various projects, could then take advantage of this superior knowledge.

South Africa also benefits from superior brand names when compared to other countries. This is helped by the fact that within SSA, South Africa is home to the largest number of multinational companies.

CLOSING THE SAVINGS-INVESTMENT GAP AND SUSTAINING GROWTH

Capital inflows can help to close a deficit savings-investment gap in a country and is one of the major reasons why they are important for countries in Africa, which are mostly in deficit. Calamitsis and Dhonte (1996, 1) state that "…to achieve gains in real per capita GDP an expansion in private savings and investment is key". In this respect, to generate and sustain growth in Africa, investment in physical and human capital is crucial, but with the current low levels of the domestic savings rate much of this will have to be financed with foreign surplus capital (see table 2). Over the period recorded in the table and most recently, it is official development assistance that has enabled total investment to be consistently higher than total domestic savings, with private investment and savings mostly in line with each other.

As discussed previously, there are various preconditions that are necessary before foreign investors (both private and public) are willing to invest. The lack of these conditions in the past has discouraged foreign investment in Africa. Reforms have included liberalisation of the foreign exchange regime. In the 1970's, with a very poor political and economic environment in much of Africa, capital flight was a major constraint to economic activity. Foreign exchange was rationed by central banks. This severely limited the importation of key spare parts that could only be found abroad and generally constrained the level of economic activity to those areas that were deemed to be essential. In these circumstances official development assistance was mainly used for the purposes of importing essential goods and services.

More recently, there have been significant reform efforts in various African countries and this has been associated with a return of flight capital and new inward foreign direct investment. In Uganda, for example, the response from private sector investment underlines this return of confidence, having risen from 7.6 per cent of GDP in 1986 to 11.1 per cent in 1995-96. This has been associated with a considerable pick-up in private transfers—they were only $1 million in 1986-87 but increased to an estimated $510 million in 1996-97 (Kasekende and Kitabire, 1998). Such private sector inflows have eased the foreign exchange constraint for countries such as Uganda that have undergone a sustained reform effort and stabilised the macroeconomic environment. The trade deficit is now largely financed by private sector receipts of foreign exchange recorded in the current and capital accounts, while official development assistance has allowed the central bank to build up foreign reserves with the local equivalent amount being spent by government ministries on social sector development projects. Within the area of development expenditure, health and education projects have been major recipients of external official development assistance. This should, in the long-term, allow for more balanced growth, with private sector inflows financing imports of physical capital while Government expenditure, financed by ODA flows, are channelled to the development of human and social capital.

An easing of the external financing of investment expenditure on inputs of production and investment has enabled the Ugandan economy to enjoy high rates of economic growth in the 1990s (averaging 7 per cent). In the earlier part of this period, economic growth resulted mainly in higher rates of capacity utilisation. The earlier period of conflict and civil unrest resulted, not only in capacity destruction, both human and physical, but also in a large fall in economic activity and therefore an increase in spare capacity. As spare capacity falls, additional growth will have to come from capital formation. Arguably, this is more difficult to achieve than the simple utilisation of spare capacity, and will require high rates of investment on a sustained basis. Given Uganda's present low savings rate, the next phase of growth will rely more heavily on foreign investment (private and official). Domestic savings rates should then respond to higher levels of income generated by these investments, and structural policies that encourage saving.

Ghana is another example of a country in Africa having recently undergone reforms. In Ghana, too, net private transfers increased substantially during their Economic Recovery Programme. There were small outflows during 1983-86, but by 1987-91 average annual inflows of private transfers had increased to $200 million, equivalent to approximately 3.5 per cent of GDP (Nowak and others, 1996, 37). Taken together, net external financing (official and private) more than doubled — from $172 million in 1983-86 to $472 million in 1987-91. This considerably eased the external constraint on growth and investments in Ghana.

If private capital inflows generate a virtuous circle of increased investment that generates income and

Table 2. Trends in savings and investment in Sub-Saharan Africa, 1986-92 (per cent of GDP)

	1986	*1987*	*1988*	*1989*	*1990*	*1991*	*1992*
Total domestic saving	10.3	11.6	10.9	12.0	14.0	13.3	11.9
Total investment	17.0	18.3	18.7	17.5	18.4	19.4	18.8
Private saving	8.1	10.9	11.6	11.8	12.8	11.8	12.1
Private investment	8.4	9.2	10.2	9.7	10.6	10.8	10.3

Source: IMF, Economic Trends in Africa database, August 1993

savings and leads to more investment, there will be considerable other benefits. For example, expanding economic activity requires larger amounts of labour. This can help to provide employment to previously idle labour, and in turn generate tax revenues that can be spent by government and invested in social sectors such as health and education.

CONCLUSIONS

The paper has shown that a confluence of factors will help Sub-Saharan Africa attract capital inflows. These factors include both economic and non-economic factors. But it is not necessarily the case that all these factors will come into play for Sub-Saharan Africa to generate increased capital inflows. Recent experience has shown that a strong commitment to eliminating distortions in the macro-economic environment has caused a reversal of flows to the benefit of the reforming countries. To sustain and increase those inflows requires continuous restructuring of the economies to eliminate residual distortions, as well as investing in institutional reform, including strengthening the judiciary and political institutions. This would help to change negative perceptions about Africa and reduce the risk of policy reversal and the cost of doing business. The paper has also shown that factors constraining domestic investments, such as poor public infrastructure, equally discourage foreign investment. There is a need to address impediments to investments, in general, for Africa to attract higher levels of inward investment.

Regional integration has been identified as critical for eliminating constraints associated with the limited size of most of African economies. SSA should therefore move quickly to rationalise the structure of overlapping regional integration groups to benefit from such trading blocs. Related to this are the increasing investments originating from South Africa in the rest of SSA. This is a very welcome development that should be fully harnessed.

The paper has presented the potential benefits of increased capital inflows to Sub-Saharan Africa. Such inflows would ease the foreign exchange constraint that affected a number of countries during the 1970s and 1980s. Consequently, countries would be able to finance higher levels of imports while building foreign exchange reserves. In addition, countries would be able to sustain levels of investment higher than what can be sustained by domestic levels of savings. This would enhance growth prospects and economic performance of countries benefiting from higher inward capital inflows. More importantly, such countries would reduce poverty levels as employment of resources increases.■

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THE IMPACT OF REGIONALISATION IN THE AFRICAN CAPITAL MARKETS SECTOR AND THE MOBILISATION OF FOREIGN CAPITAL FOR SUSTAINABLE DEVELOPMENT

Nicholas Biekpe*

EXECUTIVE SUMMARY

Successful consolidation of African countries in large regional economic blocs is now a reality with such successful blocs as the Common Market of East and Southern Africa (COMESA), the Economic Community of West African States (ECOWAS) and the South African Development Community (SADC). As world markets operate more and more like "global villages," corporations search relentlessly for investment opportunities with the lowest production cost, lowest cost of capital, highest investment returns and lowest risk both within and between these "villages". The consolidation of regional capital markets, combined with a coherent environment conducive to investment, is imperative if African countries are to participate in the global economy.

Stock markets, in general, are about options. For savers, the stock market provides an alternative to the money currently placed with the local bank. For entrepreneurs, governments or corporate bodies, the market provides a venue to raise capital to finance projects or businesses. For Africa to attract significant foreign direct investment, the stock markets will also be increasingly used as a platform by foreign investors to raise more capital to finance projects.

Currently, there are twenty stock exchanges in Africa, which represents about a 40 per cent increase in market capitalisation over the past five years—the increase rises to 160 per cent if the Johannesburg Stock Exchange (JSE) is included. This is an impressive achievement by any standard. However, most African stock markets are characterised by low liquidity due, in part, to poor micro- and macro-structures from central governments. Despite this, on average, African stock exchanges have out-performed most emerging and developed markets for the past ten years. This is in line with the increase in the overall level of foreign and direct investment and increases in the privatisation of state-owned utilities, private sector investment and the overall level of investor confidence.

For the exchanges in Africa to maintain high levels of sustained growth rates, the venture capital market sector needs to be developed further. African stock exchanges are still mainly dominated by major international institutions in the banking and insurance sectors. African governments will need to create the right conditions for budding entrepreneurs to raise capital in the markets. The right regulatory framework, greater transparency, protection for investors, less corruption and less state intervention are some of the vital ingredients that will have to be in place before investors can take the African stock exchanges seriously. At the moment, a significant number of exchanges have gone some way towards putting most of the above requirements in place.

* Nicholas Biekpe is Professor of Finance and Head, Africa Center for Investment Analysis, University of Stellenbosch, South Africa. The author is grateful to Agatha Munyika and Sheena Baldwin for their useful comments, which added more value to the contents of this article. They are, however, guiltless of any errors that may remain.

INTRODUCTION

AFRICA has experienced significant economic growth in the 1990s. However, the role African capital markets played in this sustained growth and development is not yet well established. One of the reasons is that the majority of Africans do not yet understand the basic functions of the stock market. African governments, for their part, still do not have coherent policies in place to push forward the capital markets agenda. For Africa to attract significant foreign direct investment, the stock markets will need to be used as platforms by foreign investors to raise capital to finance their projects. Exchanges will also need to be used by budding entrepreneurs as venues to raise venture capital to help finance their businesses. One of the key reasons why the capital markets sector has received little attention by development organisations is the general perception that stock exchanges do not, immediately, help combat poverty and diseases. It is, however, not difficult to see that well regulated stock markets will help improve cross-border trade and spread wealth across borders and, as a result, create jobs.

There are currently 20 stock exchanges in Africa located in Botswana, Côte d'Ivoire, Egypt, Ghana, Kenya, Malawi, Mauritius, Morocco, Mozambique, Namibia, Nigeria, South Africa (three exchanges), Swaziland, Tanzania, Tunisia, Uganda, Zambia and Zimbabwe. One more new exchange is expected to be operating in Lesotho soon (African Stock Exchanges Handbook, 1999). The Johannesburg Stock Exchange in South Africa is the continent's largest stock exchange with a stock market capitalisation (SMC) of $170 billion (as at year end, 1998) and the developing world's third largest behind Hong Kong and Taiwan. It is among the most technologically advanced exchanges and accounts for about a fifth of the stock market capitalisation of all stock markets in Africa.

In recent years, African markets have, on average, out-performed all leading market indicators. Emerging markets specialists believe this is just the beginning of an even greater performance from Africa's fledgling stock markets. This is both optimistic and simplistic, but positive feelings have led some fund managers to back those feelings with cash by investing in the region. A recent example is the Southern Africa unit trust, from Save & Prosper, the retail fund arm of the merchant bank Robert Fleming, which raised £10 million. Others include the Africa Investment fund from US investment bank Morgan Stanley, which raised £230 million, and Baring Asset Management, a UK fund management company.

Of the few African funds that exist, most of the money is invested in South Africa. Yet, spectacular opportunities are more likely to be found in other African markets. Great possibilities lie in the small and, as yet, under-researched countries, which have only set up their stock exchanges since the mid-1980s. The S&P fund is typical, though, as it put 85-90 per cent of its cash in South Africa and the remaining 10-15 per cent in Zimbabwe and Botswana. It is also typical in that it will invest in a mix of quoted and unquoted companies as well as some fixed interest securities.

The change in world politics since the collapse of communism has created a background of opportunity within African capital markets. The fall of Soviet power around the world meant that African nations were forced to take notice of the capitalist approach attached to loans from institutions such as the International Monetary Fund and the World Bank. As a result, since the mid-1980s, many states have undertaken programmes designed to strengthen their economies, moving away from central planning and towards a more conventional capitalist model. This is something that potential investors have looked favourably on. Typically, the World Bank insists that governments agree to fulfil a number of criteria before it will make loans. These include the implementation of floating exchange rates, cutting government spending, liberalising interest rates, following a tight monetary policy and creating a broader tax base, all conditions in which private sector capital can be used for investment and development. Cutting government debt by privatising state-owned companies is another typical pre-condition. Not surprisingly, these are also some of the very conditions necessary for a stock market to function efficiently.

STOCK MARKETS: GROWTH POTENTIAL

African stock markets are still in their development phase. However, many emerging market specialists believe that these are the last undiscovered stock markets in the world. There has been some significant undervaluation of African stock markets over a number of years. This undervaluation has been, consequently, translated by most analysts into an out-performance of the African stock market indices relative to other emerging stock market indices even without a substantial foreign investor base. Once a substantial foreign investor base emerges, this out-performance will be significantly magnified.

During the period from January 1994 to August 1998, the U.S. dollar denominated Flemings Africa Index including South Africa (FAiSA) returned 22 per cent while the International Finance Corporation (IFC) Investable Composite Index (IFCI) lost 43 per cent. In the same period the Flemings Africa Index excluding South Africa (FAxSA) returned 169 per cent or a compounded annualised return of 21 per cent per annum. The FAxSA outperformed the S & P 500 Index by 12 per cent. The returns for both the FAiSA and the FAxSA significantly outperformed the returns of the S&P 500, the IFCI Composite and the regional IFC indices for Asia, Europe, the Middle

East and Latin America during these periods. For the 12-month period ending April 30, 1998, the top two performing stock markets in the world were African markets. The stock market in Ghana was up 165 per cent in dollar terms for this period making it the world's best performing stock exchange during this period. The market in Botswana was up 94 per cent in dollar terms during the same 12-month period making Botswana the world's second best performing stock market.

The combined stock market capitalisation (SMC) of African stock exchanges almost doubled from $136 billion in 1989 to $225 billion at the end of 1998. This rise in SMC value is magnified further when one considers the rise in the SMC value for African exchanges, excluding South Africa, from $5 billion to $55 billion during the same period, an eleven-fold increase. It should also be noted that the African share of emerging market SMC has also increased from 3.7 per cent in 1985 to 12.7 per cent in 1996. ING Barings, the international investment bank, projects that the combined SMC of African countries will increase by a factor of five or six by the year 2010. This figure will increase significantly with proper regional blocs in place.

Another positive factor that characterises African stock markets is the very low correlation between African stock markets and the major stock markets. Furthermore, apart from this low correlation (in many cases, even negative correlation) between African markets and the major world markets, there is also very low correlation between African markets themselves. This is due to the economic diversification of African markets. This is unlike markets in the Asian and Latin American regions where intra-regional correlation is high. This combination makes Africa a truly diversified addition to a global portfolio. The situation could, however, change with greater regionalisation of the markets.

The IFC recently provided seed capital for the launch of a West African Fund and has added many African emerging markets to its emerging market indices. Morgan Stanley, through its Morgan Stanley Capital International (MSCI) affiliate, also launched, in late 1997, two Africa Indices (MSCI Egypt and MSCI Morocco), thus bringing to three the number of markets covered by the MSCI, with South Africa being the third market. Furthermore, the IFC, in its Emerging Markets Database (EMDB), covers eleven African markets and includes five (Egypt, Morocco, Nigeria, South Africa and Zimbabwe) in its IFC Global Composite Index (IFCG). The other six markets covered by the IFC include Botswana, Côte d'Ivoire, Ghana, Kenya, Mauritius and Tunisia and are included in the IFCG Frontier Composite Index.

The IFC eloquently summarises the rationale for investment in the African stock markets with the following positive comments: "Africa is the new frontier … (and its) economic potential is largely untapped. Its plentiful resources have been enhanced by economic and political progress over the last decade… Africa presents a tremendous potential market… the game is just starting in Africa and willing players… will have their just rewards. The rewards of investing in Africa justify the high risks. Returns… have been among the highest in the world and the outlook is good" (IFC, undated, 3-4).

REGIONALISATION OF AFRICAN CAPITAL MARKETS

International trade and investment flows have increased more rapidly than world GDP over the last two decades. This rapid growth of international transactions has sometimes been referred to as "globalisation". However, it has been argued that globalisation has not contributed to overall world growth, but only benefited a small number of countries while many others have failed to reap the benefits of rapid increases in international trade and investment flows; that is, that the globalisation process leads to a concentration of trade and investment flows and greater inequality.

For the African capital markets, the way forward is through the formation of strong regional blocs, which will then, ultimately, lead to a meaningful global agenda. The question is, will regionalisation improve the overall performances of the African stock exchanges? Globalisation and regionalisation are not necessarily antagonistic, but rather mutually reinforcing. African stock exchanges need to integrate with the rest of the world and, in doing so, they must first come together and establish their own regional blocs.

Regionalisation is currently taking place in the continent. In fact, the world's first regional exchange is the *Bourse Regional de Valeurs Mobiliéres* (BRVM) in Abidjan, Côte d'Ivoire, which commenced trading in early September 1998. The BRVM will serve the eight French speaking West African countries – Benin, Burkina Faso, Guinea-Bissau, Côte d'Ivoire, Mali, Niger, Senegal and Togo. It is expected that five to ten companies from each of the eight BRVM member countries will be listed on the BRVM. The BRVM will use electronic trading and settlement (T+3) systems. The eight member nations of the BRVM will be connected via satellite.

There are also currently plans for two other regional exchanges in Africa — one in anglophone West Africa (Nigeria and Ghana) and the other in East Africa (Kenya, Uganda and Tanzania). These exchanges will increase market liquidity while, simultaneously, stimulating the addition of substantial depth to the capital markets in these African sub-regions. During a meeting in Johannesburg this year, leaders of the SADC stock exchanges resolved to speed up the linking of their trading, clearing and settlement systems with the aim of building the region's market into a

world contender. The Namibian stock exchange is already linked to the Johannesburg stock exchange.

As a way forward and for stronger regional co-operation between the SADC exchanges, plans were in place to bring the Johannesburg Stock Exchange, the Bond Exchange of South Africa and the South African Futures Exchange (SAFEX) under one umbrella. However, both the Bond Exchange and SAFEX rejected the planned merger, put forward by JSE, during separate meetings on 24 November 1999. This is a blow to the spirit of regionalisation in the SADC region. It is, however, hoped that the three exchanges will work more closely together in the future.

The Johannesburg Stock Exchange and the Nigerian Stock Exchange have also signed a memorandum of understanding, which will encourage technology transfer, staff secondment, dual and new listings and training between the two exchanges. The implications of the "bloc-effect" are far reaching. What this simply means is that financiers in Europe or North America interested in investing in Africa will find it easier to do business in these regional stock market blocs. Foreign direct investment (FDI) will grow as a result. More importantly, it will be easier for investors in countries within blocs to raise capital in the region to expand their businesses. For instance, an investor from Ghana will encounter fewer problems raising money from the Nigerian Stock Market to set up a business in Côte d'Ivoire.

One feature of many African stock exchanges, as a result of their relative youth, is the advanced technology in place in these exchanges; many of these exchanges were formed at a time when the technological development of trading and settlement systems was already advanced.

In today's world, no nation can realise its full economic potential on its own. Cross-border and regional co-operation will maximise prosperity for each of the member states in the continent, as is the case for other regions of the world. Africa has much to learn from the European Union, which is increasingly focusing on the private sector as the engine of growth and on the establishment of a free trade area. To be active participants in the new world order, African countries have to liberalise their financial markets, reduce price support and subsidy programmes, and direct resources to more efficient projects (IMF, 1999).

The continent already has a number of active and well-structured economic blocs. These include, among others, ECOWAS, COMESA and SADC. These blocs will play key roles in the regionalisation of the capital markets. The Organisation for African Unity (OAU) also actively promotes trade and investment among African countries and hopes to spark the creation of an African common market in the next decade. A common aim of all these blocs is to unify the varying tariffs between African countries and to expand inter-African trade. This, if successful, will make trading across the various exchanges easier and more cost effective. Furthermore, the free market would not be confined to commercial trade but will also aim to promote the free flow of capital and investment among member countries.

Asia's financial crisis has been a dominant theme in almost every recent professional gathering. What exactly precipitated the Asian crisis? Without being too simplistic, a heavier reliance on debt rather than equity might be the major cause of the crisis. Corporations and financial institutions were focusing on attaining growth targets without being accountable to discerning shareholders, and that led to inefficiencies and excesses. Of course, this was accentuated by a set of other structural problems, namely inadequate regulations and insufficient transparency among banks, corporations and the governments. Another consequence was an excess inflow of private capital, some of which was channelled into unproductive investments leading to excess capacity and financial market over-valuations.

The crisis in Southeast Asia had very little effect on the African region's capital markets, except for South Africa. This was partly due to the fact that there were relatively few foreign capital investments into the African capital markets. The Sub-Saharan region attracted less than three per cent of all private capital flows to developing countries over the past seven years. The channels for speculation in Sub-Saharan markets are not available, with no futures or options markets (South Africa excluded) to facilitate short-selling of the region's currencies or stock markets. Regionalisation could dramatically improve the derivatives and foreign exchange markets which are non-existent in most African markets.

THE ROLE OF GOVERNMENT AND THE PRIVATE SECTOR

The distribution of international capital is being conducted in a very discretionary way, leaving Africa on the sideline. Competition to attract foreign investment is intensifying as emerging stock exchanges adopt development strategies based on increased integration in the world markets. Thus, for the African markets to survive well into the next millennium, it is important that the respective governments in the region put in place sound fiscal and monetary policies. This should be accompanied by macro-economic reforms that will bolster investor confidence, build a strong supervisory and regulatory infrastructure, help cultivate modern risk-management techniques within the private sector, put more emphasis on privatisation, and help to open the economies to foreign participation with bold trade and financial sector liberalisation to improve efficiency (Collier, 1997).

Many leading private institutions are strong players in their home markets but are only small operators in the regional and global arena. Forming strate-

gic alliances or expanding regional presence, through mergers and acquisitions, is a way to overcome this handicap. Businesses and financial institutions should create regional companies and services to expedite the process of the region's integration. Corporate sector reforms should involve the improvement of corporate disclosure and accounting standards to facilitate the move to a market-driven investment culture.

It is very important for the protection of individual investors that only stockbrokers who are licensed and regulated by particular stock exchanges are used to transact investment business. Such stockbrokers would also be conversant with current legislation and be able to advise investors accordingly. International Standard Securities are such a firm of stockbrokers.

Potential investors have to believe that relevant policy changes put in place regarding market regulations and the role of government will be adhered to. So far, most countries that have agreed to programmes have stuck to them. South Africa is proving to be a major success story, and this is now encouraging investors to look at other parts of Africa they may previously not have considered.

The World Bank anticipates that the economies of sub-Saharan Africa will grow at a rate of 3.9 per cent a year from now until 2003, boosted by inter-regional trade and a recovery in commodity prices. There is a strong body of opinion that believes that to get the best returns investors must get into African stocks as soon as possible and in markets other than South Africa. This is easier said than done. Apart from South Africa and Egypt, most of the exchanges have fewer than 50 quoted companies, with more than 80 per cent of each market's worth concentrated in its top 10 stocks. Most of those are the African subsidiaries of multinationals, such as Barclays, Unilever, Mobil and Standard Chartered. With the advent of universal Internet use, this is beginning to change. The lack of information has always proved a barrier to external investment for Africa and the Internet provides a window into the continent for external investors.

Possibilities now exist for the flotation of African companies in external markets, offering tremendous potential profit for investors. There are obvious pitfalls, but the risks have to be balanced against the possible rewards. Ghana has headed the pack with the flotation in the London markets of Ashanti Goldfields, in which the government had a 55 per cent stake and Lonrho the remainder. In the early 1980s, the mine had been run down to a fifth of current production because exchange controls had forced it to stop investing in new equipment. Since the mid-1980s the mine has been transformed, allowing the government to sell 27 per cent of the company for £1.1 billion to help repay foreign debt. However, a recent major forward exchange transaction, which went terribly wrong, cost the company millions of dollars. This is the other side of market liberalisation. South African companies listed in foreign markets include Old Mutual and South African Breweries. M-Net, another South African company, will soon be listed on the Nigerian Stock Exchange. Further opportunities exist in the continuing privatisation programme in Ghana. Morocco has state companies worth £2 billion earmarked for public listing. There are also active privatisation programmes in Uganda.

Many countries, such as Zimbabwe, Ghana and Botswana, now allow foreigners to buy at least part of a company and to repatriate dividends. Others demand authorisation before a foreigner can deal. Most African countries still don't have markets. There is plenty of scope for Africa to justify the perception of being the last great emerging market.

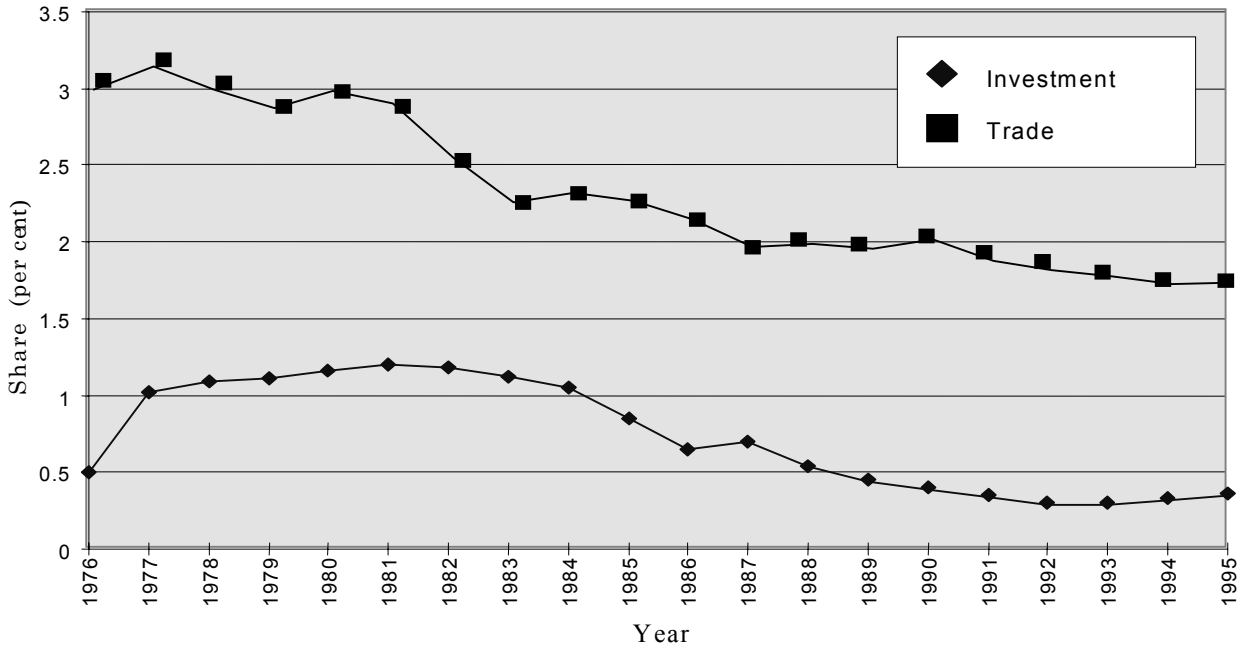
IMPACT OF FOREIGN DIRECT INVESTMENT

It is becoming increasingly clear that Africa must attract significant foreign investment flows to supplement the continent's low domestic savings rate. This will necessitate a higher level of integration between African financial systems and global financial markets which, in turn, would require improved financial information, lower business and currency risk, and financial infrastructure and regulations acceptable to major foreign institutions. African financial markets provide enormous opportunities for the continent to achieve higher economic growth. Free capital movements will facilitate the allocation of savings and channel resources into productive uses, thus promoting sustainable development. Open financial accounts will support the multilateral trading system by broadening the channel through which countries can finance trade and attain higher levels of income (Bhattacharya, Monteil and Sharma, 1997). Regional financial flows will, no doubt, expand opportunities for portfolio diversification and provide investors in both industrial and African countries with the potential to earn higher rates of return on their investments. Unfortunately, liberalised financial markets can also lead to sharp and unpredictable reversals of capital flows. Volatility in capital flows was the main cause for the financial crises in 1997 and 1998.

These crises, with their unacceptably high financial and development costs, raise concerns about the net benefits of international capital flows into Africa. Africa experienced declines in both total world trade and investment flows from 1984 to 1995 (figure 1). Current estimates, however, show marked improvement in both variables.

In the continent, the percentage increase of private loans from banks is still low or negative and this has an adverse effect on private capital flows into the capital markets. After the debt crisis of the 1980s, most commercial banks are cautious about providing loans to investors, as they are still trying to recover previous loans. It should, however, be emphasised that African economies, with the exception of Nigeria

Figure 1: Sub-Saharan Countries Shares of World Trade and Investment Flows, 1976-1995



Source: World Trade Organisation, (1996). Annual Report.

and Côte d'Ivoire, borrowed mostly from multilateral organisations such as the World Bank. Portfolio equity flows are also still small but growing. Foreign direct investment has increased, especially in non-CFA countries, with positive per capita growth in some African countries, for instance in Botswana, Ghana and Mozambique. Their growth is a powerful signal of rising investor interest and confidence. Since 1994, twelve Africa-oriented funds have emerged to manage about two billion dollars in assets. Examples include the Morgan Stanley Africa Growth Fund, the New Africa Investment Fund, and the Calvert Africa Fund. In addition, the focus of these funds has expanded from South Africa to Botswana, Côte d'Ivoire, Ghana, Kenya, Mauritius, Zambia, and Zimbabwe. For African stock exchanges, the benefits are clear: improved liquidity, greater incentives for privatisation, increased incentives for policy reforms and improvement of financial infrastructure.

There are a number of factors that dent investor confidence. These include political instability and weak macroeconomic fundamentals, weak or low growth, the size of markets, and a high degree of inward orientation. Structurally, factors that inhibit investment include heavy regulations, corruption, slow progress on privatisation, limitations on the number of listed private firms, a limited pool of investable assets, poor infrastructure, high production costs, and high indebtedness. To ensure that African stock exchanges continue to attract private investment, it is vital that African policy makers claim as their own a reform agenda that, among other things, calls for microeconomic and macroeconomic reforms.

Microeconomic reforms. Microeconomic reforms to reduce transaction costs and combat corruption are essential for the smooth running of emerging stock markets. For example, there is a need to put efficient securities trading systems in place. There is also a need for computerisation of clearing systems that would allow securities to clear within hours. A number of countries have already embarked in that direction. A significant amount of legal reform also needs to take place in order to ensure that transaction distortions are minimised. For example, corporate laws need to be reformed to allow more transactions like mergers and acquisitions, bankruptcies, and leveraged buyouts. The broader goal is to improve the transparency of property rights laws. For the long term, African governments should encourage their best firms to explore listing on international exchanges, which often have more stringent disclosure and accounting requirements. Aside from exposing these firms to global best practice, it creates knowledge spillovers and a broader investor perception of

the listing firms' home economy.

Macroeconomic reforms. According to Olson (1996), it is ineffective to consider even minimal development in isolation of specific macroeconomic issues. The synchronisation of infrastructure is necessary, at the national level, to strengthen policies, payments and regulations in the capital markets sector. The establishment of a regional capital market requires the absence of restrictions on capital movements and on dividends and profits, together with the harmonisation of general taxation, regulatory and legal requirements as a framework that could be used to launch them. Policy makers need to put more emphasis on raising output growth, emphasising the need for openness, ensuring relative stability of real effective exchange rates, and maintaining low external debt (Porter, 1993). These are conditions that foster high investment rates by domestic and international investors. At the same time, African governments need to embark on wider privatisation of state-owned enterprises. Far too many investors complain that not enough has been done to reduce the role of the state in the capital markets.

Are there any useful lessons that sub-Saharan African exchanges can learn from the East Asian crisis? There are four potential lessons, all linked to the efficient functioning of the financial system.

First, if a government senses that its financial institutions are developing problems, it should not hesitate to decisively tackle the problem before it leads to an implosion of the relevant economy. For example, the Nigerian government's recent decision to close insolvent banks was prudent because their poor performance would hamper the effectiveness of other well-run banks. It is important that a financial system allocate credit efficiently.

A second lesson centres on the question of central bank independence. The ability of central bankers to focus on single objectives such as price stability is a virtue that feeds into maintaining general macroeconomic stability. Equally importantly, it signals to investors and other economic actors that the government's capacity to intervene in economic management for a variety of reasons is severely constrained.

A third lesson is on the need for an efficient financial system regulatory infrastructure. One of the strengths of the American financial system is the regulatory excellence of the Federal Reserve Bank System. Numerous teams of bank examiners and regulators are able to spot flaws in the financial system that could be detrimental to the U.S economy, and potentially the global economy. One of the criticisms levelled against Southeast Asia's economies is the weak regulatory structure for monitoring bank activity. In the presence of a better regulatory system, the maturity and interest mismatch and numerous bad loans, which plagued those institutions, may have been spotted much earlier, before they wrecked havoc. In many countries, the need for well-trained and capitalised bank regulators and examiners is underestimated until the financial system approaches collapse under the weight of bad loans.

Fourth, so long as one is willing to examine the evidence, it becomes clear that balance of payments crises are often self-induced. Blaming the IMF will do no good.

THE IMPACT OF VENTURE CAPITAL

Banking systems are inherently conservative and status quo oriented. But conservative approaches are not enough if developing stock exchanges are to help reduce poverty. Mechanisms are needed to channel resources to the highest potential payoff, even though the risk may be higher than for traditional uses. Small businesses with no credit history need funding for expansion so they can grow into large businesses. African stock markets could provide the medium for such businesses to raise capital. There is, therefore, a need for risk capital for people with ideas and capabilities who need financing. Historically, much risk capital has come from wealthier people who know the potential users personally. Extended families play this role in many cases. Among religious or ethnic minorities, group solidarity is often helpful. Indeed, the great economic success of some groups results in part from their ability to mobilise resources within the community for promising enterprises. Larger firms, often suppliers, in an industry also may provide capital to new, smaller firms when they know the new firms' capabilities or potential.

For the most part, however, budding entrepreneurs lack access to capital from these sources. If they are to obtain capital, it must come from a source with which they have no personal acquaintance. This is where venture capital enters the development business. A venture capital financier looks for promising enterprises to back with funding and limited technical advice, perhaps for a considerable period of time. If the enterprise fails, the financier simply loses his stake. If it succeeds, the financier has acquired an equity stake in the company that allows him to benefit in proportion to the success and, sometimes, far out of proportion to his initial investment.

This need for venture capital is not limited to developing countries. The United States has the most developed venture capital industry in the world. Venture capital activity is aimed primarily at small and medium enterprises. Large enterprises are a different matter as they have the capital base and visibility that make them candidates for conventional lending, as well as bond sales and equity sales on a broad scale. At the moment, the venture capital sector within the African stock exchanges is almost non-existent, largely because large companies mainly dominate the markets. This sector, if developed, will go a long way to improving liquidity in the stock exchanges.

FACTORS THAT PROMOTE MARKET EFFICENCY

In general, there are several key factors which can promote and improve efficiency in the African capital markets sector:

Improved environment. Trade liberalisation, strengthening of the rule of law, improved legal and support institutions, better governance, improved transparency and better transport and telecommunications have helped to make it easier to do business in many African countries.

Economic reform. Many African countries have stabilised their economies, sometimes through the devaluation of overvalued currencies. They are reducing inflation rates and cutting budget deficits. Others are raising educational standards and, more generally, upgrading their human and technological resources.

Private sector encouragement. Many countries are stimulating economic growth by making life easier for the private sector. At least twenty African countries have broad-based privatisation programmes in place. When one looks at particular sectors, the number is even bigger. Some 25 countries in Sub-Saharan Africa are transferring all, or part, of their telecommunications ownership from the state to the private sector. In South Africa, for example, Telekom Malaysia, together with SBC Communications from the United States, has invested $1.2 billion in Telkom South Africa. The results of the privatisation efforts in Africa are already visible. Countries in which privatisation has attracted significant FDI include Ghana, Mozambique and Uganda.

Better FDI regulatory framework. The great majority of countries have substantially improved their FDI regulatory frameworks. Many more countries now allow profits to be repatriated freely or offer tax incentives and similar inducements to foreign investors. Many African countries have investment promotion agencies (IPAs) to assist these investors.

Venture capital provision. Small and medium sized companies constitute about 90 per cent of the businesses in Africa. Of this, a significant portion represents the informal sector. The small business and informal sectors do not, traditionally, have adequate access to credit facilities. A diversion of some FDI into the small business sector and helping the informal sector with a portion of ODA would help create jobs and improve the quality of life for the poor.

CONCLUSIONS

The achievement of sustainable development in the African capital markets sector requires an increase in investment, particularly foreign direct investment and micro-financing through venture capital. This will require both the maintenance of a stable macroeconomic environment and far-reaching improvements in governance. There will be a need fior discipline and transparency in the capital markets sector. The world is starting to rethink Africa's role in global markets. The challenge African stock exchanges will be facing in the near future is how to exploit the growing investor interest in their markets to create a virtuous cycle of growth. Secondly, the task for all African governments is to strengthen the institutional architecture of their economies to prevent capital flight and to minimise its consequences when it does take place. To effectively tackle these challenges, the management of the various African stock markets will have to:

- persuade their respective governments to stop interfering with the market because it sends out the wrong signals when governments want to be market regulators and participants at the same time;
- actively encourage investment in Africa. Africa needs to sell itself better to foreign investors;
- help create markets where it is easy to buy and sell securities and thus instil confidence in investors;
- help reduce corruption and promote regional integration and stability. Africa is seen abroad as being endemically corrupt and war-torn. It does the market a lot of harm when corruption and regional conflicts are regarded as the two core African values;
- help improve the legal framework. Securities laws have to be more effective and courts more impartial;
- help create the conditions for venture capital instruments. Venture capital will go a long way in helping small- and medium-sized companies to raise capital; and
- encourage new stock listings to improve investors' choices.

In general, African countries need to pursue policies that would allow them to efficiently tap into global financial market integration. It is logical to deduce that initial reactions to capital inflow will largely shape the patterns of future responses. African governments on their part will have to understand that:

- there is wisdom in curbing lending booms associated with capital inflows while redesigning the institutional structure of the financial system;
- it is wise to develop a well-functioning financial system to reduce the risks of potential instability as well as to attract global portfolio investment;
- developing countries need to build better shock absorbers and develop mechanisms to respond to instability because they will remain highly vulnerable to external shocks for quite sometime; and
- international co-operation between regulators and adequate disclosure of information at all levels are

increasingly important to ensure safe and efficient markets.■

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ADVANCING SUBSIDY REFORM: TOWARDS A VIABLE POLICY PACKAGE

David Pearce
Donata Finck von Finckenstein*

EXECUTIVE SUMMARY

World subsidies may total some $800 billion, of which perhaps two-thirds occur in the developed economies of the OECD. Reforming subsidy regimes that damage the prospects for sustainable development is immensely complex. Simply calling for subsidy removal is unlikely to succeed. The complexity arises from the fact that subsidies are manifestations of rent-seeking, which, in turn, is part of a wider category of unproductive activity in economic systems. Rent-seeking involves redirecting economic resources to special interest groups rather than using resources productively. Interest groups then use those resources to reinforce their privileged positions. Subsidy reform will inevitably conflict with those special interests. The idea that subsidy reform is a "win-win" policy is therefore misleading – there will always be losers, even if they are undeserving losers. In many cases, the most harmful subsidies will be those that are least easy to remove.

Subsidy reform is therefore about dissipating rents and has to be part of a wider macroeconomic and political reform programme. Subsidies are often linked to corruption, thus emphasising the difficulty of securing the political changes that are needed. Moreover, instituting democratic reform is not sufficient either — democratic societies have even larger subsidy regimes than less democratic societies. Political change has to be combined with economic reform. Some have advocated "sudden shocks" whereby dramatic events are seized as an opportunity to institute reform. There is some evidence to suggest that if a crisis does occur, it may be best to implement subsidy reform along with other transitional measures in one large package. An alternative is to let the almost inevitable growth of subsidies produce economic bankruptcy, and then institute reform. But many societies have proved surprisingly resilient whilst sustaining extensive subsidy regimes, and the costs of waiting may not be acceptable anyway.

In the absence of crisis, a gradual approach is best. Policies need to be pre-announced and gradual subsidy reduction needs to be combined with careful public awareness campaigns and efforts at political transparency and accountability. Bilateral and multilateral lenders have a strong role to play, even though reforming subsidies as part of a conditionality package is still controversial. Reform almost inevitably involves privatisation since exposure to market forces is essential for rent-dissipation. Nonetheless, reform is complex and its success is difficult to guarantee. For example, privatisation may simply shift rents from the public to the private sector. Subsidy regimes seem peculiarly resilient to change.

* David Pearce is Professor of Environmental Economics and Director, Centre for Social and Economic Research on the Global Environment, University College London, United Kingdom. Donata Finck von Finckenstein is a consultant in sustainable development issues.

THE ISSUE

WHILE the removal or reduction of subsidies to economic activity have widely been countenanced as "win-win" policies, the reality is that, while some considerable improvement has been achieved, subsidy removal is extremely difficult in practice. This difficulty of reform suggests that, while there may be net gains overall, there must be significant losers from reform, losers who have the ability to block reform measures. In the language of political theory, subsidy reform tends to be "non-neutral" – those who lose are often capable of strong lobbies against the reform.[1] Subsidy reform is not therefore a straightforward win-win policy, but a complex issue of wider reform, incentive design and political will. After briefly reviewing the situation with respect to subsidies, this paper lists a "menu" of policy options for reform. Whilst reform is possible, there should be no illusions that subsidies are institutionally deeply entrenched in most societies and the reform process will therefore be long and arduous.

WHAT ARE SUBSIDIES?

Advancing the reform of subsidies has, unfortunately, to begin with the problem of defining subsidies. We take a producer subsidy to be any form of intervention which lowers the cost of production of a producer, or raises the price received by the producer, compared to the cost and price that would prevail in an undistorted market. This definition allows us to distinguish subsidies from interventions which raise market prices but where the increase in price does not accrue to the producer. All product taxes, such as sales taxes and value-added taxes raise prices but not for the benefit of the producer. The definition also takes account of the fact that subsidies often take the form of price guarantees, raising producer prices over the free market price, as is common with agricultural price support schemes, as well as cost-reducing measures. Finally, the definition embraces all transfers to producers, regardless of whether they are targeted on products or simply take the form of cash sums payable to producers. Consumer subsidies similarly lower the price that the consumer would pay if there was a free market in the commodity in question.

The problem with these definitions is the meaning of an "undistorted" market. Few markets are genuinely competitive, and any element of monopoly will raise prices above their competitive level. If we keep the meaning of "distorted" to mean "distorted by government intervention" then the definition is fairly safe. It is usual to cite a reference point against which a prevailing price is measured. World prices, that is, the prices that would or do prevail in a freely functioning world market, are usually taken as the reference point.

HOW BIG ARE WORLD SUBSIDIES?

Table 1 records a "best guess" at the scale of world subsidies. The picture is a rapidly changing one and subsidies in the developing and transitional world are being reduced rapidly as those economies attempt to become more "open" in the context of world competition. It should be noted that the sources of information for estimating subsidies are not consistent and, therefore, some subsidised sectors are not analysed.[2] Nonetheless, Table 1 is instructive.

First, even allowing for the fact that only some subsidies have been identified (for example, subsidies to forestry and to the non-energy industrial sector are excluded), we see that world subsidies could amount to over $600 billion per annum, and may be as much as $800 billion. To get some idea of the scale of these figures, the entire GNP of the world is about $25 trillion, so the subsidies amount to around 2.4 per cent to 3.2 per cent of world GNP.

Second, total official development assistance (ODA) is about $60 billion per year, so world subsidies are at least ten times this figure.

Third, the subsidies are largest in the developed countries of the world: the OECD countries account for 75 per cent of the subsidies. One possible implication of this fact is that "conditionality" in aid packages could be compromised in political terms: for OECD countries to insist on subsidy reform in the developing world invites the kind of response that has become familiar in international environmental agreements, namely that the developed countries should undertake their own reforms first.

Fourth, agricultural subsidies in the developed countries dominate the picture. These tend to take

[1] Fernandez and Rodrik (1991) suggest that some reforms could have political support ex-post, but that ex-ante there is uncertainty about who the gainers and losers are. This uncertainty tends to result in an unwillingness to move from the status quo.

[2] Industrial subsidies to sectors other than agriculture and energy may be significant. For the United Kingdom experience and data, see Wren (1996). Industrial subsidies in the United Kingdom have declined dramatically, but even some newly privatised sectors still receive subsidies – for example, over United Kingdom £1 billion is paid to Railtrack, the company responsible for railway track and associated infrastructure. The sheer scale of subsidies can be gleaned by considering the estimate some 20 years ago that US Federal subsidies amounted to $95 billion (Common Cause, 1980).

Table 1. Estimates of World Subsidies ($ billion)

Sector	*OECD*	*Non-OECD*	*World*
Water			
Irrigation	2	20	22
Supply	—	28	28
Sanitation	—	5	5
Total Water	(2)	(53)	(55)
Energy			
Coal, Oil/products, Gas, Electricity*	10	62	72
Nuclear	9–14	—	9–14
Total energy	(19–24)	(62)	(81–86)
Agriculture			
Transfers	362	36	398
Fertiliser	—	>0	>0
Pesticides	—	—	—
Total agriculture	(362)	(36)	(398)
Fisheries	—	—	14–21
Forestry	—	—	—
Transport	55-174 (USA) 52 (Japan, Germany, UK)	— —	107-226
Total	490-614 +	151+	655-786

Sources: Water: Xie (1996); Energy: World Bank (1997a); OECD (1996, 1998); Fisheries: Milazzo (1998); UNEP (1997); Transport: OECD (1998); Agriculture: World Bank (1997a); OECD (1999).

the form of "price supports", that is, guaranteed prices to farmers. The $362 billion agricultural subsidy in the OECD accounts for 1.4 per cent of OECD GNP (OECD, 1999). Gross receipts to OECD farmers were some 59 per cent above what they would have been at world prices. The European Union accounts for about 40 per cent, or $142 billion; Japan for about 15 per cent, or $56 billion; and the United States for about 27 per cent, or $97 billion. Only small fractions of this support go to agri-environmental schemes.

Fifth, subsidies to transport are extensive but usually take the form of subsidies to public transport, which often have an environmental justification.

Sixth, subsidies to nuclear power are quite important in the developed world and perhaps amount to $9-14 billion per annum. World fisheries are subsidised by perhaps $20 billion. The fishery subsidy is perhaps the most stark since overfishing is reported in 80 per cent of the world's fisheries.

SUBSIDIES GOOD AND BAD FOR SUSTAINABLE DEVELOPMENT

Distributional Concerns

One initial purpose of subsidies is to protect the poor. Thus, distributional fairness is the first case in which subsidies might be justified. However, even this case needs to be treated with some considerable caution. In the context of water supply, for example, where the "protect the poor" argument is voiced very often, Briscoe (1997) points to the "hydraulic law of subsidies". Since politicians interfere in water pricing, the effect is rarely one of protecting the poor but of actually placing them at further disadvantage. Below-cost tariffs result in losses for public water utilities who cannot then invest in proper services. The scramble for the supplies that are provided results in the better-off securing supplies, and the poor often

having to resort to high cost vendors of water. The subsidies themselves actually produce the failure to protect the poor, however their objective is first formulated. Similarly, agricultural input subsidies, often designed to counteract other discriminatory measures against agriculture in developing countries, tend to benefit larger farmers because of their greater access to the inputs in question (van Blarcom, Kneedsen and Nash, 1993).

There are other more subtle ways in which subsidies, ostensibly designed to help the poor, may work against their own best interests. Housing subsidies tend to reinforce the poverty trap. In the United Kingdom, for example, the benefit paid to the unemployed is removed totally once employment is secured, effectively taxing away the marginal benefit of employment. The result has been substantial incentives to avoid employment, with a resulting complex and bureaucratic structure of work incentives having to be put in place (Kemp, 1998). Here the issue is perhaps more about the design of the subsidy, rather than the fact of subsidisation, but the example reveals that "wrong" subsidy design can worsen long-run equity rather than reduce it.

Environmental Concerns

Harmful effects of subsidies tend to come about because:

- the subsidy causes too much production or harvesting of the subsidised product, and hence too much associated effects such as pollution or resource depletion;
- governments have to find the money to pay for subsidies and this will come from taxation or borrowing, causing macroeconomic problems, or, at the very least, diverting money from socially valuable uses such as health and education;
- overproduction caused by subsidies in the developed countries has to be disposed of, and this may result in "dumping" the excess production somewhere else, perhaps in developing countries, undermining their economies;
- subsidies also divert resources away from higher value uses to low value uses, for example, the Sacramento Valley in California has arid climate conditions, yet it grows rice based on heavily subsidised water and accounts for as much as 80 per cent of California's water consumption;
- subsidies mean that true costs of supply are not recovered, which implies that the utilities supplying energy, water and so on, may not have enough revenues to secure surpluses that they can invest in new supplies. This is why public utilities in many developing countries are often locked into a vicious circle of poor supply and have little or no money for new investments
- subsidies create "economic rents" – money for doing nothing – and hence attract "rent-seekers".

With respect to economic rents, those who benefit from the rents will organise themselves to prevent the source of the rent from being removed. The popular picture is that subsidies are designed to benefit the poor, so if the poor object to the rents being removed or reduced, many people would be sympathetic to their cause. In practice, precisely because the subsidies create rents, the rents tend to be appropriated by the more powerful sectors of society. Far from the subsidies benefiting the poor, they often benefit the better-off who are skilled at organising lobbies to retain the subsidies. These subsidies are the hardest to remove, yet are likely to be the ones where rent capture is most entrenched. Paradoxically, the easiest subsidies to remove are those that do benefit the poor since they are often powerless to resist the change in policy. Rent-seeking – the search for opportunities where rents are created, often by legal restrictions such as bans or zoning of land use, but in this case by subsidies – is unproductive. It may keep lawyers and other lobbyists in business but it does little or nothing to enhance social well-being. Much agricultural subsidisation belongs in this category. For historical reasons, farmers tend to be quite powerful lobbyists. Taking their subsidies away therefore meets with strong resistance, whether in North America, Japan or Europe.

Subsidies and Technology

Subsidies can be justified in the context of stimulating technological change. Consider the example of renewable energy. Subsidising clean fuels will encourage their substitution for dirtier fuels, but could also lower the price of electricity overall, expanding the market. Both these effects could be made larger by the fact that renewable energy sources tend to be declining cost industries. While the market expansion effect could conceivably produce more pollution than previously, this seems very unlikely. The likely effect is that less pollution would be produced. Subsidies would also help renewable energy producers to reduce the risks inherent in not knowing precisely how costs will decline as output expands. Particular forms of subsidy are also attractive: the risks in renewable energy can only be reduced by capital investment, and this in turn suggests focusing subsidies on capital costs, for example, via accelerated depreciation allowances. Van Blarcom, Knudsen and Nash (1993) also suggest that targeted agricultural subsidies can stimulate technological change, as with high-yielding crop varieties in India.

Like all subsidy justifications, the technological case has to be argued carefully. It is comparatively easy for the technology-stimulating rent to be shifted to others who are not the intended beneficiaries, with a consequent loss of the technology stimulus. But by

focusing on new and clean technology, and by strong time-limits on the availability of the subsidy, the potential for abusing the arguments is minimised.

Paying for Environmental Services

Another context where subsidies may be justified is by reforming their nature, away from paying for overproduction, towards paying for environmental services. This can be observed in the agricultural sector of developed countries where, at the margin, subsidy reform is producing payments for tree growing, hedgerow planting, protection of ecosystems and even non-production (set-aside). As will be discussed later, overall subsidy levels may not fall but the nature of the subsidy is reformed so as to achieve some environmental goods rather than environmental bads.

Subsidies and Corruption

One of the side effects of subsidies is the encouragement of corruption. This is because the process of rent-seeking is likely to lead the beneficiaries of subsidies to exaggerate the basis on which they receive subsidies. The story is well known in the context of, say, housing support benefits but is also endemic to agricultural subsidies. Subsidy beneficiaries will be tempted to falsify statements about how much land area is farmed, crops planted and so on, and the less rigorous the inspection scheme the more likely they are to succeed in securing excess subsidies. Again, the activity of deceiving the authorities is unproductive, but it may also extend to bribing officials whose responsibility it is to monitor and enforce compliance with subsidy regulations. This was noted early on by Krueger (1974). Tullock (1980) noted that investment in rent-seeking can be subject to increasing returns, further stimulating the process, a view confirmed in Murphy, Shleifer and Vishny (1993). Moreover, rent-seeking behaviour gives a high incentive for the rentiers to keep hold of the status quo from which they benefit so much. Hence, as Rose-Ackerman (1999) observes, subsidies and corruption are intimately linked.[3]

[3] In an effort to contain the problem, we do not discuss corruption in any detail. Much of the analysis of corruption can be placed in the context of principal-agent theory whereby the agent agrees to act in the interests of the principal: for example, the police force acts in the interests of the public at large. The issue is then one of devising incentives whereby the principal can get the agent to act in the principal's interests, a problem that arises because principal and agent possess different degrees of information (so-called "asymmetric information"). For a discussion, see Brooks and Heijdra (1991).

THE PROCESS OF REFORM

The remainder of the paper addresses the issues of how, if they are judged detrimental to sustainable development, subsidies can be reformed. But first it is necessary to address a view that claims we may never be rid of subsidies.

The Case is Hopeless: Abandon Reform

Cost-benefit studies of subsidy reform tend to show that subsidies rarely have a rational economic justification, either in terms of economic efficiency or in terms of equity. But rationality all too often does not determine policy. Rose-Ackerman (1999) notes two extremes of the management of self-interest within any society. The first is the idealised competitive market model of Adam Smith in which self-interest produces a globally efficient outcome. The second is war, where individuals and groups compete violently for their share of the resource base of the economy. Whereas the competitive market is productive, war is totally unproductive since it destroys wealth and creates none. In between these extremes lies various mixtures of productive and unproductive activity.

As noted above, unproductive activity emerges from "rent-seeking", that is, the process of using time, effort and resources to secure a bigger share of the resource base for the rent-seeking individual or group (Krueger, 1974). Subsidies are effectively rents and thus attract rent-seekers who create a "special interest state" (Common Cause, 1980). To tackle subsidies effectively, it is argued, one has to tackle rent-seeking behaviour. But according to some, one can never destroy rent-seeking since it is rooted in human self-interest, a motivation that is genetically powerful and unlikely to be changed dramatically.

The response to this gloomy view is that rent-seeking is indeed highly unlikely to go away. But rent-seekers have to have rents to capture, and if the rents are not there they will be thwarted in their aims. The classic means of dissipating rents is to liberalise markets so that they become competitive, thus reducing rents. Against this, if the rents accrue to those in power, as is all too often the case, then government itself has no incentive to dissipate rents. Rents and rent-seeking become perpetual, and this, no doubt, explains why so many corrupt societies survive.

The answer then appears to lie in much grander realms, namely the whole process of generating participatory democracy such that (a) governments substitute some criterion of social welfare maximisation as their goal, and (b) those previously excluded from rent capture secure a "voice" to counterbalance those who remain dedicated to rent capture: rent dissipa-

Table 2. The Decline in Energy Subsidies 1990-1996

Region	*Percentage change in subsidies 1990/1 to 1995/6 (per cent)*
Russia	-67
Eastern Europe	-56
China	-58
Oil producers	-38
Others	-58
OECD	-21
Total	-51

Source: World Bank (1997a).

tion through countervailing power.[4] Ultimately, then, whatever the specific policies for subsidy reform, they are unlikely to work unless the much broader conditions of participatory democracy are in place.

The unnerving feature of Table 1, however, is that subsidies are biggest in the developed countries of the world, countries that already have universal participatory democracy. This suggests that even the whole process of democratisation is insufficient to reduce subsidies. We might conjecture that, while democracies have high subsidy levels, they are concentrated in a few sectors and must surely be declining over time as the pressure to dissipate rents grows. Table 1 does indeed show that subsidies are concentrated in the agricultural and energy sectors, although it is difficult to be sure of the extent of other industrial subsidies. But the time series evidence is mixed. Agricultural subsidies in the European Union, for example, are barely less now than they were in 1980, whereas energy subsidies have declined substantially but due, in the main, to reduced support for the coal industry in the United Kingdom. Fossil fuel subsidies to R&D have also declined systematically in the EU (Steele, Hetl and Pearce, 1999).

Overall, then, the reform package for subsidy removal has to include a two-part high-level process: political reform towards democracy, and a drive for market liberalisation once democracy is in place. The ambition embodied in this conclusion should not be underrated.

Reform through Crisis

Perhaps because of the view that rent creation and seeking are endemic to non-competitive economies, it is sometimes argued that the only real opportunity for radical reform of subsidies and other distortions is via an economic and political crisis (for example, see Drazen and Grilli, 1993). Weyland (1996) argues that, since individuals are more averse to losses than they are in favour of gains, a crisis effectively puts them in a situation of taking risks. Or it may be the case that a crisis simply presents an opportunity for change, with preferences for change being unchanged pre- and post-crisis.

Some evidence in support of the view that crises accelerate change is contained in World Bank (1997a) where it is shown that energy subsidies have declined dramatically in the last decade, but most noticeably in the former Soviet Union, the economies in transition and China (table 2). Nonetheless, it can be seen that energy subsidies have declined in all countries and there is an obvious contrast between the former Soviet Union and economies in transition on the one hand, where revolution has effectively occurred, and China, where subsidy reductions are just as large and political change has been far more gradual. This suggests that crises may be instrumental in bringing about change but are not a necessary condition of desirable change.

Corrales (1997) similarly doubts the wisdom of "waiting for a crisis" to implement reforms. First, he suggests that different countries may experience the same kind of crisis but each can react in different ways. Second, those reactions may include wholly undesirable features, for example, profligate spending rather than fiscal austerity. There are, for example, just as many instances of perverse policy responses to hyperinflation as there are sound responses. Third, he argues that there is little guidance as to what constitutes the "right kind of crisis" to generate desirable reform. Some crises are just as likely to hasten the demise of reforming governments as they are autocratic and corrupt ones.

Shock therapy has, however, been used, notably in countries faced with the collapse of prior communist rule. Mongolia, for example, adopted a dramatic programme of privatisation, market liberalisation and

[4] Sometimes called "rent avoidance".

incentives. The drawbacks of shock therapy include the chances that the public will not tolerate the short-term upheaval before reforms take effect, although much depends here on the prior culture of challenges to the state. In the case of Mongolia, there was little experience with political opposition, unlike the eastern European countries where dissidents had long voiced their concerns before the collapse of communism. Another, and perhaps critical drawback, is the need for the institutional capacity to manage the transition, for example the creation of effective local governments to manage a decentralised process (Collins and Nixson, 1993). In this respect, international technical and institution-building assistance is vital and arguably more so if the process is taking place rapidly and dramatically.

Macroeconomic crises in the 1980s were also the spur for governmental change and new governments have been the most active in undertaking structural adjustment, including subsidy reform (Krueger, 1992). Contrary to Corrales (1997), Krueger argues that only one country, Argentina, effectively failed to implement the reforms that were needed, although as she was writing five years before Corrales, some of the reform experiments were not capable of being judged fully. Nonetheless, even the reform process has problems in that the pendulum might swing too far the other way. For example, most developing countries discriminate against the agricultural sector. The reform process usually tackles this discrimination, at least in part, but then risks going too far in responding to the resulting requests and pressure for favouritism. In Korea, for example, discrimination against agriculture turned into outright protection of the sector, usually with justifications that are reminiscent of European policy after the Second World War – the need to protect against cheap imports and to ensure food security. Even today, Korea has per capita agricultural subsidies above the OECD average (OECD, 1999). As Krueger (1992) notes, using producer subsidies to meet equity goals is inefficient and if consumers must be subsidised then direct subsidies to food purchases should be used.

Overall, "waiting for a crisis" appears a risky policy measure in terms of the unknown outcomes, although the experience of structural reform in the 1980s suggests that, on balance, new governments coming in on the back of macroeconomic crises may have been successful in their reforms. Where crises do occur, and the reforming government is minded to implement a clean slate policy quickly, the critical needs are for public support and, in countries where wholesale political change occurs, the development of new institutional capacity.

Collapsing Beneath their Own Weight

A variation on the crisis theme declares that, because rent-seeking is a dynamic process, rent-seekers have incentives to expand subsidies to a level where, ultimately, the burden on taxpayers becomes so large the subsidy regime simply collapses. If true, the policy implication is again one of waiting for the inevitable demise of the system. There is perhaps more evidence to support this variation of the crisis theory. It is well known, for example, that the gravest threat to the European Common Agricultural Policy (CAP) is not pressure from within the existing EU-15 for reform of subsidies as they currently exist, but the likely effects of expanding the subsidy system to embrace the Accession Countries.

Current total agricultural support within the EU-15 is some $142 billion or some $950 per EU-15 household[5] (OECD, 1999). Existing agricultural support in Poland, Hungary and the Czech Republic amounts to nearly $6 billion, but would of course become substantially higher on accession if support systems are not changed. Moreover, there would be a supply response as accession country farmers respond to the higher prices. Additional CAP costs of some $30 billion have been suggested, though some have argued that this is an exaggeration in light of recent international trade agreements (Buckwell and others, 1994). Whether a 20 per cent increase in total cost is enough to cause the CAP to collapse under its own weight is open to argument. Since there are some 30 million households in the six prospective entrants, the effect would be to maintain the household average contributions if costs were distributed equally across countries. But since they will not be, existing EU-15 households can expect an effective increase in tax burdens because of accession.

The "weight of the cost" argument has prompted "Agenda 2000" under which intervention and support prices will be cut for cereals, beef and dairy sectors. But it remains the case that even under Agenda 2000, the vast bulk of transfers to the agricultural sector will remain in the form of production and income subsidies. That the CAP can survive in such a distorted and inefficient form, despite all the efforts to revise it, gives testimony to the difficulty of removing subsidies.

Tuck and Lindert (1996) detail the case of Tunisian food subsidies, which were established with ostensibly laudable aims: price stabilisation, protecting the poor, income redistribution and employment creation through subsidised real wages. Two major developments caused their collapse: (a) the leakage of subsidy benefits to higher income groups (reinforcing the caution in Section IV. A above), and (b) the high public finance cost. Early attempts at fairly sudden re-

[5] There are approximately 150 million households in EU-15.

form proved disastrous, with public riots occurring. A new approach combined several interesting features.

First, the subsidies were lowered gradually so that price increases occurred gradually.

Second, since students were instrumental in the riots accompanying the early reforms, policy changes were announced in summer months when students were not at university.

Third, careful anticipatory statements were made so that the population was warned well in advance of actual price changes, enabling them to adapt where possible, or at least get used to the idea of price increases. It is interesting to note that the same policy has been adopted in some countries with respect to environmental taxation. Thus the United Kingdom's "climate change levy" – effectively an energy tax – was announced in 1999 to take effect in 2001. "Anticipatory" strategies can misfire, of course, since they also give losers the chance to assemble their lobbies to fight against the eventual price rise (as has happened with the climate change levy).

Fourth, the government adopted awareness campaigns with the explicit purpose of explaining why subsidy removal was essential. In the case of Tunisia, the focus was on the fiscal burden and what its reduction, in terms of subsidy payments, could mean for other public benefits.

Fifth, and an essential feature of any reform package, compensatory measures were provided for targeted groups. Some state allowances were raised for vulnerable groups and some wage rises were allowed for strategic groups. Effectively, the reforms "bought off" some of the opposition through mitigatory measures.

Finally, a subtle approach to targeting the remaining subsidies was undertaken. Subsidies were targeted at "inferior goods", that is, goods that the poor would buy but the better-off would not (for example a less well-refined brown sugar). The subsidy thus does not "leak" to higher income groups. Markets in the more superior goods were liberalised so that the wealthier households diverted their expenditures away from the inferior goods and hence away from the subsidies.

The example of Tunisia is a good one for illustrating the need for carefully constructed and gradual approaches to subsidy reform.

Subsidies may collapse not because the fiscal burden becomes too high but because the environmental resource that is affected by the subsidy itself becomes so scarce that reform is triggered. Water vendors in developing countries owe their existence to the physical scarcity of water and poor quality water from public or informal supplies. Briscoe (1997) notes that trading water rights grew in Australia not because of government initiatives but because of pressure from users who faced water scarcity.

Again, it is a risky policy to wait for scarcity to force action: the human cost in the meantime could be considerable, not to mention the environmental damage that may be done, some of which could be irreversible.

Privatisation

Privatisation offers a means for subsidy reform since the dominant subsidies tend to be in the public sector. More broadly, the need to compete on the basis of market principles should dissipate economic rents and hence put pressure on any remaining subsidies. Privatisation not only enables the privatised sector to behave efficiently, but it also offers the chance for governments to become more efficient since they cease to be shackled by the responsibilities of nationalised industries and services (Ricupero, 1997).

The reality of privatisation is far more complex. In a review of experience with privatisation in Mexico and Chile, Glade (1989) notes that many of the rents previously available for exploitation under public sector regimes were squeezed out, but that some significant rents remained, notably in the financial sector.

In the Chilean case the effect was to subsidise borrowing for those with close links to the relevant financial institutions. In the context of an increasingly overvalued currency, the banks borrowed abroad to finance highly leveraged operations undertaken by the companies they were associated with. Essentially, then, credit was subsidised by the overseas borrowing operation and the beneficiaries were those with privileged access – rent-creation and rent-seeking continued.

Privatisation is often accompanied, perhaps paradoxically, by increased regulation of the privatised enterprises, a result of the state having to address external costs, such as pollution, but also because the state is unwilling to surrender all its controls and all the sources of rent-creation.

Glade argues for "substantive privatisation", that is, removal of all, or as many as possible, political controls on the working of the market. Chile is cited as the example of a country where privatisation proceeded apace, Mexico as an example where the removal of controls was much slower. Overall, simply privatising corporations will not remove rents unless there are coincident macroeconomic reforms that remove state control over crucial macroeconomic variables. Only this wider package of macroeconomic and microeconomic reform can insure against the creation of new rents under privatisation.

Additionally, privatisation can simply swap public sector rents for private sector rents. Perhaps the greatest criticism of the United Kingdom's privatisation programme has been the underpricing of public sector assets at the point of sale, creating huge capital gains and profits that translate into "fat cat" salaries and dividends, despite an elaborate system of price and investment regulation. The issue may re-

duce to which is a preferable location for the rents![6]

Slowly, Slowly and Transparently

The Tunisian experience suggests that subsidy reform is best achieved on a gradual basis unless, of course, economic crisis does provide the opportunity for wholesale change. The gradual route has several advantages: subsidy beneficiaries have time to adjust and "death by a thousand cuts" is usually preferred to sudden shocks. As noted above, the risk is that the rentiers have time to strengthen their lobby against the reform process. Where democratic government is in place, some public information procedures can help minimise the risk that lobbies gain strength rather than lose it through gradual reform. Familiar procedures include the registration of special interest donations to politicians and to political campaign funds, and limits on the size of such donations. It is surprising that simple measures of this kind have been fairly recent in highly developed democracies such as the United Kingdom. Politicians' interests in subsidised sectors similarly need to be monitored. Similarly, regular reviews of sectoral policies where subsidies exist are required, perhaps using cost-benefit analysis to assess their continued justification, along with "incidence assessment" to see if the subsidies are reaching those originally targeted. More radical still would be the required publication by governments of the nature and scale of prevailing subsidies (de Moor and Calamari, 1997).

Anyone who has tried to measure the scale of subsidies will testify to the formidable difficulty of identifying what subsidies exist, let alone estimating their size. But a combination of detective work and public interest motivation should be sufficient to elicit many of the facts, as the recent explosion of publications trying to estimate the size of subsidies has shown (Kosmo, 1987; Pearce and Warford, 1993; de Moor and Calamari, 1997; OECD, 1998). Where governments refuse to act, others can therefore take on the burden of publicity and transparency. To date, no single non-governmental organisation has assumed the responsibility for estimating the scale of subsidies. This may reflect the difficulty of financing the effort. The OECD's regular reporting of agricultural subsidies in its member countries, for example – the most detailed assessment of any subsidy regime – is a major financial undertaking.

Within the gradualist approach there is also scope for the gradual transformation of the subsidy targets. This policy involves not reducing the overall scale of subsidies, although that should remain a dominant aim, but redirecting the purpose of their payment. This process has already begun with agricultural support so that output-based payments have partly been substituted by area-based and other direct payments and, at the margin, payments are made for environmental services, including foregoing economic activity. Thus, around $3 billion was paid to EU farmers in 1994 for set-aside schemes, and some millions of dollars are paid under the EU agri-environmental programme. As noted above, however, even this process of subsidy reform appears insignificant against the sheer scale of production and income support to the agricultural sector.

Being Pushed: the Role of Lending Agencies

The final instrument for reform is conditionality, the process of seeking economic reform as a condition of receiving a benefit, such as a loan. The major practitioners are the World Bank and the IMF, but bilateral donors increasingly include forms of conditionality, including ethical policies. Loans and technical assistance may therefore be conditional not only on economic reform but on a transition to democracy. Conditionality has always been controversial (Reed, 1992, 1996). Designing the structural adjustment package in such a way that economic reform is achieved without serious impacts on the poor or on the environment is extremely difficult. Much of the problem concerns the usual need for short-term sacrifices in the interests of longer run stability and growth, a further manifestation of the inevitable trade-offs that come with virtually any policy measure. The World Bank has reviewed its own experience and has produced useful guidelines on the design of packages of reform as they relate to the environment (Munasinghe and Cruz, 1995). One key feature, echoed in the previous discussion, is the need to integrate pricing reforms for subsidy removal with other macroeconomic adjustments: targeting one issue and one sector is unlikely to succeed.

The World Bank has also gone further and issued guidance to assist countries in tackling corruption (World Bank, 1997b). As Rose-Ackerman (1999) observes, even publishing statements about corruption enables an issue previously brushed under the table to be faced openly and honestly.

CONCLUSIONS

The reform of subsidies that damage the prospects for sustainable development is a complex process. Most of the complexity arises from the fact that subsidies are manifestations of a wider category of unproductive activity in economic systems, namely rent-seeking. Since rent-seeking and capture is essentially

[6] The United Kingdom halted its privatisation programme in 1994 due to concerns about the emerging corruption. One government official reportedly stated "If you think privatisation is corrupt, try without it". Quoted by Kaufman and Siegelbaum (1997).

a process of trying to maximise the transfer of resources to a group of special interests, subsidy reform will inevitably conflict with those special interests. Widespread discussion of subsidy reform as a "win-win" policy is therefore misleading – there are always losers and, virtually by definition, the most harmful subsidies will be those that are least easy to remove.

The essentials of subsidy reform are therefore the essentials of dissipating rents. Tackling subsidies alone is therefore unlikely to solve the problem. What is required is that subsidy reform be part of a wider programme of macroeconomic reform and political reform. The links between subsidies and corruption underline the difficulty of securing the political changes that are needed. Moreover, it is not even a "simple" matter of arguing that a democratic system will give rise to countervailing pressures that will provide "voice" to those with an agenda for removing subsidies. Wholly democratic societies have even larger identifiable subsidy regimes than less democratic societies. The issue is therefore a delicate one of combining political change with economic reform. While the "sudden shock" school of thought has many good insights into the process, sudden shocks rely on some catalytic event which cannot (usually) itself be manipulated by policy – the fall of communism, or macroeconomic crisis. Nonetheless, there is some evidence to suggest that if a crisis does occur, it may be best to implement subsidy reform along with other transitional measures in one large package. An alternative is to wait for things to get really bad, either because the subsidies effectively bankrupt the public finances, or because they induce natural resource change which triggers some other crisis, such as water famine or rampant disease. But many societies have proved surprisingly resilient whilst sustaining extensive subsidy regimes, and the costs of waiting may not be acceptable anyway.

Where the issue is not going to be forced by a crisis, the gradualist approach is best. Again, this has to consist of pre-announced policies and gradual subsidy reduction combined with careful public awareness campaigns and efforts at political transparency and accountability. Lending agencies have a strong role to play, even though reforming subsidies as part of a conditionality package is still controversial, especially for many environmentalists. Privatisation is likely to be part of the reform process since, in principle, exposure to market forces is essential for rent dissipation. But there are cautions on all policies: privatisation may create rents or simply transfer rents from the public to the private sector; many subsidies show a very marked reluctance to go away or even be reduced. Ultimately, subsidy removal is down to the scarcest resource of all – political will.■

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TAXES AND TRADABLE PERMITS AS POLICY OPTIONS FOR CONTROLLING POLLUTION: A REVIEW OF COUNTRY EXPERIENCES

John Norregaard
Valérie Reppelin-Hill[*]

EXECUTIVE SUMMARY

This paper examines the relative merits of two dominant economic instruments—"green" taxes and tradable permits—for reducing pollution. Theoretically, the two instruments share many similarities, and on balance, neither seems preferable to the other. In practice, however, most countries have relied more on taxes than on permits to control pollution. The analysis suggests a number of lessons to be learned from country experiences regarding the design and implementation of both instruments. While many, particularly European countries, currently have long-term programs involving environmental taxes, a willingness to experiment with tradable permits seems to be growing, especially given the Kyoto protocol emission targets.

INTRODUCTION

SINCE Pigou's (1920) seminal contribution on the efficiency enhancing use of taxes to correct for negative externalities, the choice of instruments for environmental policy has been extensively debated. The environmental economics literature has drawn a sharp distinction between command and control approaches (CAC) and the use of market-based incentives (MBI). While on theoretical grounds, MBIs are generally preferred because they are more cost effective in practice, CAC policies have been predominantly used. This apparent contrast was highlighted at the time of the environmental revolution in the late 1960s and early 1970s. Oates (1999) suggests three explanations for this. First, at the time, there was no constituency to whom the economists' view had much appeal (that is, environmentalists were decidedly hostile, industry was not very sympathetic and regulators were less than enthusiastic about discarding traditional methods of regulatory controls for a largely untried system of taxes on pollution). Second the state of environmental economics in the late 1960s and early 1970s did not go much beyond the general conceptual level. Third, there seemed to be a pervasive ignorance of the economic approach to environmental policy outside the economics profession itself. In recent years, however, economic instruments have played an ever-increasing role in environmental policymaking, reflecting their perceived superiority vis-à-vis CAC policies. And while the early discussion focused almost exclusively on the tax approach, the scope has broadened to include tradable permits. The discussion has taken on a new importance following the agreement in December 1997 to reduce emissions of "greenhouse gases" under the Kyoto Protocol.

Indeed, on December 10, 1997, 160 nations reached a historic agreement in Kyoto, Japan, on limiting emissions of carbon dioxide (CO_2) and other "greenhouse gases." The Kyoto Protocol calls for the industrialized nations—the so-called Annex I countries—to reduce their average emissions over the period 2008–2012 to about 5 per cent below 1990 levels. The United States pledged to reduce its emissions by 7 per cent below 1990, slightly less than the European Union (8 per cent) and slightly more than Japan (6 per cent). The Protocol permits some industrialized nations to increase modestly their emissions in the short run, while making special provisions for the members of the former Soviet Union. None of the developing countries, including those with large and

[*] John Norregaard is Deputy Chief and Valerie Reppelin-Hill is Economist in the Tax Policy Division, Fiscal Affairs Department, International Monetary Fund. They would like to thank Liam Ebrill, Angelo Faria and Harald Hirschhofer for useful comments.

growing emissions such as India and China, is required to limit their emissions.[1]

The agreement reached in Kyoto sets the stage for lengthy and complex pre-ratification discussions both at the national and international levels, as the proposed targets are likely to impose significant costs on the global economy.[2] A key issue is the appropriate international distribution of these costs. While recent public opinion polls indicate increased concern about climate change and some willingness to share burdens to curb greenhouse gas emissions, there is no compelling evidence that the public is ready to accept significant increases in energy prices or other costs. It is thus still an open question whether countries will be willing to ratify the Protocol.

An important first step in fostering a productive debate and increased public awareness over the Protocol is a better understanding of its benefits and costs. Even after questions about the Protocol itself are settled, domestic policy options for achieving the targets and timetables will still require more thorough consideration, as clearly the magnitude of the costs will depend on the domestic policies used. No agreement yet exists on this policy menu. However, much of the debate has centered on the use of MBI mechanisms as opposed to CACs, precisely because of the large potential cost savings that MBIs offer.[3] Among MBIs, the basic choice faced by policymakers concerns price-based versus quantity-based instruments or, in other words, environmental taxes versus tradable permits.

This paper discusses the choice between these two economic instruments. The first part reviews the theoretical literature, starting from the Pigouvian tradition with the aim of clarifying the contribution of economic analysis to the environmental policy debate. We show that, in a first-best setting, Pigouvian taxes and tradable permits are equivalent. However, this fundamental result ignores crucial features of the practical world. We then proceed to review the more recent literature on the choice of environmental policy in a second-best setting. To do this, we define a set of criteria along which the two instruments may usefully be compared, and we show that no instrument is clearly preferred to the other. The second part of the paper reviews the actual use of the two instruments, mainly in the Organization for Economic Cooperation and Development (OECD) countries. In sharp contrast to the apparent similarities of the two instruments discussed in the first part of this paper, in practice, countries have relied substantially more on taxes than on permits to control pollution (with the notable exception of the United States). Yet willingness to experiment with tradable permits seems to be expanding. We discuss issues in this section that may arise in a practical setting and that are typically not discussed in most theoretical studies. Finally, we suggest broad conclusions with respect to the implementation of both types of instruments. Specific country experiences are discussed at length in the annexes.

ECONOMIC THEORY AND THE DEBATE ON EMISSION TAXES AND TRADABLE PERMITS

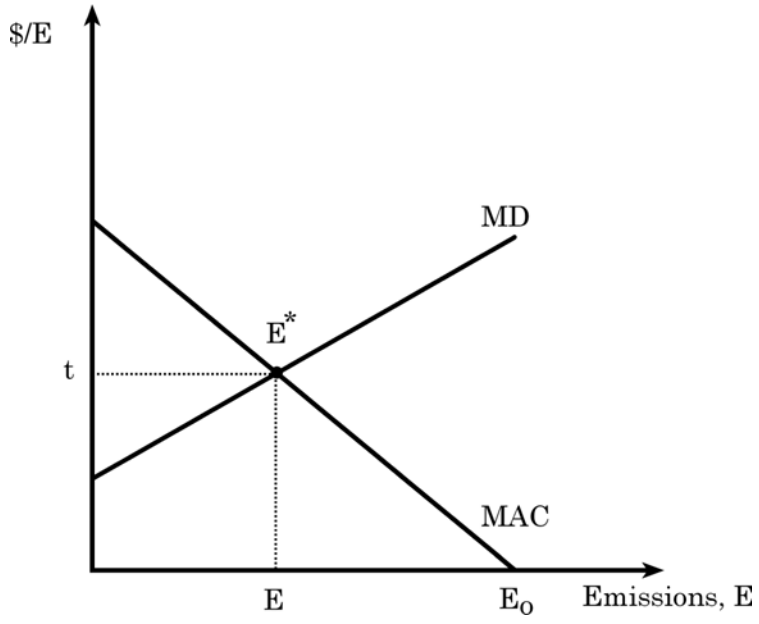
Pollution taxes and marketable pollution permits are, in principle, very similar policy instruments. Both rely on price signals and incentives for emitters to reduce the costs they impose on society. Pigouvian taxes (Pigou, 1920) involve setting a charge per unit of emissions equal to the total value of the damage caused by an extra unit of emissions. This signals the true social costs to the emitter, who then has a financial incentive to reduce emissions up to the point where the profit/loss due to a unit reduction in emissions is equal to the damage involved. In a system of marketable permits, the regulatory authority allocates permits equal to a determined aggregate quantity of emissions, possibly, but not necessarily, through an auction. The permits are tenable for a defined period (or perhaps indefinitely) and tradable. Trading of permits among emitters will, enforcement problems apart, establish a market-determined price of emissions which, as in the case of a tax, will signal damage costs and give emitters financial incentives to respond by reducing emissions. The following subsection demonstrates the efficiency equivalence of the two instruments in a first-best setting, while the subsequent subsection discusses second-best scenarios and compares the two instruments along a series of relevant criteria.

[1] The Protocol implicitly recognizes that developing countries may need additional time to meet the requirements of the agreement, taking into account potential technical and economic constraints.

[2] For example, the limit agreed to by the United States implies a reduction by about one-third compared to the estimated level of CO_2 emissions at the end of the next decade in the absence of such measures.

[3] Tietenberg (1985), in a review of several studies, found that the potential magnitudes of these cost savings range from 50 to 90 per cent. More recent studies by O'Ryan (1996) and Klaassen (1996) show quite similar results.

Figure 1. Emission Taxes and Tradable Permits in a First-Best World



The Equivalence of Emission Taxes and Tradable Permits in a First-Best World

To establish a basis for comparison among relative policy instruments, the traditional literature often relies on the following assumptions: (1) that the same amount of emissions from different sources have equal external costs; (2) that raising revenues through environmental policies is not in itself costly—in other words, the literature ignores possible interactions with other markets and/or other revenue sources; (3) that there is no uncertainty about the costs and benefits of pollution control; and (4) that a competitive structure prevails. We will refer to this set of assumptions as the first-best world scenario. In this setting, it is easy to show that emission taxes and tradable permits are, in a fundamental sense, equivalent (for example, they achieve the same level of emissions with minimum levels of abatement costs). Figure 1 illustrates this outcome.

The marginal damage (MD) function specifies the damages associated with an additional unit of pollution. It is typically assumed to be increasing, for example, as the level of pollution becomes larger, the damages associated with a marginal unit of pollution become larger (possibly because dilution in the atmosphere is less effective).

The marginal abatement cost (MAC) function specifies the costs associated with the reduction of an additional unit of emissions. These costs include the costs of the labor, capital, and energy needed to lessen the emissions of pollution associated with particular levels of production. These costs may also take the form of opportunity costs from reducing the levels of production. Generally, firms can reduce emissions by four means: (1) reducing output; (2) treating or intercepting emissions before they enter the environment (end-of-pipe treatment); (3) changing input; and (4) changing production processes.

The literature on pollution control makes no specific assumption as to which of the four options firms will typically choose (firms will choose whichever option minimizes costs and that will depend on the specific pollutant considered). However, the marginal abatement cost function is generally assumed to be decreasing indicating that as firms reduce pollution below the level they each privately regard as optimal and toward zero, the cost of abatement increases (as the cheaper alternatives are exhausted, more expensive steps must be taken to further reduce pollution).

E_0 corresponds to the level of emissions that would prevail in the absence of emission-control policy (firms have no incentive to abate and MAC equals zero). E* corresponds to the optimal level of emissions, where the marginal damage of an extra unit of emissions equals the marginal costs of abating one extra unit of emissions. E* can clearly be achieved by imposing an emission tax equal to t upon each unit of

emissions; polluters would then find it more costly to pay the tax than to adopt measures that reduce their emissions from E_0 to E. Similarly, the optimal solution can be attained if the environmental control agency issues a quantity of permits just sufficient to lead to a level of emissions equal to E. In the specific case considered, the permits must allow (E_0-E) units of emissions. Assuming that the market for permits is competitive, the price of a permit will be bid up exactly to t, that is, to the corresponding marginal cleanup cost. Thus, under the specified conditions, the two approaches will lead to the same outcome, reducing emissions to the optimal level at minimum cost.

While this basic equivalence holds in principle, the two approaches exhibit some important differences in a practical policy setting, when the basic underlying assumptions are relaxed to conform more closely to conditions that are likely to prevail in the real world. The following section discusses the choice of policy instruments in a second-best world and suggests a set of criteria along which the emission taxes and tradable permits may be usefully compared.

Emission Taxes and Tradable Permits in a Second-Best World

Bohm and Russell (1985) suggest comparing alternative instruments to control pollution along several main dimensions: information intensity, efficiency, ease of monitoring and enforcement, flexibility in the face of economic change, dynamic incentives, and political considerations. We will also discuss revenue-raising potentials as an important additional criterion.

Information intensity

Information intensity is defined as the amount of information that the pollution control agency must have in order to operate the system in question. Clearly, in order to achieve the optimal level of emissions, the regulator must have information on firms' marginal abatement costs and the marginal damage from emissions. Hence the information requirements

Box 1. Pollution control when marginal abatement costs are uncertain

Figures 2 and 3 below illustrate the efficiency losses associated with an emission tax and a system of tradable permits when MACs are uncertain. Let MAC^A represent the regulator's anticipated MAC while MAC^T represents the firm's true MAC. Under an emission tax, the regulator would set thebbg tax equal to t, where MDs equal the anticipated MAC, which would result in a level of emissions equal to E^t, where the MDs are equal to the firm's true MAC. The efficiency losses resulting from the use of the emission tax are represented by area E^*AB. Under a permits system, the regulator would issue a permit amount equal to E^P. The efficiency losses under this scenario are equal to area E^*DC. Figures 2 and 3 illustrate that when the MD is relatively flatter, the emission tax yield lower efficiency losses whereas when the MD is relatively steeper, the results are reversed and it is the permits system that generates lower efficiency losses.

Figure 2. Pollution control when the MD function is flatter than the MAC function

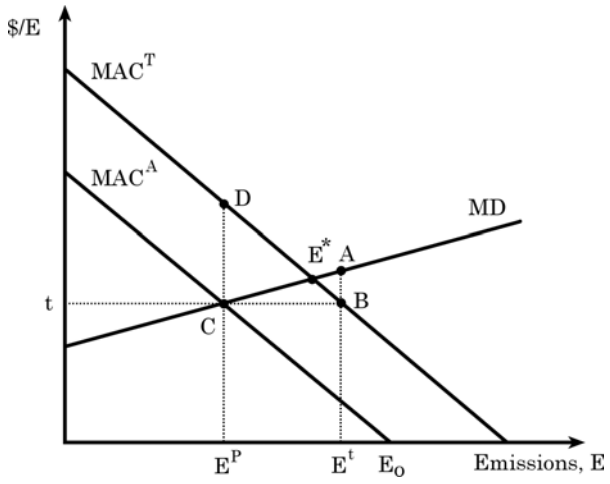
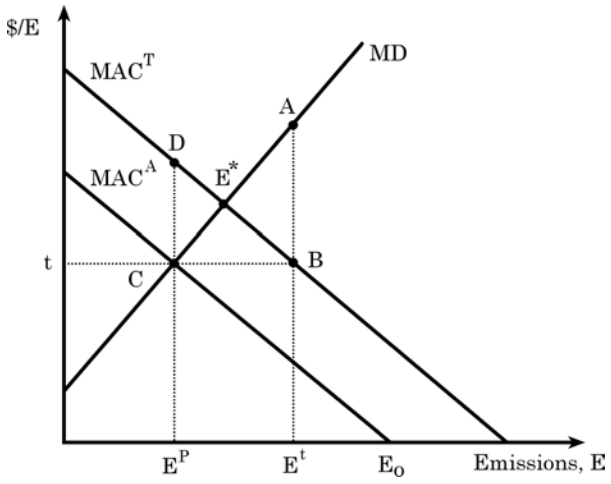


Figure 3. Pollution control when the MD function is steeper than the MAC function



are identical, whether using a system of emission taxes and/or tradable permits.

When there is uncertainty either about the marginal benefits or the marginal costs of abatement, the socially optimal level of emissions will typically not be achieved. The goal of the policy then is to minimize efficiency losses. An important result is that *when the marginal costs of abatement are known, uncertainty about the benefits does not favor one policy instrument over the other*. Firms abate only on the basis of their costs and of the policy instrument, which are both known. So, even if the benefits deviate from expected levels, the abatement level and the efficiency losses will be exactly the same for the emission tax as for the tradable permits system (Baumol and Oates, 1988).

When abatement costs are uncertain, producers are assumed to have information, which the planner does not have and their actions may therefore differ from those the planner had expected. Weitzman (1974) and White and Wittman (1983) were among the first to carry out a rigorous analysis of whether an emission tax or a system of tradable permits would be the best policy in this situation of asymmetric information. They show that *taxes minimize ex-post efficiency losses if the marginal cost function is steeper than the marginal damage function, while tradable permits are better if the damage function is steeper*. It is therefore the relative steepness of the marginal damage and marginal abatement cost curves that determines which of the two policy instruments promises the smaller efficiency losses.

The basic idea is straightforward (Box 1). When the marginal benefit curve is relatively steeper (this would represent a case where the benefits from changes in environmental quality vary dramatically with changes in pollution levels), one wants to ensure reliable and precise control over the quantity of emissions (to avoid crucial threshold effects for instance). In such instances, tradable permits are preferred. On the other hand, when the marginal cost curve is steeper, for example, deviation in emissions are less costly than unexpected marginal abatement costs, the more pressing danger from a policymaking perspective is one of excessive cost. In this setting, the danger is greater under the permits instrument for, if the supply of permits is set too low, excessive compliance costs will be set upon firms. With the emission tax, the danger is avoided since firms can always opt to pay the tax and avoid the more costly control activities to reduce emissions.

What can we say about the relative steepness of the marginal damage curve relative to the steepness of the marginal abatement cost curve? In general, not much. Baumol and Oates (1988) argue that in real world situations, both marginal abatement costs and marginal damages are unlikely to be known with certainty by the regulator who is vulnerable to the provision of biased information by interested parties. In light of these difficulties, the literature suggests that policy should aim instead at achieving predetermined aggregate emission standards (however defined) in a least-cost manner (for example, minimizing total abatement costs). Under this second-best scenario, marketable permits seem to have a considerable advantage over emission taxes, since the regulatory target is automatically built into the instrument being used and no additional information is needed. In order to attain the same target using taxes, the regulator needs some information on firms' marginal abatement costs. In the absence of such information, the authority may have to alter the tax in a process of trial-and-error iterations until the targeted level of emissions has been reached.

Efficiency under noncompetitive market structure

Efficiency is defined as the ability of an instrument to reduce emissions to a predetermined level at minimum abatement costs. This dimension is almost always interpreted in the literature in a static sense (assuming fixed environmental goals and fixed technology and allowing only for the first round of reactions to the respective instruments). We will also limit ourselves to static considerations in this section but will consider dynamic incentives in a latter section.

As noted earlier, in a first-best setting, the efficiency equivalence of emission taxes and tradable permits is well established. In the previous section, we discussed efficiency considerations under uncertainty. In this section, we assess how the efficiency properties of the two instruments are affected when one allows for noncompetitive market structure.

In the case of noncompetitive market structure, there are two sources of market failure: pollution externalities and market power. The first best solution to achieve efficient resource use would require the use of two instruments to address each failure separately (for example, a subsidy on output to correct for market power and an emission tax and/or a system of tradable permits to correct the pollution externality). But can the environmental instrument alone correct for both sources of market failure?

In general, when the output market is not assumed to be perfectly competitive, neither emission

Table 1. Summary of Efficiency Considerations and Market Structure

Market Structure	*Emission Tax*	*Tradable Permits*
Perfect competition	Efficient	Efficient
Noncompetitive market structure in the output market	Efficiency can be achieved by suitably adjusting the Pigouvian tax but only if firms are all identical. Inefficient when firms have different pollution technologies.	Inefficient but literature suggests that efficiency losses may be smaller than under an emission tax (when firms have different pollution technologies).
Noncompetitive market structure in the permits market	n.a.	Inefficient

taxes nor tradable permits achieve the social optimum. Buchanan (1969) considers the most simple case, the taxation of a monopolist polluter, and argues that a Pigouvian tax is likely to generate welfare losses by further reducing output in a situation where the monopoly's output is already less than optimal. Analyzing general control instruments, Burrows (1981) points out that the risks that pollution taxes will increase welfare losses rise as the importance of output reduction from abatement rises; equivalently, the risks get less as the importance of process switching (end of the pipe purification) rises.[4] The problem of calculating a "second-best fee" then weighs these needs against each other by combining a Pigouvian tax and a subsidy on output.[5] Similar considerations can be made for market powers other than monopoly.[6] Hence, the literature appears to suggest that the social optimum can be achieved by a suitably adjusted "Pigouvian" tax, although, as Requate (1993) points out, the argument holds only when firms are assumed to be identical (for example, with similar pollution technology). Pigouvian taxes fail to achieve first-best outcomes when firms have different pollution technologies (in such instances, the social optimum can only be reached through firm-specific emission taxes).

Malueg (1990) considers the distribution of permits in a Cournot Oligopoly on the output market, and shows that the social optimum cannot be achieved either. Permits fail to achieve first-best because they encourage firms to collude. Given that neither an emission tax nor a system of tradable permits can achieve the social optimum, the question is whether in general terms one of the two policies is less inefficient. Requate (1993) argues that although no policy can be said to be superior to the other in all cases, the permits policy yields a higher welfare for a considerable range of parameters. In particular, if one firm's technology is globally inefficient, meaning that the firm should not produce in a social optimum, this inefficient firm will never produce under a permits system, regardless of how the permits are initially allocated. The optimal emission tax, on the other hand, does not always induce the inefficient firm to close down.

When dealing with tradable permits, however, the danger of market power is more prevalent in the permits market, since when firms behave as price setters—whether as sellers or buyers—many of the potential benefits of a tradable permits system will be lost (Koustaal, 1997; Xepapadeas, 1997). For this reason, the potential for market power on the permits market has long been recognized as a disadvantage of tradable permits, relative to other MBIs such as taxes, for instance. When is market power most likely

[4] In this case, there are two sources of market failure that need to be addressed, namely, pollution externalities and market power characterized by a level of output that is less than optimal. Any instruments to correct for the environmental externality will encourage firms to reduce emissions. And to the extent that emission reductions are accompanied by reductions in output, the second type of market failure (for example, suboptimal output levels) will be exacerbated and hence some welfare losses will occur. This risk is reduced when emissions reductions can be achieved through other means (end-of-pipe treatment, and the like).

[5] This sum collapses to the familiar Pigouvian tax if the industry is competitive, and it will equal zero if, as Buchanan suggests, the two effects cancel each other.

[6] In the case of an oligopoly for instance (Ebert, 1992), the derivation of the second best fee would depend on the behavioral assumptions about the firms, but would essentially incorporate the same trade-off between the concerns of market power and excessive pollution.

to occur? Clearly it depends on the degree of concentration on the permits market. Harrison (1999) presents estimates of the extent of concentration of emission sources in the United States which suggest that the greatest potential for market power would be in a market for permits for particulate matter, followed by SO_2 and CO. Indeed, since the effects of the former are quite localized, any program for particulate permits would have to be local in nature. This is also true for water pollutants since the environmental problem is localized and thus the permits market is likely to be spatially restricted (Misiolek and Elder, 1989; Lyon, 1982; Hahn, 1989). The potential for market power is also a function of the sectoral scope of the permits market. For instance, in the United States SO_2 program, only electricity generators were included and not other sources. As a consequence, very few firms dominated permits trades. In 1995 and 1996, over 75 per cent of all interutility purchases of permits were bought by one firm, Illinois Power (Ellerman and others, 1996).

There is, unfortunately, little empirical evidence of the extent to which market power is a problem in existing tradable permits systems. However, firms themselves clearly perceive the danger. For instance, in the case of SO_2 permits, utilities in fast-growing states advocated that at least some of the permits be auctioned—even though this would appear to have adverse effect for them in financial terms, because of concerns that utilities in other states would exploit the market to their advantage (Joskow and Schmalensee, 1998). This fear was also behind the concerns of small firms advocating an auctioned permits allocation for the Regional Clean Air Incentives Market (RECLAIM) system, even though it would not appear to be in their financial interest (Polesetsky, 1995). Table 1 below summarizes the main findings of our discussion.

Ease of monitoring/enforcement

The third criterion refers to how difficult it is to make and interpret the necessary technical measurements to judge compliance with a reasonable degree of accuracy. In many cases, it is almost impossible—or at least extremely costly—to obtain accurate information about emission levels. But a central point is that the monitoring and measurement problems are no harder if an emission tax is involved than if compliance with a system of tradable permits is the concern. When permits are marketable, the problem may be compounded by the necessity of being current with completed trades. In other words, in this case, two types of monitoring are required: the monitoring of emissions as required under a emission tax as well as the monitoring of trades. This extra difficulty might be exploited by dischargers trading in the short run to stay one jump ahead of agency monitoring teams.

To lower excessive administrative and monitoring costs, regulators often target the polluting output and/or the inputs used in the production of polluting goods through the use of output and/or input taxes as alternatives for true emission taxes.[7] Indeed, where emission taxes pose major problems for implementation, a tax levied at an earlier stage in the production cycle may be the preferable approach since monitoring of emissions levels is not required and it can be administered like any other tax, thereby reducing administrative costs (since governments do not need to create an additional administrative apparatus). While systems of this nature typically do not achieve the most efficient result economically, they are often preferred by policymakers who argue that the gains in terms of lower administrative costs exceed the efficiency losses. In contrast, targeting input or output rather than emissions is typically not applicable with a system of tradable permits,[8] thereby reinforcing the relative appeal of the tax in terms of ease of monitoring and enforcement.

Flexibility in the face of change

For our purposes, flexibility is defined as the ease with which the system can be adjusted to maintain the desired ambient quality as the economy changes. The most common measures of ease are: (1) the amount of information the agency needs and the amount of calculations it has to do to produce the appropriate set of incentives for a new situation; and (2) the extent to which adjustments involve a return to a politically sensitive decision process. In terms of flexibility, it is often argued (Bohm and Russell, 1985) that marketable permits have a distinct advantage over an emission tax. Once established, and assuming necessary monitoring and enforcement efforts, a permits system maintains either total emissions or

[7] This approach seems particularly warranted when inputs and/or outputs are assumed to be closely correlated with emissions.

[8] At a conceptual level, a system of marketable permits for input is conceivable (Helfand, 1999). However, in practice such systems have never been used since it is extremely difficult to determine the levels of aggregate inputs use necessary to achieve a specified level of total emissions. Developing a system of marketable permits in input markets, then, will not clearly achieve a specified pollution level without a great deal of information on the part of the regulator.

ambient quality standards without constant intervention and recalculation by the regulator. If the demand for permits shifts because of regional growth or decay, this will be reflected in the market prices of permits. Permits relocation takes place as long as firms find it in their interest to reduce emissions and sell permits to new entrants and/or expanding existing firms. In the case of an emission tax, the tax itself does not protect ambient quality unless it is adjusted by the regulator as change occurs. Such adjustment requires new calculation if the tax is to be efficient.

The above argument relies mainly on the fact that flexibility is defined from the perspective of the regulator. In the case of an emission tax, the adjustment responsibility to maintain a fixed emission target in the face of change is borne entirely by the regulator. Hence, the adjustment process is typically associated with high administrative costs and, therefore, qualified as "less flexible." With a system of tradable permits, on the other hand, the adjustment responsibility in the face of change is borne by firms in the permits market. It is typically not associated with high administrative costs but it may be associated with high transactions costs. Indeed, trade of permits involves the costs of identifying exchange partners and revelation of willingness to pay and to accept. If these transactions costs are perceived to be high relative to anticipated gains from acquisition and/or sales of permits, there will be little exchange and the adjustment process may not take place. In such instances, the least cost configuration of emissions will not be achieved and a permits system may not be more flexible than an emission tax.

The efficiency and flexibility property of the permits system thus relies on the assumption that trading does indeed occur (for example, transactions costs are low). How high are the transactions costs likely to be? Estimates of transactions costs for the United States EPA's Emissions Trading System were as high as 10–30 per cent of the total costs (Koustaal, 1997). Klaassen and Nentjes (1997) cite a figure of 5 per cent for brokerage fee for the United States SO_2 allowance trading program. The CFC and lead trading programs are also thought to have had relatively low transactions costs (Stavins, 1995; Hahn and McGartland, 1989). Conversely, the Fox River biochemical oxygen demand (BOD) program appears to have been burdened by very high transactions costs, partly explaining the limited trading activity. Transactions costs are likely to be determined by the characteristics of the affected sectors. Koustaal (1997) argues that, in most cases, there is likely to be a positive relationship between the size of the market and transactions costs (that is, the larger the market, the higher are the search and bargaining costs likely to be). In case of a thin permits market, the infrequency of transactions may not generate a clear price signal for firms to indicate the opportunity cost of their emissions and is likely to impair the functioning of the permits system, unlike a regime of emission taxes where the tax itself gives a clear and clean measure of the cost of emissions.

Dynamic incentives

The concept of dynamic incentives refer to the types of actions that are encouraged by the instrument in the longer run: does the instrument encourage entry or exit of firms (for example, what is the impact of the instrument on industry size) and a search for and adoption of new, environment-saving technologies?

Concerning the respective impact of the two instruments on industry size, both emission taxes and tradable permits raise emitters costs and thereby reduce their profits from the polluting activity. In the short run, firms may reduce output in response to the higher unit cost of production. In the longer term, if the industry producing the pollutant is competitive, some firms will leave the industry. As industry output falls, the price of the industry's product will rise, restoring normal levels of productivity for those firms which remain. In the long run, both instruments result in reduced industry output and reduced pollutant emissions, compared to a situation of no pollution controls. It is important to note that whether tradable permits are auctioned or distributed freely makes no difference to industry output and emissions in the long run, provided that the initial distribution of permits is not conditional on whether the recipient continues to produce. If permits are issued "unconditionally," any amount paid to acquire a permit will, in effect, be a lump-sum payment to the initial recipient and will have no effect on firms' decisions to exit or enter the industry.

In practice, however, permits are rarely distributed unconditionally but rather in proportion to historical pollution, a system that is referred to in the literature as grandfathering. It has been argued (Howe, 1994; Stavins, 1998) that grandfathering creates a bias against new firms entering the product market since existing firms get their permits free while new firms must buy them. Hence tradable permits may foster noncompetitive market structure or higher industry concentration. Freely allocated tradable permits under a grandfathering scheme would convey rents to existing firms which would in effect be sustainable since, unlike auctioned permits or

taxes, the freely allocated permits give rise to entry barriers. For this reason, auctioning of permits is typically preferred to grandfathering on economic ground.

Concerning the issue of providing incentives for technological change, if compliance is costly and if there is some choice of how to comply (for example, what equipment or technique to use), then there will be an economic incentive for firms to seek cheaper ways of complying in the long run. In principle, the incentives for technical change provided by an emission tax are equivalent to those produced by a tradable permits system. In either case, reducing discharges produces a monetary gain to the firm. However, to the extent that the permits market is thin, the monetary gain may not materialize as easily under a permits system as under an emission tax. If firms do take such considerations into account, the incentive to switch to cleaner production techniques may be lower with a permits system. The literature also suggests that an auctioned tradable permits system is likely to have much stronger incentive effects than a system of grandfathered permits. This result is likely to arise for two reasons: (1) under an auctioned allocation, the innovating firm will get the benefit of lower permits prices if other firms adopt the innovation, while under a grandfathered scheme the decrease in price will benefit buyers, but hurt sellers (Harrison, 1999); and (2) a system of grandfathering may prevent the entry of new firms on the market, and new firms are often important instigators of new production processes.

Revenue-raising potential

In terms of revenue-raising potential, the critical distinction is not much between an emission tax and a system of tradable permits per se but rather between systems where permits are freely allocated and systems where permits are auctioned. Both an emission tax and a system of auctioned permits generate government revenues. Yet, when evaluating these instruments as potential sources of government revenue, an apparent trade-off is highlighted between the primary function of these instruments (for example, reducing pollution) and their revenue-raising function, an issue which will be taken up again below in the context of green tax reforms. Some authors (Endres, 1997) have argued that environmental instruments cannot serve as the main pillars of public income since their primary purpose is to cut back the environmentally detrimental activity to which these activities apply. Hence, the tax is intended to erode its own base.

Oates (1992) argues that to implement an optimal tax, it is necessary to have a regulator whose interests transcend competing environmental and revenue pressures and who is in a position to weigh environmental concerns against revenue needs. This is a demanding institutional requirement, which is unlikely to be met in practice. Typically these instruments are introduced in either of two forms: by an agency concerned with environmental management, or by those whose primary responsibility is budgetary management and who are seeking additional sources of revenues. OECD (1996) argues that environmental taxes have typically been used as revenue-raising devices while tradable permits have been used primarily as instruments to reduce pollution.[9]

Emission taxes and tradable permits have mostly been examined in the literature as instruments for environmental management. Little has been said about the precise disposition of the revenues that these instruments may raise. There is one proposition that comes out of the standard environmental theory: the revenues should **not** be used to compensate the victims of pollution or for earmarking (Baumol and Oates, 1988), as compensations may encourage a higher-than-optimal level of pollution.

In more recent years, the literature on environmental taxes has started to focus on the interaction between environmental taxes and the rest of the tax system. In this context, a critical question was raised, namely, is the welfare gain and hence the case for introducing environmental taxes greater or less than that implied by a partial equilibrium setting? It has been suggested that the welfare gains from an environmental tax are larger under a general equilibrium setting as the tax may simultaneously correct for the environmental externality and provide other gains, when the revenues are raised to cut other distortionary taxes (Sandmo, 1975; Parry, 1995). However, more recent studies (Bovenberg and De Mooij, 1994; Goulder, 1995) have questioned the existence of this "double dividend." The double-dividend discussion has essentially centered on environmental taxes but could equally apply to a system of tradable permits to the extent that the permits are auctioned (and hence constitute a source of public revenues). The issue of

[9] In most permit systems implemented to this date, permits were distributed free of charge and hence did not generate revenue for the government (this will be discussed in greater detail in the next section).

Table 2. Summary of the Basic Criteria for the Choice of Policy Instruments

Criteria	*Argument for Choosing an Emission Tax versus a System of Tradable Permits*
Information intensity	Emission taxes and tradable permits are equally preferred under a first-best scenario (they both require knowledge of marginal damages and marginal abatement costs to achieve the optimal level of emissions). When there is uncertainty about MDs, neither instrument is efficient. But efficiency losses are the same whether using an emission tax or a permits system hence both instruments are equally preferred. When there is uncertainty about MACs, efficiency losses are minimized with an emission tax if the MD curve is relatively flatter than the MAC curve. On the contrary when the MD curve is relatively steeper than the MAC curve, then a permits system is preferable as it leads to lower efficiency losses. Under a second-best scenario, when the regulator attempts to achieve a predetermined level of emissions (however defined), permits are preferred because they give direct control over the level of emissions.
Efficiency under noncompetitive market structure	When the output market is noncompetitive, neither instrument is efficient. The efficiency losses are smaller under a permits system when firms are assumed to be heterogeneous (with different abatement technologies).
Ease of monitoring/ enforcement	The emission tax is preferred as it only requires the monitoring of emissions while a permits system also requires the monitoring of trades (for example, permits trading).
Flexibility in the face of change	A system of permits is preferred since once established, such system maintains the desired level of emissions without intervention from the regulator. With an emission tax, the tax needs to be adjusted in the face of change to ensure that the ambient quality is maintained at the desired level.
Dynamic incentives	Both an emission tax search for new cleaner technologies, provided that the permitsand a permits system are equivalent in terms of their ability to encourage the market functions properly. If the permits market is thin, the incentive to switch to cleaner production techniques may be lowered and hence the tax may be preferred. As for the impact on industry size, if the permits are auctioned, both instruments are equivalent. However, under a grandfathering system, the permits may be used as effective barriers to entry on the permits market (they would create a bias against new firms trying to enter the market).
Revenue-raising potentials	If the permits are auctioned, both the permits system and the emission tax are equivalent in terms of revenue-raising potentials.
Distribution issues	If the permits are auctioned, both the permits system and the emission tax are equivalent and can achieve the same distributional outcome. If the permits are given out freely, they represent a windfall gain for receiving firms and may create a bias against new firms entering the market. In that respect emission taxes would be preferred.
Competitiveness issues	Tradable permits are typically preferred as they make the cost of environmental protection less visible.

double dividend will be revisited in the next section when discussing green tax reforms.

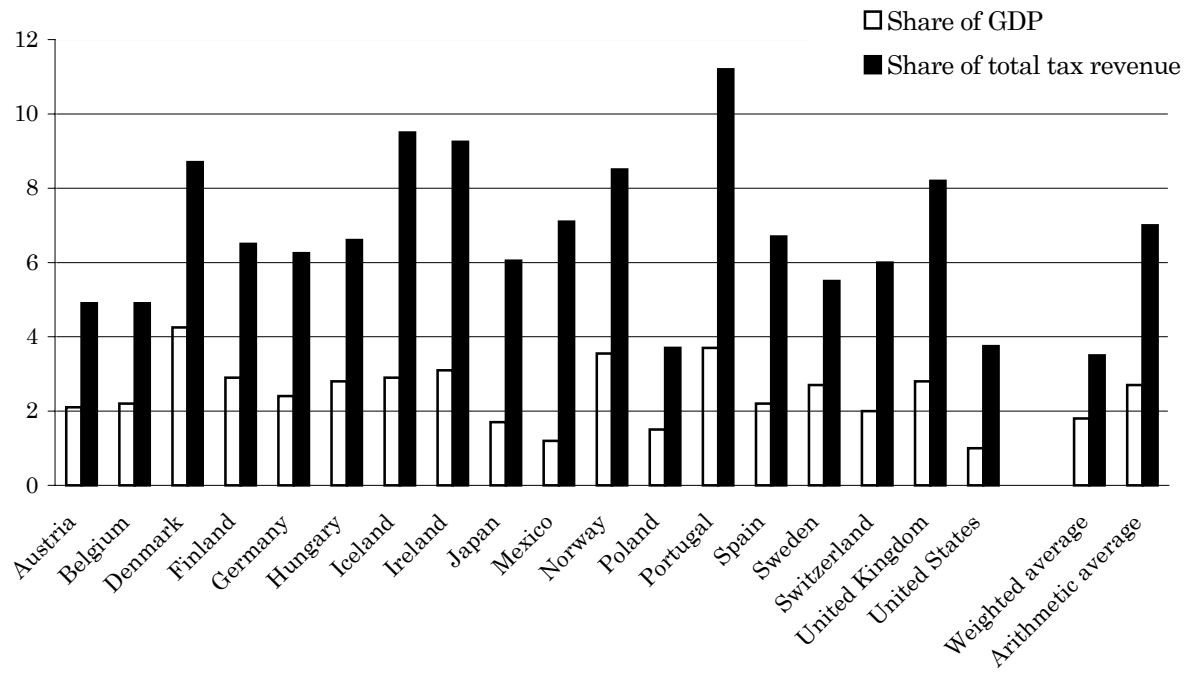
Political considerations

Political considerations cover aspects such as distributional, ethical, and broader economic stabilization concerns, which may affect society's choice of policy instruments. We will limit our discussion to three issues that appear to be particularly important: distributional issues, competitiveness, and political acceptability.

Distribution

It is in principle possible to achieve the same distributional outcomes with an emission tax and a system of tradable permits. The emission tax embodies the polluter-pays principle, which involves the assumption that the recipients have the legal right to be free of emissions; thus polluters have to pay for the right to pollute. Government auction of marketable permits can achieve the same distributional results but clearly the equivalence would not hold when permits are allocated freely, because the permits in

Figure 4. Revenues from Environmentally Related Taxes as Per cent of Total Tax



Source: OECD (1999c).

this case would represent a windfall gain for the (owners of the) receiving firms.

Distributional issues in the context of environmental taxes are centered on the potential regressivity of such type of taxes. The debate is more relevant in the case of product taxes (as opposed to emission taxes) since insofar as environmental taxes apply to mass consumption products, such as motor-driven vehicles and energy for instance, they may have a substantial effect on low-income households. OECD (1999c) argues that a distinction needs to be drawn between relatively low environmental taxes on products such as detergents, fertilizers, batteries, and pesticides, and large-scale and fiscally heavier taxes such as those on energy. In the first case, there seems to be no observable distributional impact, while in the second case, some studies indicate a risk of regressivity.

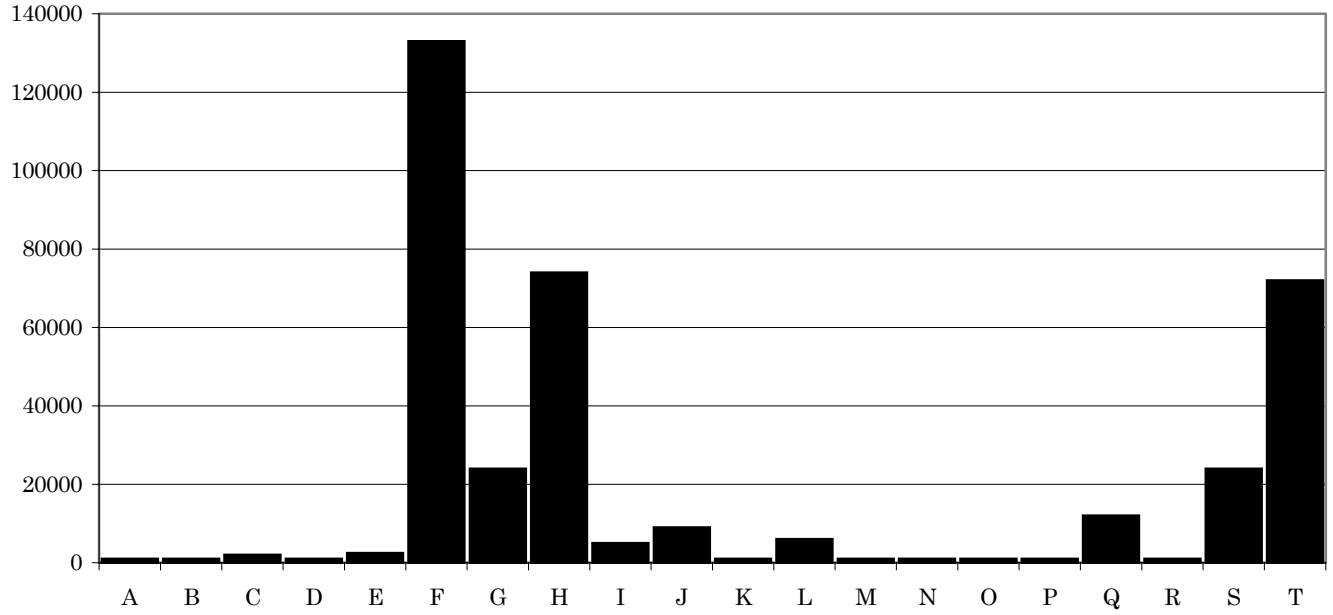
In the tradable permits literature, distributional issues seem to have received less attention. Nonetheless, such issues are relevant, especially in cases where permits are distributed freely, the key issue being the initial allocation of permits.

Competitiveness

Even if environmental policy considerably increases aggregate welfare, some economic sectors or regions may be adversely affected. In this respect, the impact of an emission tax and a system of tradable permits are likely to be equivalent provided that the permits are auctioned. If, on the contrary, the permits are freely allocated to firms, the equivalence breaks down (in such instances, the burden imposed on the firms is reduced and shifted to government in the form of reduced revenues).

For the firms directly affected by such systems (auctioned permits or emission tax), the issue of revenue recycling is key. In theory, it is possible that the existence of revenue recycling could entirely compensate firms for their cost, and thus there might be no reason to expect any competitiveness effect. Such schemes would clearly reduce the fear of any adverse competitiveness effect without granting existing firms the rent as under a grandfathered permits scheme. In practice, however, such revenue-recycling schemes are not used (most probably by fear that they would lead to a higher-than-optimal level of pollution in the long run). Hence in order to protect firm competitiveness, a grandfathered permits scheme would appear to be preferred (explicit effort can be taken to make sure that the rent is captured through

Figure 5. Revenues from environmentally related taxes in 1995 ($ millions)



Source: OECD (1999c).

Notes: A = Measured or estimated emissions to air; B = Ozone depleting substances; C = Measured or estimated effluents to water; D = Certain non-point sources of water pollution; E = Waste management; F = Unleaded petrol; G = Leaded petrol; H = Diesel; I = Other transport energy; J = Light fuel oil; K = Heavy fuel oil ; L = Natural gas; M = Coal; N = Coke; O = Biofuels; P = Other fuels, stationary use; Q = Electricity consumption; R = Electricity production; S = Motor vehicles, one-off import or sales taxes; T = Registration or use of motor vehicles, recurrent.

proper taxes, profit tax, and the like).

The issue of competitiveness is also critical at the international level, focusing on the competitiveness of nations as opposed to firms. The key issue in this context relates to differences in environmental policies across countries that may affect competitiveness and trade patterns. The problems are particularly obvious when considering environmental taxes but the issue is also relevant (although somewhat different) with a system of tradable permits. Even under an international system of tradable permits, where several countries are regulated by the same central system, issues of competitiveness may arise. The critical issue is the initial allocation of permits, since whoever obtains the initial permits, especially if the permits are given out freely, will have a competitive advantage over whoever did not. The basic issues of the wealth effects of the international allocation of permits, and the absence of international institutions needed for cross-country enforcement are very complex and very different from those related to domestic use of tradable permits. The focus of this paper is on domestic tradable permits regimes. Overall, however, issues of international competitiveness have mainly centered around environmental taxes presumably because they make the costs of environmental protection more visible.[10] This naturally leads us to the issue of political acceptability.

Political acceptability

From the firm's perspective, freely allocated permits are clearly preferred over an emission tax and/or auctioned permits because they convey rents to firms. Stavins (1998) also argues that tradable permits are preferred by environmental advocates who have a strong incentive to avoid policy instruments that make the cost of environmental protection highly

[10] As will be discussed in the next section, one of the main obstacles to implementing new environmental taxes is the possible loss of international competitiveness, as illustrated by the EU example.

Table 3. CO_2 Taxes in Selected Countries (Norwegian kroner per ton CO_2)

Country	*NOK per ton CO_2*
Norway (1997)	
Gasoline	376
Natural gas	373
Oil	328
Light mineral oil	164
Heavy mineral oil	140
Coal	179
Coal	136
Sweden (1996)	
Gasoline	354
Auto diesel	380
Natural gas	321
LPG	352
Light mineral oil	380
Heavy mineral oil	326
Coal	362
Denmark (1996)	
CO_2 households	111
CO_2 industry	56
Finland (1996)	
CO_2	53
The Netherlands (1994)	
CO_2	20

Source: Moe (1999), table 8.1.

visible to consumers and voters; and taxes make those costs more explicit than permits. Freely allocated permits are easier for legislators to supply than taxes or auctioned permits, again because the costs imposed on industry are less visible and less burdensome, since no money is exchanged at the time of the initial permits allocation. Joskow and Schmalensee (1998) argue that freely allocated permits offer a much greater degree of political control over the distributional effects of regulation, facilitating the formation of majority coalition. An auction, on the other hand, allows no such political maneuvering.

Obviously, the political considerations associated with the use of an emission tax and/or a system of tradable permits will also depend on how the revenues raised are spent. Overall, however, the critical distinction to evaluate the political impact of alternative instruments is not so much between an emission tax and a system of tradable permits per se, but rather between systems where permits are freely allocated and systems where permits are auctioned. In many respects, the political considerations associated with a system of auctioned permits are very similar to that associated with an emission tax.

As Table 2 illustrates, from a theoretical perspective, no obvious result seems to emerge concerning which instrument (emission taxes or permits) is preferable to the other. This result stands in sharp contrast to the use that countries are actually making of the two instruments, as laid out in more detail in the following section.

ENVIRONMENTAL TAXES VERSUS TRADABLE PERMITS AS POLICY OPTIONS IN OECD COUNTRIES

This section addresses the issue of how—and to what extent—countries actually have made use of the two instruments of environmental control discussed above, and the practical administrative and technical problems encountered in this process. The review is meant to be illustrative rather than exhaustive, since keeping track of environmental policies in all countries would truly be an immense task.

Broad Experience with Environmental Taxes

Toward a definition of environmental taxes

The theoretical literature on the choice of optimal instruments for environmental policy focuses for the most part on a pure emission tax. On the other hand, the practical reviews of country experiences seem to be using a much broader definition to capture the concept of an "environmental tax." Indeed, little consensus seems to exist in these reviews on the basic question of what constitutes an environmental tax, and different sources apply various definitions. In their overview of environmental taxes, McMorran and Nellor (1994) make a distinction between pure Pigouvian taxes, that is, taxes based truly on the units of emissions with specific rates set so that the net marginal benefits of reducing emissions by another unit would be zero; indirect environment taxes, that is, taxes on inputs or consumer goods whose use is related to environmental damage (for example, excises on gasoline); and environment-related provisions in other taxes, including personal income taxes, corporate income taxes, general sales taxes, and fuels and motor vehicle taxes such as, for example, Germany's accelerated depreciation provisions for energy-saving and pollution-reducing equipment, and the lower VAT rates applied in a number of countries to pollution-reducing devices (for example, recycled paper, solar energy equipment, etc.).

Box 2 reviews some other current definitions of an environmental tax. Obviously, the lack of a generally accepted definition has complicated the establishment of a consistent statistical classification of such taxes.[11] Depending on the nature and scope of the definition chosen, the concept of environmental or ecotaxes may encompass only pure emission taxes, or these as well as product taxes, which may be only indirectly related to actual emissions. In practice, and using the wider definition preferred by the OECD, most environmental taxes are not true emission taxes,[12] but take the form of product taxes.

[11] To address this problem, the OECD in cooperation with other institutions is working on a statistical framework, which in time will provide a clearer picture of the level and structure of environmental taxation in developed countries. In the same context, the OECD has also established a comprehensive database with information on environmentally related taxes in its member countries (OECD, 1999a).

[12] In practice, the concept of a true Pigouvian tax set optimally such that it equals the marginal damages of emissions is rarely applicable, given that regulators are unlikely to have the information needed to set such a tax.

For the purposes of this paper, the approach adopted focuses to the extent possible on pure emission taxes, that is, the discussion generally excludes product taxes on energy (although some revenue data are provided on the wider concept applied by the OECD).

The nature and revenue importance of environmentally related taxes in the OECD

Following the OECD (1999a) broad definition of the concept (that is, including all environmentally related product taxes, and in particular taxes on petroleum products), figure 4 shows, for the 19 countries covered by the OECD databank, that the (weighted) average of the ratios of ecotaxes to GDP is just below 2 per cent, with the highest ratio in Denmark (well above 4 per cent) and a ratio close to 4 per cent in the Netherlands, Norway, and Portugal. The lowest ratios (around 1 per cent) are found in Mexico and the United States. A similar wide dispersion among the countries in this sample is found with respect to the weight of ecotaxes in total taxes, around an average of about 5.5 per cent.

Figure 5 shows estimates of the corresponding revenue raised from the individual tax bases for the group of countries as a whole. Evidently, by far the largest individual revenue raiser is unleaded petrol with almost 40 per cent of the revenue raised (in 1995), followed by more than 20 per cent raised from taxes on the use of motor vehicles. It is interesting to note that the taxes on petrol and diesel together with the taxes on the sale or use of motor vehicles generated more than 91 per cent of all the environmentally related tax revenue covered by the OECD study. In other words, in relative terms, the revenue raised from pure emission taxes is very modest. However, while this holds for the OECD countries as a group, in individual countries, and in particular in the "ecotax leaders" dealt with below, emission taxes may be of quite some revenue importance. Despite these broad developments, there has been no strong general move toward comprehensive green tax reforms, except in a limited number of countries.

Overall, a distinction can be made between two groups of (developed) reform countries: the first encompasses countries which have opted for a radical restructuring of the overall tax system, with increased reliance on environmental taxes, and includes Denmark, Norway, Sweden, and the Netherlands. The other group of countries is characterized by important but more incremental policies in this area, and encompasses Austria, Finland, Germany, Belgium, France, and Switzerland. The distinction,

Table 4. Summary of Main Tradable Permits Applications in OECD Countries

Country	*Program*	*Period*	*Type of Program*	*Initial Allocation*	*Banking*
Air protection					
United States	EPA Emission Trading Program	1975-	Credit-Based	n.a.	Yes
United States	EPA Lead-in Gasoline Program	1982-87	Cap-and-Trade	Grandfathered	Yes
United States	Post-Montreal CFC Trading System	1988-	Cap-and-Trade	Grandfathered	No
United States	SO_2 Allowance Program	1990-	Cap-and-Trade	Grandfathered (auctioned)	Yes
United States	RECLAIM	1992-	Cap-and-Trade	Grandfathered	No
United States	OTC Nox Budget	1994-2003	Cap-and-Trade	Grandfathered	Yes
Germany	VOC Control	1993-	Credit-Based	n.a.	Yes
Water protection					
U.S./Wisconsin	Fox River	1981-	Credit-Based	n.a.	No
U.S./Colorado	Dillon Reservoir	1984-	Cap-and-Trade	Grandfathered	No
Australia	Murray-Darling Basin Program	1988-	Cap-and-Trade	Grandfathered	Yes
Fisheries					
Australia	Individual Transferable Quota (ITQ)		Cap-and-Trade	Grandfathered	No
Canada	ITQ		Cap-and-Trade	Grandfathered	No
Iceland	ITQ		Cap-and-Trade	Grandfathered	Yes
Netherlands	ITQ		Cap-and-Trade	Grandfathered	No
New Zealand	ITQ		Cap-and-Trade	Grandfathered	No
United States	ITQ		Cap-and-Trade	Grandfathered	No

Source: OECD (1999d).

though, is to some extent subjective. The focus of this section is on the former group referred to as the "ecotax leaders." This focus was adopted mainly for two reasons: first, comprehensive overviews of the use of environmental taxes and tax provisions have been attempted elsewhere (see, in particular, OECD, 1995, 1997b, 1999b, and McMorran and Nellor, 1994); and, second, the experiences of the "leaders" may well provide some useful lessons for other countries with respect to which taxes realistically can be applied; the administrative and other complications they may meet in trying to do so; and the revenue yields that can realistically be expected.

Trends in and objectives of the reforms of the "ecotax leaders"

Generally, reforms of environmental taxes may be based on three different approaches or combinations thereof (OECD, 1997b): (1) a removal or modification of existing distortionary subsidies and tax provisions; (2) a restructuring of existing taxes to take account of environmental considerations; or (3) the introduction of new ecotaxes. Characteristically, in the countries having implemented comprehensive "green tax" reforms, all three approaches have been attempted. Also a key characteristic is the fact that environmental tax reform in these countries have been implemented as part of fundamental tax reforms with a much wider scope than just that of improving the environment.

Annex I provides summaries of the main environmental tax provisions introduced in Denmark, Norway, Sweden, and the Netherlands. The recent experiences of green tax reforms in these countries illustrate the variations both in the approach and scope of the reforms, as well as in the implementation strategies chosen across countries. But, perhaps more importantly, they also show some important general issues and problems which have confronted the early reformers. These experiences may be useful for other countries in their preparations for green tax reform. In our view the following six issues, some of which have been touched upon in the conceptual discussion above, figure prominently in this context.

First, the reforms have not taken place in a vacuum but have been adopted against a common back-

ground of international agreements to reduce emissions of greenhouse gases. This background follows in turn from the increasing scientific consensus that global warming *is* underway and is linked in part to the emissions of greenhouse gases. In some countries such as Norway, the goal of taking the lead internationally has, indeed, played an important role in the domestic reform debate. The OECD and European Union constitute important focal points for discussions and exchange of information on these issues among developed countries, and have taken innovative initiatives in this respect.[13]

The most prominent international agreement is the Kyoto Protocol, agreed in 1997 but yet to enter into force,[14] which calls for a reduction of greenhouse gas emissions of some 7 per cent on average for OECD countries in 2008–2012 relative to their base level (generally 1990).[15] Because of significant increases in emissions since 1990, the "effective" reductions implied by the Protocol are typically significantly larger than the 7 per cent mentioned above for OECD countries as a whole (under a "business as usual" scenario, required reductions are about 30 per cent). The European Union has adopted a separate burden-sharing agreement to achieve the targets under the Protocol for its 15 membership countries. While few of the specific domestic policies necessary to achieve the targets are in place today, much research has gone into estimating the costs of implementing the Kyoto targets. Simulations seem to suggest that if the targets are met using only cost-effective domestic measures (that is, disregarding mechanisms such as international emission trading), real income in the OECD overall would be reduced by about 0.5 per cent—seemingly a modest reduction, but hiding much larger impacts on some sectors. Moreover, the estimates are based on some strong assumptions, and may well underestimate the true costs (OECD, 1999b).[16] International trading of emission allowances could substantially lower the costs and would generally allow OECD countries to meet the targets with higher levels of GDP, but as with other parts of the implementation, little progress has been made with regard to the practicalities of international emission trading.

Second is the fact that the introduction of CO_2 taxes have been the common key element of all the reforms discussed here. Hence, all the countries have found that the most efficient way to achieve environmental objectives is through emission taxes targeting CO_2 emissions, which are by far the dominant green house gas. However, since technical complexities prevent fully accurate measurements of actual emissions, the tax bases are measured as the estimated average carbon content of the products in question; hence, in practice, these taxes fall somewhere in-between product taxes and pure emission taxes (Box 2). Also, as illustrated in Table 3, the rates of the tax chosen vary markedly across countries (for convenience, the rates are shown in Norwegian Kroner). Norway and Sweden have introduced by far the highest tax rates, although it should be noted that statutory rates may be somewhat misleading indicators of the "effective" rates owing to differences in the scope of exemptions granted across countries.[17]

Third, the green tax reforms dealt with here have generally not intended, as their main motivation, to raise significant amounts of revenue; indeed, in most cases, dual objectives have been pursued by applying measures aimed at improving environmental conditions, mainly through increased taxation, and at the same time to utilize the resources raised to alleviate the distortions created by other taxes, first of all taxes on labor. In Denmark, this was done through reductions in the marginal tax rates on labor income and reduced social security contributions; in Sweden, a major general reduction in income taxation was implemented; and in the United Kingdom, the Climate

[13] In September 1999, for example, the Environment Committee of the European Parliament passed a draft resolution on climate change containing a harmonized ecotax plan in which the 15 EU countries can opt in or out.

[14] The Protocol will not enter into force until ratified by countries accounting for at least 55 per cent of so-called Annex 1 emissions, and by at least 55 countries. Eight countries have ratified so far, but none of the Annex 1 countries. The institutions and procedures for monitoring and reporting of noncompliance are yet to be established.

[15] Developing countries are not subjected to binding targets under the Protocol, and only a few of these countries have voluntarily adopted emission targets similar to those of the developed countries.

[16] The costs are also estimated to increase over time, and will reach 1.5 per cent of GDP in 2050 if emissions are to be maintained at the level embodied in the Protocol.

[17] "Effective" rates of taxation could be measured as the ratio between actual green tax yield collected and the potential tax base (that is, including what is currently exempt). Data deficiencies have prevented the calculation of effective rates.

Change Levy announced by the chancellor in March 1999 is intended to be balanced by a reduction in National Insurance contributions. While employment considerations have played an important role in the reform initiatives, it should be recalled that the employment impact generally is expected to be fairly modest (see Annex I for country examples); but also that the primary raison d'être of any green tax reform is relative price corrections and not its revenue-raising capabilities. More generally, many of the reforms reflect the strive toward less distortive tax systems that at least could alleviate some tax-induced distortions with an adverse impact on employment and at the same time would remove incentives to degrade the environment.

Fourth, and closely related to the issue of revenue neutrality, is the alleged adverse impact that the introduction of green taxes may have on international competitiveness. As noted in Annex I, this issue has so far barred progress on a harmonized green tax reform in the EU. Industry arguments about adverse effects on competitiveness have led countries to grant tax exemptions mainly to heavy emitters, even though these exemptions tend to seriously weaken the link between the tax paid and carbon emitted and, obviously, reduce the yield from the tax and hence the potential for reducing labor taxes. To mention just a few examples, these considerations have played a significant role in the discussions: in Germany, where the energy tax is capped; in Finland, where the electricity sector has been exempted from the carbon tax; in Denmark, where the yield from emission taxes are "recycled" to industry, and taxation in some cases has been replaced by voluntary agreements; and in Norway, where possible steps to scale back the carbon tax to counter a fall in investment in the oil sector, prior to new offers for oil exploration, are being contemplated. Hence, key policy interactions between environmental goals and considerations of competitiveness and regional development have played and still play a dominant role in the scope and practical design of environmental taxes at both the national and international level. The ongoing discussions in the United Kingdom on the introduction of the Climate Change Levy provides another clear example of the inherent political and economic controversies involved in basic green tax reforms.

Fifth, perhaps of less political significance than the competitiveness issue, is the perception that green taxes are predominantly regressive, as supported by a number of empirical analyses. However, at their present levels, ecotaxes do not seem to have any significant regressive impact, although some simulation models involving significant carbon taxes indicate modest regressivity (OECD, 1997b), Section II; see also Annex I, Section III on Sweden). It should be noted, though, that—ideally—the distributional consequences of ecotaxes should be measured net both in relation to the taxes that they replace in cases of revenue neutral reforms (mainly labor taxes which may be heavily regressive) but also with regard to the incidence of the environmental improvements that they generate, which may well be progressive.

Sixth and lastly, the sustainability of ecotax revenue has been noted as an important issue because of the trade-off between the environmental and the fiscal (revenue-raising) objectives of ecotaxes: there are merits to the view that ecotaxes should be analyzed using the same basic criteria typically applied to taxation in general: efficiency, equity, simplicity, and buoyancy. However, for a typical ecotax, there may well be trade-offs which are lacking for other type of taxes since, in a sense, pure Pigouvian ecotaxes are ultimately aimed at eradicating or certainly limiting their own bases, that is, there is a conflict between the economic efficiency and buoyancy objectives. Thus, while fiscal considerations would favor a broad and stable revenue basis, from an environmental point of view the aim of an ecotax is to diminish its own base. Perhaps the most successful example in this context is the impact of high excises on leaded petrol (as compared to those on unleaded petrol) in many OECD countries which may help to explain the total disappearance from the market of this product in some countries (Austria, Denmark, Finland, Norway, and Sweden). However, as this example illustrates, ecotaxes may change the composition of consumption (in this case petrol) through substitution from highly polluting to more cleaner products, but still with a substantial and fairly stable (price inelastic) tax base intact (in this case in the form of unleaded petrol).

More generally, the conflict between fiscal and environmental objectives should not be overstated. For instance, the base of many existing CO_2 taxes seems to be fairly stable or even growing in countries where such taxes have been introduced, and at their present levels, existing environmental taxes are not likely to trigger strong behavioral changes or demand shifts. Furthermore, there still seems to be ample opportunities for introducing or increasing taxes on harmful or polluting products, which have a fairly low demand elasticity. This may, however, change in the future with increased use of these taxes and, as indicated earlier, cases have, indeed, occurred where a tax has had a substantial impact on its own base, the Swedish sulfur tax being one good example.

Limited Experience with Tradable Permits

Tradable permits systems are implemented only in a few countries, and with limited scope. In Europe, very few applications exist. In Germany, the air pollution legislation allows the transfer of emission reduction obligations (offsets) but this possibility has been used in less than two per cent of the cases (OECD, 1997a). In the Netherlands, power plant bubbles are allowed under a n agreement signed between the 12 provinces and the Association of Electric Producers in 1990. In the United Kingdom, provisions for intrafirm bubbles for power plants were introduced in 1996. Australia and New Zealand have also introduced provisions for pollution trading as well as some developing countries such as Chile and Singapore.

While provisions have been introduced for pollution trading in several countries, OECD (1997a) argues that the systems have been applied on a very limited scale. One notable exception is the case of the United States where support for the use of this market approach has clearly grown, as reflected by the increasing number of applications both by the federal government and by state governments. Indeed, the United States was the first country to apply tradable permits widely in the context of its environmental protection programs, and even today, most applications of tradable permits can be found there. These applications have mainly related to the emission of air pollutants, but both water-based and land-based applications have also been used at times. Hence, while there have been applications in other OECD countries (for example, Germany, Australia, Netherlands, the United Kingdom), usage of the instrument has been much less in these countries than in the United States. Consequently, most of the efforts to date to evaluate the use of such systems have focused on the United States experience. Table 4 provides an overview of the main tradable permits systems currently in place in OECD countries. Specific country experiences are discussed at length in Annex II.

While the theoretical advantages and characteristics of tradable permits have been well established for many years in the literature, there are many decisions that must be made to turn theory into practice. We first present some of the issues that may arise in a practical setting but are typically not discussed in most studies. Harrison (1999) suggests organizing these decisions into three broad categories (that is, threshold, design, and implementation issues), corresponding roughly to the chronology in which they would be addressed.

Threshold issues include decisions regarding the basic purpose and nature of the system, most specifically with respect to: (1) the emission goal to be achieved—this includes the distinction of whether the system is set up when emission goals are set, or whether the system is set up as an adjunct to existing goal; (2) geographic area covered—this includes the decision of whether trade can be made within local air quality control regions, states, or group of states; and (3) the nature of the commodity to be traded—these issues include the important distinction between two types of programs: cap-and-trade versus credit-based systems. In the former, overall emissions are capped and parties trade an allowance (that is, the right to emit a unit of the given pollutant). In the latter, the commodity is an emission reduction credit (that is, a credit based upon the showing that the seller has reduced emissions below a baseline level).

Design issues cover issues such as: (1) the allocation of initial allowances (note that this issue is only relevant in a cap-and-trade program); (2) geographic or temporal flexibility or restrictions—this includes the possibility of restricting trade among different parts of the geographic range of the program, and the possibility of banking (that is, reducing emissions more than is required and "banking" the surplus for future internal use or sale); (3) specification of emission sources that are required or allowed to participate—this includes the possibility of allowing other sources to "opt in" to the program; and (4) possible establishment of institutions to facilitate trading.

Implementation issues cover issues such as (1) the certification of permits—whether emission restrictions must be certified before they can be traded; (2) the choice of methods for monitoring and reporting emissions; and (3) the means of determining compliance and enforcing.

Lessons learned from the United States experience

We suggest a number of important lessons that might be drawn from the United States experience.[18]

First, tradable permits remain somewhat controversial, even in the United States with its relatively long history with the instrument. Overall, and at least in the case of permits systems aimed at air pollution abatement objectives, political support for

[18] These lessons are drawn for the most part from the proceedings of an OECD workshop held in Paris in September 1998, on the theme: "Domestic Tradable Permit Systems for Environmental Protection: Issues and Challenges."

these systems seems highest when they are introduced as completely new initiatives, rather than add-ons to already existing program. There are several potential explanations for this (Stavins, 1998), the main one being the lack of constituencies for the status quo, namely new programs do not have the difficulties of modifying expectations that are set up for existing programs among various constituencies.

Second, tradable permits programs can be implemented at different geographic scales. Successful tradable permits systems have been established for sources throughout the United States (for example, SO_2 trading program, lead-in gasoline), as well as for sources in individual geographic areas (for example, California's RECLAIM). In both cases, however, trades take place in a single administrative region. No existing program so far has involved trades across different states or different air quality control regions within a state. The NO_x Budget Program represents the first attempt at such program and should provide important information on the additional issues involved in interstate programs. There appears to be a trade-off between the increased efficiency generated by expanding the size of the permits market, and the risk of creating environmental "hot spots"[19] as a result of increased trading. In some programs, this problem has been solved by constraining the size of the market, so that only nearby emitters can trade with each other. Another approach is to use two types of environmental regulations. For instance in the SO_2 program, there are no geographical constraints on the market (that is, trading can occur between any two participating firms); however, these firms are also subject to additional local environmental constraints.

Third, cap-and-trade programs are used more frequently than credit-based programs. Overall, the volume of trading in these programs tends to be larger than it is for emission reduction credit systems. This is at least partially because the commodity being traded is usually better defined, therefore reducing the obstacles to trading and increasing the likelihood of potential costs savings. Credit-based trading requires the computation of arbitrary and often controversial baselines in order to establish a reference point for future reductions, often ending up with permanent administrative oversight and/or cumbersome certification procedures. This uncertainty may also complicate the initial allocation of rights, which can involve controversial procedures and assessments.

Fourth, determining the initial allocation of permits is crucial. Despite a theoretical preference for an auction approach, grandfathering of the initial permits has been applied in virtually all applications that have been observed in practice. Only in the SO_2 allowance program is a portion of the permits offered at auction. This is done in an attempt to make up for market imperfections and/or to accommodate newcomers to the market. Usually grandfathering is done to achieve some perceived equity considerations. As long as the number of firms, which are granted permits free of charge is large, and as long as the systems eliminate rents from the newly created assets, grandfathering seems to be socially acceptable. However, there was at least one case where the boundaries of social acceptability were apparently surpassed. This involved ozone depleting substance quotas allocated in the United States under the Montreal Protocol. In this case, CFC producers and importers were expected to receive large windfall gains as a result of the introduction of the system. These windfall profit were then taxed away by the United States Congress.

Fifth, allowing intertemporal trading (banking) can provide important flexibility for sources to undertake early reductions in order to accumulate allowances that can be used to ease compliance in the future. Most tradable permits systems in the United States have used banking. This flexibility appears particularly important when reductions are phased in over time such as in the SO_2 allowance program and lead-in-gasoline program. By allowing early abatement efforts to be banked for later use, the environmental benefits can be increased, in the sense that large emission reductions are achieved when emissions are the highest (that is, when the marginal damages from emissions are the highest). There are also economic benefits associated with banking because it reduces the exposure of emitters to a large shift in permits prices.

Sixth, private institutions typically develop to facilitate trades and provide market information, although government institutions (for example, auctions) can be useful initially. Brokers are important elements of the trading program for both the SO_2 allowance program and RECLAIM. The brokers lower the overall transactions costs for trades, increasing the volume of trades and overall costs savings. In the SO_2 program, for instance, brokers and other private market transactions account for the bulk of allowance sales and purchases. In contrast, few transactions are

[19] Hot spots are very high concentrations of pollution in particular locations; tradable permits could contribute to the formation of such hot spots if they allowed more clustering of emissions in vulnerable areas.

accounted for by the auction mechanism set up to help newcomers. Such auctions can, however, be useful in the early stage of the program to provide information on prices.

Seventh, flexibility in monitoring requirements may increase participants beyond large sources. Emissions under a cap-and-trade programs must be monitored to ensure that the quantity of allowances purchased and sold is accurate. Continuous emission monitoring systems offer some degree of certainty in the emission monitoring process, and are therefore often mandated by tradable permits programs. However, this costly requirement often precludes the participation of small emitters (such as in the case of the SO_2 program for example).[20] Experience with the RECLAIM program on the other hand proves that it is possible to combine both large and small sources, with different regimes being applied to both groups. In that case, small firms were given an opportunity to participate in the program, with emissions being estimated (for example, by fuel meters and/or using emission technology factors). However, it should be noted that this approach has only been tried in the United States, where emitters tend to be covered by a complex and well-established system of supplementary environmental controls, in addition to the permits system itself. Similar programs replicated in other jurisdictions may face compliance and enforcement problems.

EXPLORING THE POTENTIAL OF ENVIRONMENTAL TAXES AND TRADABLE PERMITS: TENTATIVE CONCLUSIONS

This paper has presented the relative merits of green taxes vis-à-vis tradable permits as the two dominant economic instruments in pollution control. The scope for making greater use of economic instruments in environmental policy has been an increasing theme in recent policy discussion. Indeed in many countries, more particularly OECD countries, there has been an important shift in national policy towards the use of market mechanisms such as environmental taxes and tradable permits. The key argument behind the use of these instruments is now widely recognized, namely that in comparison with conventional "command-and-control" regulation, they have the potential to reduce economic costs associated with a given level of environmental protection.

While the primary emphasis of the paper has been to compare environmental taxes and tradable permits as policy options for controlling pollution, two important points need to be stressed at this time. First, while the role of economic instruments has clearly increased over the last decade, this progress should not be exaggerated since most regulatory measures are still of the command and control variety, in other words economic instruments have not replaced command and control policies but rather seem to have been implemented in conjunction with existing regulations. Second, while we have discussed environmental taxes and tradable permits as two alternative instruments to control pollution, we should stress, that our discussion does not rule out the possibility of using the two instruments simultaneously (although, in this context, some specific compatibility issues may arise that were not discussed in the paper, see Smith, 1999).

Going back to our primary objective, namely comparing environmental taxes and tradable permits, from a conceptual and theoretical point of view, the two instruments have many similarities and no obvious result seems to emerge concerning which instrument is preferable to the other. From a practical point of view, however, there is no doubt that the majority of countries engaging in the use of economic instruments for environmental policy purposes have relied much more on taxes than on tradable permits. The reason is presumably that taxes constitute a more familiar tool than permits—a tool that, furthermore, can be implemented through an existing administrative apparatus. Tradable permits, in contrast, are new policy instruments, which have a lot of promise, but with which governments and their administrations are less familiar.

Given the positive results achieved so far in various programs in the United States, tradable permits systems seem likely to continue to be applied in the United States (and perhaps even at an increasing rate). However, the political climate for tradable permits in Europe is not as certain and several European governments are currently contemplating or engaging in long-term programs involving mainly environmental taxes. For those countries, we suggest three important lessons, based on the experience of the ecotax leaders:

First, green tax reforms should not be expected to yield significant revenue. Consequently, realistic expectations must be adopted concerning the existence of a double dividend, including the potential for a significant positive impact on employment. True eco-

[20] In some instances, the combined emissions from small emitters may turn out to be more significant than those of the larger emitters.

taxes are more likely to be successful as environmental instruments rather than fiscal instruments.

Second, CO_2 taxes have been at the core of all the reforms discussed. Hence, all countries concerned have found that the most efficient way to achieve environmental objectives is through emission taxes targeting CO_2 emissions, which are by far the dominant green house gas.

Third, there is an important trade-off between environmental objectives and the potential loss of international competitiveness relative to other countries that impose lower or no such measures. Considerable opposition should be expected as a result of the imposition of MBIs, particularly from the industries most affected by the introduction of such systems. This calls for careful design of the "recycling" mechanisms to be adopted for revenues, along with careful consideration of phasing-in provisions and extensive consultation and information campaigns prior to the introduction of any such reform.

As for tradable permits, both actual experiences (in the United States mainly) and willingness to experiment with it seem to be expanding. Experiences gained at the national level may, furthermore, help to ensure wider implementation at the international level—an important consideration in view of the fact that trading forms a key part of the Kyoto Protocol. The implementation of an international tradable permits system would probably be facilitated if domestic systems have already familiarized local stakeholders with the permits approach (by the early identification of marginal abatement costs, and also by facilitating the eventual establishment of monitoring and control systems at the international level). In short, considerable potential exists for a wider use of the tradable permits approach, both nationally and internationally. The key challenge now is to realize that potential. ■

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ANNEX I

COUNTRY EXPERIENCES WITH ENVIRONMENTAL TAXES: ECOTAX LEADERS

Environmental Tax Reform in Denmark

Environmental concerns became the focal point of the tax policy discussions in Denmark around 1990 when Denmark passed an *energy action plan* with the objective of reducing the level of emissions of CO_2 by 20 per cent in 2005 compared to the level in 1988 (Helbo Hansen, 1999). Furthermore, Denmark acceded to the EU agreement for emissions in the year 2000 not to exceed their level in 1990.

The action plan was followed up by three important tax reform initiatives:

- In 1992–93, a CO_2 tax was introduced at a level of about $17 per ton of CO_2, initially only on households, but later extended to industry, followed by a reduction in the taxes on oil and gas. For households, the CO_2 tax rate was about 20 per cent of the consumer price net of taxes, in addition to the standard energy tax rate of 105 per cent of consumer prices net of taxes. For reasons of competitiveness, industry paid only a rate of 10 per cent, with reduced rates applied to energy-intensive industries (a degressive rate schedule was introduced with reference to the value added of industrial companies). Because the degressive rate schedule gave only limited incentive effects compared to the average tax burden on a company, the tax provisions were supplemented by a system of voluntary agreements through which eligible enterprises would be refunded all the tax if they carried out energy-saving programs, controlled though an independent audit. The extra revenue raised from this tax (0.2 per cent of GDP) was in part used to increase energy saving expenditures, and in part to reductions on the tax on beer and wine (by some observers characterized as an interesting variation of the double dividend).
- A major green tax reform was to be phased in during 1994–98, the main objective being a substitution of taxation on labor corresponding to about 2.2 per cent of GDP (with marginal tax rates on labor to be reduced by 10 per cent) by increased ecotaxes and charges on energy, waste, water, and sewage (1.2 per cent of GDP), as well as by higher capital income taxes (1 per cent of GDP). The overall reform was intended to be revenue neutral through "recycling" of the revenue gain back to industry, through lower social security contributions of employers and investment incentives to induce industrial energy-saving measures. The higher energy taxes initially only applied to consumers, but work was initiated to prepare higher energy taxes on industry as well.
- This led to the introduction in 1996 of a tax on SO_2 emissions of about $1.7 per kg, as well as a further increase in the CO_2 tax on businesses. Particularly the SO_2 tax had a radical impact on consumption, since industry with relative ease could move consumption toward low-sulfur fuels. During the whole of this process there was an extensive activity in industry to introduce meters, and to negotiate individual agreements on pollution-reducing measures and plans. Considerations are under way to further increase green taxes and to broaden the scope of their use. Energy tax rates were further increased and new ecotaxes introduced during the fall of 1998, including in particular a new tax on nitrogen consumption outside agriculture, which was combined with comprehensive regulatory measures to restrict nitrogen use in agriculture. Interestingly, despite the arguments that regulation involves higher costs than economic instruments such as taxes, Danish farmers strongly opposed the tax route and argued in favor of regulation to reduce nitrogen emissions to the environment.

The overall macroeconomic impact and the impact on overall employment is expected to be modest, although the impact for individual sectors and industries may be quite significant.

Environmental Tax Reform in Norway

Since the late 1980s, a strong focus on sustainable development has become a cornerstone of policymaking in Norway (Moe, 1999). In this respect, Norway was clearly among the frontrunners with regard to devising ways to encompass environmental concerns in general economic policies, with the aim of achieving a high level of employment and growth without harming the environment. Today, Norway probably has the most extensive framework for environmental policy of all countries in the world. As just one element of this framework, an annual document annexed to the budget examines the environmental profile of the state budget, identifying all expenditure items that are wholly or partly motivated by environmental policy objectives.

While environmental legislation in general has a fairly long history in Norway, environmental tax policy moved to the mainstream of policymaking only in the late 1980s. Based on the recommendations of an early environmental tax commission established in 1990, a number of environmental taxes and charges were put in place in subsequent years *inter alia* with the aim of stabilizing CO_2 emissions in the year 2000 at 1989 levels. It was calculated that achieving this ambitious goal would inevitably have negative consequences for employment. The key policy instrument was the CO_2 tax introduced in 1991 with different rates for different fossil fuels. A number of tax exemptions, mainly for export-oriented manufacturing industries, mean that only about 60 per cent of total CO_2 emissions are subject to the tax, and only about 20 per cent of emissions from manufacturing. The exempt manufacturing sectors—similar to the situation in the other countries with a CO_2 tax—are heavily exposed to international competition.

A broad-based second environmental tax commission established in 1994 submitted its report to the government in 1996. A key objective of the commission was to design policies to ensure that the economy can deliver both high employment and a better environment, and the approach adopted was to seek ways to integrate environmental policies and objectives in mainstream macroeconomic policies. Core to the work of the commission were the questions of whether taxes on labor could be relieved and replaced with incentive-based green taxes, and the possible implementation strategies for such a reform in a small open economy. A key issue in this regard was also the cost effectiveness in reducing *national* CO_2 emissions in accordance with the binding commitments reached in Kyoto in December 1997. In this respect, Norway was one of the only five countries that implemented a carbon tax to curb CO_2 emissions, which in 1996 accounted for 70 per cent of total greenhouse gas emissions in Norway.

Based on fairly extensive empirical research and a large number of simulations, the commission concluded that taxes on labor and on investment are the most distortive at the margin, and that environmental taxes, set correctly, can improve the efficiency of the economy. Substituting the one with the other would represent win-win policies. Despite these clear but theoretical advantages, the commission also pointed to a number of drawbacks of such a policy. For instance, labor taxes in the form of payroll taxes and social security contributions constitute an important and stable revenue source; and structural changes of a nature and range required would lead to opposition from the groups and sectors adversely affected.

The model simulations carried out by the commission, which illustrates the effect of raising green taxes by 1 per cent of GDP with a broadly offsetting reduction in payroll taxes, showed a mar-

ginally positive effect on key macro variables (disposable income, inflation, employment, and unemployment), combined with significant environmental benefits. On the key question of whether green tax reform may produce a *double dividend*, the commission points to the theoretical a priori inconclusiveness, but also—through its empirical simulations—seems to underpin the view that a double dividend will, in fact, materialize over the long term, if reforms are correctly designed, although the effects in long term equilibrium may be modest. It should be stressed, though, that in the view of the commission, a double dividend is not a necessary condition for carrying out reforms, as long as the policies benefit the environment without hurting employment, or strengthen employment and the efficiency of the economy in general without affecting the environment negatively.

Empirical research suggests that the CO_2 taxes in Norway may have reduced emissions by about 3 to 4 per cent in 1991–93. However, the above-mentioned commissions pointed to the need to raise the effectiveness of the carbon tax structure: hence, the exemptions and the weak link between the rates of taxation and the carbon content of products imply that the incentives for reducing carbon emissions are weakest in industries where marginal abatement costs are lowest. The majority of the latter commission, therefore, advocated a rapid change to a carbon tax system without exemptions. A governmental proposal of April 1998, to extend the carbon tax to exempted sectors (with compensations) met fierce opposition in parliament, and was eventually watered down, with the new CO_2 taxes coming into effect as of January 1999. Parliament decided in this connection to set up a commission to prepare a national system of tradable emission quotas for mainland processing industries, linked to the Kyoto mechanisms, with a report ready by the end of 1999. According to a Ministry of Finance estimate, the introduction of international emission trading may significantly reduce the annual abatement costs of compliance with the Kyoto targets compared to national solutions, to as much as a third (from 0.6 to 0.2 per cent of GDP).

Environmental Tax Reform in Sweden

The comprehensive tax reform of 1991 signaled a major shift in the emphasis of environmental policies in Sweden, from the previous extensive use of subsidies to achieve environmental objectives, toward the use of taxes as the main economic instrument (Brannlund, 1999). The 1991 reform was in part based on the work of a Commission on Environmental Charges set up as early as in 1988. The overall reform was based on a significant reduction in income taxes, largely offset by a series of new ecotaxes, especially on carbon, sulfur, and nitrogen oxides by a restructuring of energy taxation and by a broadening of the VAT base. The net effect was a 6 per cent redistribution of GDP, including about 1 per cent related to ecotaxes. A key element in the green tax reform was the introduction as of January 1, 1991 of a CO_2 tax on oil, coal, and natural gas. Following a second round of reform in 1993, the manufacturing sector pays only 25 per cent of the tax for reasons of competitiveness. The initial intention (but later abolished) was to stabilize CO_2 emissions at the 1988 level. It was estimated that environmental and environmentally related taxes in Sweden in 1996 yielded about 3.2 per cent of GDP or 6 per cent of total tax revenues.

In the spring of 1995, a new commission, the Green Tax Commission, was established to analyze the scope for using taxation to improve environmental quality and at the same time—as a second dividend—achieve a more efficient resource allocation through a reduction in unemployment. The commission was given a very broad terms of reference, including the effect on the environment, employment, industrial competitiveness, and revenue yields. While no specific reform was suggested, the commission offered some principles to guide future policies including a more proactive effort in international fora to combat global and regional environmental problems, and increased efforts regarding research, including in the EU and Nordic contexts. Recommendations also included increased attention to the equity aspects of ecotaxes and the need in general to avoid earmarking. An important conclusion of the Commission's work is that increase in green taxes cannot be expected to yield revenues of a level, which could finance substantial reductions in labor taxes. Hence, any revenue gains should be allocated carefully and selectively.

The work of the commission also included useful analysis of key questions, mainly based on general equilibrium (GE) models, such as the existence of a double dividend: the final report points to the fact that recent literature (for example, Oates, 1995) questions the existence of a double dividend with reference to the fact that the green taxes by themselves are distortionary, and that these distortions may well outweigh the benefits of reducing other distortionary taxes such as taxes on labor. The GE-model simulations undertaken by the commission indicate that a tax reform comprising a 100 per cent increase of the CO_2 tax and a revenue-neutral reduction of labor taxes is likely to have a negative welfare effect on Swedish households, environmental effects excluded. In other words, there is no double dividend. Other interesting results of the analyses carried out by the commission includes simulations of the distributional consequences of the reform showing that CO_2 taxes are somewhat regressive.

The Swedish draft budget for 2000 calls for a number of green-tax increases which in part will fund employment measures, including through job skill training.

Environmental Tax Reform in the Netherlands

Introduction of green taxes in the Netherlands dates back to 1988 when a new fuel charge replaced a fragmented system of earmarked levies (Zom, 1999). The fuel charge was transformed in 1992 into a general fuel tax with the financing responsibilities for environmental expenditures at the same time being shifted to the general budget. This marked the start of a more comprehensive tax reform effort based on the introduction of green taxes.

By 1996, five distinct environmental taxes had been introduced (tax on the extraction of ground water, tax on waste disposal, fuel tax, tax on uranium, and the regulatory energy tax) with a total yield corresponding to about 1.8 per cent of total taxes in that year, subsequently reaching about 2.5 per cent in 1998.

While an important objective of the first four taxes was to raise revenue, in addition to their obvious environmental policy motives, the regulatory energy tax was somewhat different. The dual objective of this tax was, first, to provide financial incentives for energy conservation and the reduction of CO_2 emissions and, second, to enable an efficiency enhancing restructuring of the tax system from direct taxes, particularly on labor toward environmentally related taxes. A special feature of this tax is a volume ceiling on the use of taxable energy which contributes to focus the tax on small users of energy (households and small commercial establishments) which are often thought to be the most difficult group to reach through other policy instruments (such as permits); simultaneously, the tax avoids the adverse effects on international competitiveness that would follow from taxes on large industrial enterprises. The rate and base of the tax is in line with the 1992 proposal for a European Union directive for a CO_2/energy tax, with half of the tax base related to carbon content and the other half to energy content.

These initiatives on the indirect tax side (that is, consumption taxes) have been supplemented during the 1990s with important reform measures on the direct taxes (that is, income taxes), primarily through the introduction of tax incentives to promote environmentally friendly investments (free depreciation on environmental investment; tax relief for benefits from green investments;

and an energy investment tax credit).

In March 1995, a Green Tax Commission was established in the Netherlands with the purpose of evaluating the practical possibilities for using taxes to improve environmental quality and sustainable economic development. The Commission, which has applied a tax-by-tax approach to its assessment, adopted a list of fairly strict criteria for evaluating potential green tax measures, including: demonstrable environmental benefits; consistency with international law; simplicity of implementation; absence of adverse effects on the economy as a whole; and broad revenue neutrality. In addition, according to the commission, green taxes should not be applied to behavior that should not or cannot be changed to avoid the taxes. Some of the commission's proposals have already been implemented in practice. The commission's third and last report dealt with the potential for further greening the Dutch tax system in a long-term perspective, *inter alia*, by shifting further from direct to indirect taxes.

The Dutch approach to green tax reform is somewhat different in its careful emphasis on "greening" the existing tax system rather than, as the main approach used in most other countries, basing the green tax reforms mainly on the introduction of new types of taxes.

ANNEX II

COUNTRY EXPERIENCES WITH TRADABLE PERMITS SYSTEMS

The United States Experience

The United States emission-trading program

As an instrument of abatement policy, tradable permits were used for the first time in 1975 by the Environmental Protection Agency (EPA) through its Offset Program for air pollutants. Interestingly, the program arose from an attempt to implement strict emission regulations, which in many areas could not be met within the timetable or could be met only at substantial opportunity cost in terms of forgone economic growth. By 1975, it had become clear that a number of regions, designated as "nonattainment" regions by the Clean Air Act, would fail to attain the ambient air quality standards by the deadlines mandated in the Act. The Offset program was an attempt by EPA to improve air quality while fostering economic growth as well. The program worked as follows. New firms were allowed to enter nonattainment regions provided that they acquired sufficient emission-reduction credits (representing excess reduction) from other facilities in the region so that total regional emissions would be lower after entry than before. This was accomplished by requiring new sources to secure credits for 120 per cent of the emissions they would add, the extra 20 per cent being retired as an improvement in air quality.

The program evolved over a number of years and eventually led to the 1986 Emissions Trading Policy Statement, which covers several pollutants such as carbon monoxide, sulfur dioxide, particulates, volatile organic compounds (VOCs) and nitrogen oxides. The program is characterized by several elements. The geographic "netting" or "bubble" element allows trade of emission reductions among different sources within a firm, as long as the combined emissions under the bubble are within the allowable limit. The "offset" element allows firms to trade emission credits between existing and new sources as long as the new emissions are more than offset by a reduction from existing sources. Finally, the "banking" element allows firms to accumulate and store emission-reduction credits for future use or sale. Overall, the program is assessed as successful both in terms of environmental effectiveness and economic efficiency, despite certain weaknesses, which have limited participation and interfirm trading.

The lead-in-gasoline program

Following the path set by the offset program, the government began applying the tradable permits approach more widely. One prominent use involved facilitating the regulatory process for getting lead out of gasoline. Under this program set up in 1982, a fixed number of lead rights (authorizing the use of a fixed amount of lead over the transition period) were allocated to the various refiners. Refiners who did not need their full share of authorized rights (due to early compliance) could sell their rights to other refiners. Refiners had an incentive to eliminate the lead quickly because early reductions freed up rights for sale. Acquiring these credits made it possible for other refiners to comply with the deadline. Designed purely as a means of facilitating the transition to this new regime, the lead-banking program ended as scheduled on December 31, 1987. Two features of the program are noteworthy. First, it resulted in a much easier phaseout of lead than would have traditionally be possible because of the interrefinery flexibility that it offered (Tietenberg, 1998). Second, the program was designed to eliminate a pollutant not merely to place an upper limit on its annual use. In that respect, the program was rather unique.

Trading of permits for water pollution control

Tradable permits programs have also been used in the United States to control water pollution. The two most notable cases are: (1) the Wisconsin Fox River water permits for point pollution sources; and (2) the Colorado Dillon Reservoir water permits for nonpoint pollution sources. In 1981, the State of Wisconsin issued discharge permits to 14 paper mills and 4 waste water treatment plants discharging effluents into the Fox River. The permits were issued only for reduction in BOD discharges exceeding the levels required by treatment standards. Trading was allowed to give firms more flexibility in controlling and treating their effluents. Despite estimates of potential cost savings of up to $7 million per year, only one trade has taken place (Smith and Vos, 1997) under the program. The reason most frequently cited to explain this lack of trade is the oligopolistic structure of the pulp and paper industry and the regulated public utility status of the wastewater treatment plant which limited competition (Panayotou, 1998).

Under the permits trading program between point and nonpoint pollution sources at the Dillon Reservoir in Colorado, point sources are allowed to treat their effluents at less than required (drinking water) standards in exchange for treatment of nonpoint pollution sources. In this case, the point sources are publicly owned sewage treatment plants, and the nonpoint sources are agricultural, recreational, and urban activities. The fact that trading in this system is between the waste treatment facilities and the water authorities implies low transactions costs and hence easier implementation. Despite some estimates of cost savings of approximately $1 million a year (Hahn and Stavins, 1991), only one point/nonpoint source trade and a few nonpoint source trades have taken place since the program's inception in 1984. Hahn and Hester (1990) attribute this dearth of trades to the requirement of prior government approval.

The SO_2 allowance program

More recently, EPA has employed a tradable permits system to control acid rain. Under the program, SO_2 allowances have been allocated freely to existing sources based on baseline fuel use and a specified emission rate; the number of allowances will then be restricted to two phases to assure reduction of 10 million tons in emissions from 1980 levels by the year 2010. To comply with the program, each existing firm must hold allowances equal or greater than their emissions during the year. Allowances can be traded within and between utilities as well as banked for future use. Firms found to produce excess emissions pay a penalty of $2,000 per ton and are required to offset their excess the following year.

Except for monitoring compliance, EPA's involvement in the program was minimal. For this reason, it is said to have worked better than earlier programs. Other reasons often attributed to the program's success are the existence of monitoring technologies for SO_2 and the mandatory requirements for firms to install continuous emission monitors. The first phase of emissions reduction was achieved in 1995 and applied only to the most emission-intensive generative units. Under Phase II of the program (to begin in year 2000), all fossil fuel power plants will be included. So far, the program seems to have worked very well, achieving and exceeding the targeted emission reductions. More than four million tons of allowances were transferred in 1996 between independent plants (Panayotou, 1998).

The post-Montreal CFCs trading system

Through the Montreal Protocol which 24 nations signed in September, 1988, and, later on, the London Conference which 59 nations signed in July 1990, signatory nations agreed to restrict their production and consumption of the chief gases responsible for the depletion of the ozone layer in order to eventually achieve a complete phase out of these gases between the years 2000 and 2005. To implement its responsibilities under the protocols, the United States has chosen to use a transferable permits system. In August 1988, the EPA issued regulations implementing a tradable permits system to achieve the targeted reductions. According to these initial regulations, all major U.S. producers and consumers of the controlled substances were allocated baseline production and consumption allowances using 1986 levels as the basis for proration. Each producer and consumer is allowed 100 per cent of this baseline allowance initially, with smaller allowances being granted after predefined deadlines. These allowances are transferable within producer and consumer categories and allowances can be transferred across international borders among signatory nations if the transactions are approved by EPA and results in the appropriate adjustments in the buyer or seller allowances in their respective countries. (Very few cases of such international trades have been reported to this date.) Production allowances can be augmented by demonstrating the safe reduction of an equivalent amount of controlled substances by approved means. Some interpollutant trading is even possible within categories of pollutants. All information on trades is confidential, so it is difficult to know how effective this program has been. One estimate suggests that as of September 1993, the traded amount was roughly 10 per cent of total permits (Hahn and Stavins, 1991). It was also suggested that by allocating allowances to the major domestic producers of CFCs and halons, EPA created sizable windfall profits (estimated to be in the billions of dollars) for those producers (Tietenberg, 1998). These windfall profits were then taxed away by the United States Congress.

States' initiatives

While all of the above programs were initiated and promoted by the federal government, the newest programs have arisen from state initiatives. One of the most ambitious of these programs is California's RECLAIM program of the South Coast Air Quality Management District of Southern California. This program was initiated in 1992 and covers trading in SO_2 and NO_x. Tradable permits were issued to 2,700 large polluters in proportion to the pollution emissions they would produce in 1992 at full production capacity. The number of permits issued annually will be reduced 8 per cent annually for NO_x and 6 per cent annually for NO_2 until the entire region is in full compliance with federal ambient standards. Trading is allowed and encouraged. Several brokerage firms are involved in making markets. The district has estimated savings of at least $270 million per year over previous programs (Howe, 1994).

Another example is the Ozone Transportation Commission (OTC) initiative to control NO_x emissions. In 1994, a group of North-Eastern states participating as members of the OTC, committed themselves to achieving region-wide NO_x emission-reduction targets by 1999 and 2003 through a tradable permits system. The NO_x budget program is a "cap-and-trade" program that allows large emitters of NO_x emissions to trade allowances to meet the emission targets in a cost-effective manner. Since the multistate committees that negotiated the agreements had no statutory authority, a model rule was developed to serve as a template for state laws that must be enacted for each state to participate. Elements covered by the model rule include: program applicability, control period, emission limitations, emission monitoring, record keeping, and electronic reporting equipment. Each state has now the responsibility for developing and adapting state rules that are consistent with the model rule, and a number of states have already done so. The first phase of the program was due to start in May 1999 with an initial cap of 219,000 tons per year per region. This cap will remain in place until 2003, the start of the second phase, when the cap will be reduced to 143,000 tons. The United States experience with tradable permits has stimulated interest in many countries. Yet, there has been rather limited experimentation in other countries either developed or developing, although serious considerations to this effect are being made.

Experience in Other Developed Countries

The European experience

The major EU countries have long made extensive use of an array of pollution taxes (as described in the previous section) but have rarely used tradable-permits schemes. The few applications that do exist are briefly mentioned below. In Germany, the air pollution legislation allows the transfer of emission-reduction obligations (offset) but this possibility is reported to have been used in less than 2 per cent of the cases (OECD, 1997a). In the Netherlands, power plant bubbles are allowed under an agreement signed between the 12 provinces and the Association of Electric Producers in 1990. In the United Kingdom, provisions for intrafirm bubbles for power plants have been introduced in 1996. While provisions have been introduced for pollution trading in these countries, OECD (1997a) argues that the systems have been applied on a very limited scale.

The Australian and New Zealand case

Tradable permits have been used on a somewhat greater scale in Australia and New Zealand. In Australia, the Murray-Darlin Basin Commission's program for salinity abatement of agricultural land and river system, began on January 1, 1988, as the "Salinity and Drainage Strategy." The strategy requires the state governments to desalinate the river Murray so as to reduce salinity by approximately 113 electric currents (EC) by 2015. (Electric currents are a standard measure of salinity and are used in calculating the number of salinity credits available for trade.) As a reward for such reductions, each state government receives salinity credits and may then choose to allow persons to resalinate the river, by selling or issuing their credits. It is estimated that after credits have been issued, river salinity would improve by approximately 78 EC (Australian Bureau of Industry Economics, 1992).

Tradable permits systems have also been used both in Australia and New Zealand in a slightly different context, namely, fisheries management. (Other countries such as Canada, Iceland, the Netherlands, and the United States have experimented with such programs, but on a much smaller scale.) Tradable permits (referred to, in the context of fisheries management, as individual transferable quota or ITQ) provide individuals with rights to harvest up to a given quota of the fish stock. The sum of all the quotas is the Total Allowable Catch (TAC) which is also the maximum

yield consistent with the survival of the species. These permits are tradable between vessels. They are denominated in tons of catch per fishing year (of the specified fishing stock). Numerous ITQ systems have been used in Australia and abroad. One of the most notable ones, the tripartite (Australia, New Zealand, and Japan) Southern Bluefin Tuna (SBT), failed from two main reasons allegedly: (1) authorities consistently failed to measure the true size of the population stock; and (2) population growth was volatile and unpredictable, thereby placing the stock at risk of over harvesting. A much wider application of tradable quotas is New Zealand's Quota Management Scheme (QMS). Concern has been raised with regard to its operations because of an apparent failure to reach an adequately stable and unique price for quotas. It was argued that trades had not been active enough to generate sufficient observations for reliable analysis (Australian Bureau of Industry Economics, 1992). Despite this problem, many believe that to this day New Zealand has been the most effective country in imposing this type of system (Panayotou, 1998).

Experience in Developing Countries

As yet, there has been no survey of the use of MBIs in developing countries comparable to those done for OECD countries. Only two major instances of operational tradable permits were reported in the still limited reviews of the literature on environmental policy in developing countries (O'Connor, 1998, OECD, 1997a, and Panayotou, 1998): in Chile and in Singapore.

Chile's 20-year experience with tradable water rights

Under Chile's water policy, individuals are granted freely tradable water use rights which are defined for a fixed quantity per unit of time and are awarded following application by a potential user. A water right is granted provided that it does not impair existing rights and that the ecological requirement of minimum flow has not yet been reached by previous allocations. These rights are granted free of charge and recorded in a national register, the granting authority reserving the rights to restrict water consumption in time of shortage. While owners of consumptive rights (for example, irrigation mainly) have no specified obligation with regard to quality and quantity of return flows, owners of nonconsumptive rights (for example, hydropower and recreation) are required to return the same quantity and quality of water. Water rights are freely tradable and the market for water rights is reported to be quite active (Panayotou, 1998).

Singapore's experience

Singapore's CFC permits auction scheme began in the late 1980s, after the ratification of the Montreal protocol. Each quarter the national consumption quota was allocated among importers and users, half on the basis of historic consumption (grandfathering) and half through auction. Importers and users were required to register to participate in the bidding process, with each firm specifying the amount of its demand and its bid price. Bids were ranked by price, with the lowest winning bid price (the one just exhausting the stock) serving as the unit permits price. That price was then charged on the full national allotment. Initially, there was a steep increase in permits price, providing users with incentives to adopt conservation measures, substitutes, and alternative technologies. As a result, CFC demand fell sharply. Since the decline in demand depressed the price, the government accelerated the phase-out schedule in an effort to support the price and maintain the incentive for continued demand reductions.

Singapore has also devised a vehicle ownership quota system designed to limit the growth in supply of private automobiles. The Vehicle Quota System (VQS) was introduced in May 1990, following essentially the same principles as the CFC quota system. Under VQS, anyone wishing to own a vehicle (except for buses and emergency vehicles) must have a certificate of entitlement (COE). Those vehicles already registered at the inception of the system were assumed to have a COE (another instance of grandfathering), while anyone wanting to buy a new one is required to bid for a COE in monthly tendered exercises. Each bidder must indicate the amount he or she is willing to pay for the right to own a vehicle in a particular category. Bids are ranked from highest to lowest; each successful bidder pays a COE price equal to the lowest successful bid price. The COE is valid for ten years from the date of registration of the vehicle, after which the COE must be renewed at the prevailing price defined as the 12-month moving average price of the COE in that vehicle category. By mid-1992, the COE price for a standard car had risen by more than 60 per cent and represented about one-quarter of the total sale price (Panayotou, 1998).

OVERVIEW AND RECENT EXPERIENCES WITH ECOLOGICAL TAX REFORMS IN EUROPE

Kai Schlegelmilch[*]

EXECUTIVE SUMMARY

At the turn of the millennium the use of environmental taxes has accelerated, at least at the level of the individual member states of the European Union (EU). However, at the EU level hardly any progress, particularly in the area of energy taxes, is visible, though a vast majority supports broadening and increasing minimum excise levels for all energy products (European Commission, 1997). In particular, large EU countries such as France, Germany, Italy and the United Kingdom have started applying this instrument. Central and Eastern European (CEE), some Asian and South American countries are also increasingly starting to experiment with environmental taxes, while in North America application is visible only at the individual state level–and apart from comprehensive tax expenditures.

In the EU, the unanimity voting rule renders much enhanced action hardly possible due to competitivity concerns as long as a few cohesion countries are not convinced of the positive impacts of such instruments. Still, in the context of the current Intergovernmental Conference, the Portuguese Presidency and the Commission aim for a qualified majority voting on environmental taxes. For the time being it remains also unclear whether the flexibility clause of the Amsterdam revision of the European Treaty, facilitating a coordinated approach of like-minded countries, can help to overcome the deadlocked situation.

When entering the debate and implementaion of ecological tax reform, several issues are at the core of debate. Potentially negative impacts on competitiveness are the major concern, which is closely related to impacts on employment. However, practically no negative experience is available, as the designs have been chosen appropriately. Other concerns debated are related to equity, inflation, and the potential trade off between raising revenues and showing environmental effects.

Evaluation studies or brief assessments of at least 30 environmental taxes and environmentally related fiscal provisions have been identified and are briefly reviewed in this report. Within the limitations of the studies, it appears that these taxes have been environmentally effective (achieving their environmental objectives) and they seem to have achieved such objectives at reasonable cost. Examples of particularly successful taxes include those on sulphur dioxide in Denmark and Sweden, on nitrogen oxides in Sweden, on Dutch water pollution, and all kinds of tax differentiation schemes for fuels in most countries.

Most barriers to implementation, especially to energy taxes, such as potential negative impacts on competitiveness, on employment (particularly on specific sectors and regions), on inflation, and on low income groups can be overcome by the removal of environmentally damaging subsidies and regulations, careful design, the use of environmental taxes and respective revenues within broader tax reforms, looking at distributional impacts by taking into account the proportionally higher positive physical impacts of reduced environmental damages for low-income groups; and abolishing the requirement of unanimity voting at EU level. Countries applying ecological tax reforms have demonstrated through the specific design of their taxes that these measures help to overcome the barriers.

There is still a wide scope for a much greater use of these instruments and for a much more coordinated policy, particularly between like-minded countries. If these national policies are better coordinated, current exemptions mostly given to the industrial sector can be reduced substantially while increasing the environmental effects. A breakthrough at the EU level has become more likely during the last two years.

If environmental taxes are well designed and implemented to exploit the advantages described above, they could deliver improvements in five key areas of public policy: the environment; innovation and competitiveness;

* Kai Schlegelmilch is Advisor on Ecological Tax Reform, Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Germany.

employment; the fiscal system; and the functioning of other instruments such as environmental agreements and regulations.

For least developed countries the concept of an ecological tax reform (ETR) should be adopted to the circumstances of these countries. Aiming at the increased efficiency of the use of resources, a very first step would be to make people pay for environmental services such as the provision of clean water, sewage, waste infrastructure, and transport infrastructure. Another element that can be adopted to national circumstances would be the elimination of environmentally damaging fiscal provisions in existing taxes and expenditures. The introduction of tax differentiations, such as for leaded and unleaded fuels, has turned out to be a very effective instrument in developed countries if alternatives are at hand.

INTRODUCTION

ECOLOGICAL tax reform (ETR) is a theory and a policy concept that is not only gaining increased attention, but whose first steps are also being implemented by more and more countries. It was "invented" about two decades ago, but its cautious implementation started only a decade ago. It then became more popular in the mid-1990s, while it gained strong momentum in the late 1990s in European countries. Environmental taxes are a major part of environmental tax reform, but only with the simultaneous reduction of other taxes is it recognised as an ETR. Depending on the circumstances, either the entire ETR or only the environmnental taxes are considered in the examples reviewed in this paper.

The idea and theory behind an ETR is fairly simple: Shifting the tax burden from "goods" such as labour, investment and capital to "bads" such as environmental pollution and consumption of natural resources, whereas not increasing overall tax burden (revenue neutrality). Such a tax shift would contribute to:

- reducing environmental pollution and the use of natural resources;
- increasing employment and/or economic performance;
- internalising externalities, particularly of environmental pollution;
- providing market-based incentives for both consumers and producers to change their behaviour towards a more efficient use of resources;
- encouraging innovations which can lead to an increased competitiveness;
- raising revenues which can be used in different ways, such as cutting other taxes on labour and capital or increasing environmental expenditures;
- being considered as an effective tool to tackle diffuse pollution sources such as transport, waste and chemicals;
- enforcing existing regulation which is otherwise often hard to control or costly to administer;
- accelerating the required integration of environmental aspects in other policies;
- broadening the range of instruments (so far, policy has relied heavily on regulations);
- contributing to the implementation of the precautionary principle–in addition to the polluter pays principle.

Although the advantages seem to be fairly clear, implementation turns out to be much more complex. This paper thus aims at providing insights into the specific discussions and the implementation of ecological tax reforms in various developed countries, mainly in Europe where the most experience is available. The issues which are often at the core of the debate are briefly discussed here and in more depth in the subsequent chapter.

The evidence for the environmental effectiveness of an ETR is of most importance for environmentalists. Since these taxes were introduced only during the last years, not much empirical data are yet available. Environmental taxes mostly aim at structural changes, but these only happen in the mid- and long-term. However, several studies show that environmental taxes bring about positive environmental impacts. Even energy-related taxes, aimed at the most fundamental structural changes, show initial positive effects, thus supporting the importance of that instrument.

Competitiveness of industry has become the major concern in most countries implementing steps of an ETR, closely related to the strong demand for international harmonisation. Industry often claims that the implementation of regular tax rates within an ETR would lead to a reallocation of companies abroad. As a consequence, environmental pollution–as far as climate relevant emissions are concerned–would not be reduced, but just take place abroad because the products would still be imported. Also, the economy would lose due to the loss of jobs.

The impact on employment of an ETR is another big issue. Protagonists argue that major positive job impacts would arise from a shift of supply and demand to more labour-intensive products and processes. Many computer simulations have been carried out, aimed at finding more insight into the existence of a "double dividend". This double dividend would consist of higher environmental protection while at

the same time also increasing overall welfare, either by higher growth or by creating more jobs. In a nutshell, they indicate that a small, yet positive double dividend can be expected (INFRAS/Ecoplan 1996). Even if only a single dividend existed, it would still be beneficial to introduce an Ecological Tax Reform.

Equity issues are also raised. On average, low-income groups spend relatively more of their income on energy products. Still, they also often benefit physically more than average from reduced pollution as they are normally hit hardest by environmental pollution. Depending on the social and cultural background of a society, this issue is either only a side-issue or even becomes the guiding principle when implementing an ETR.

The potential trade-off between reaching an environmental target and raising revenues is often an issue when countries are about to start implementing an ETR. Achieving both objectives seems to exclude each other which, indeed, holds true in theory. However, practice and simulations have clearly shown that an ETR can serve both purposes over a long term. So did the ordinary mineral oil tax in the past. Still, it is not always predictable to what extent which objective can be achieved.

Reducing environmentally counterproductive subsidies and tax expenditures is often claimed to be the best way of starting a green budget reform instead of introducing environmental taxes. Although this is theoretically certainly the adequate order, policy does not often follow. Surprisingly, after implementing the first steps of an ETR, countries often have shifted the focus towards subsidies. Hence, it is interesting to note that through an initially second best approach the first best approach can then be more easily followed.

Impacts on inflation are an issue in countries which are members of the European Monetary Union (EMU). Here three criteria for entering and staying in the EMU apply, of which one is an inflation rate of no more than 3 per cent. Hence, this topic has attracted particular attention for southern countries with traditionally high inflation rates. Some use this argument for preventing any additional energy taxation, others even reduce existing taxes to mitigate the effects triggered by the increase of world market prices for oil. Particularly in CEE countries, environmental tax rates are often linked to income or inflation in order to keep up the level of incentive.

Legal restrictions are raised, particularly when it comes to the discussion of international action. Here EU and World Trade Organisation (WTO) rules play an important role. A major question is often if, and by which means, a country which implements ETR is allowed to ensure that its industry is not set at a disadvantage by higher environmental taxes. The possibility that such measures could be abused for protectionism is of great importance. But also at the national level debates on the eligibility of certain environmental taxes within the constitutional frame are taking place.

An institutional approach of how to overcome various barriers has been the setting up of an ETR-Commission. These commissions often help to shift the focus from ETR only to subsidies and other provisions which are potentially environmentally damaging. Hence, "Green Budget Reforms" (GBR) are increasingly considered, taking into account all environmentally relevant fiscal activities of a state.

To avoid any misunderstanding about the papers content, the paper does not aim at providing theoretical insights in the debate of a potential "double dividend". To this end see Bovenberg and Goulder (1996); Bovenberg and Mooij (1994); and Repetto and others (1992) and for empirical modelling overview INFRAS/ECOPLAN (1996). There, the various aspects and pre-conditions, such as characteristics of labour markets, distortions of other taxes, deadweight losses of various taxes, of the existence of a double dividend are described in detail and discussed with respect to their existence in the real world. Here, however, they are neglected in order not to duplicate this work, but instead to enlighten theory with empirical aspects as outlined above. This is the innovative approach which enhances also the theoretical understanding of an Ecological Tax Reform.

DEFINITIONS AND STRUCTURE

Environmental taxes are part of an ecological tax reform. In this paper, tax reform are considered as ecological tax reforms only if (a) environmental taxes are introduced/increased; and (b) the revenue is mainly spent for reducing other taxes and charges.

A statement given in OECD (1995, 7), which also dealt with environmental taxes, applies: "Defining the scope of the work is inevitably imprecise. Similar measures in different countries may be variously defined as taxes, charges, levies, fees or duties, and it is not the intention to enter into semantic discussions of the borderline between these concepts."

It is the "greening" of the tax system or–more precisely–the fiscal system and/or the budget (thus sometimes called "Green Budget Reform"), which comprises three complementary approaches:

- The introduction of new environment-related taxes, generally on environmentally harmful products such as pesticides, fertilisers, batteries, motor vehicles, and waste products;
- A restructuring of existing taxes with a strong environmental relevance (energy products), to include an environmental component; for instance, a CO_2 and/or energy tax on energy products; and
- The modification or removal of tax provisions and subsidies with potentially detrimental effects on

the environment (such as agriculture subsidies or tax provisions in the transport sector) (OECD 1998a).

Hence, environmental taxes are a major element of an environmental tax reform which are themselves a major element of a green budget reform.

The objective is to present various kinds of taxes. From a statistical point of view, fiscal data from national sources have to be defined regardless of national individualities. Terms and concepts are used quite differently in each country, thus causing problems when making international comparisons.

The criterion for deciding if a payment to state authorities is a "tax" in the statistical meaning depends on whether it is accompanied by a benefit which is roughly equal to the amount which the subject is obliged to pay. If there is a good or service in exchange, the payment, usually called a charge or fee, is simply seen as the price of the delivered good. Only those payments where there is no benefit to the individual subject in relation to the amount of money paid are called "taxes".

To complete the picture of possible definitions, the three categories of environmental taxes as classified by EUROSTAT are the following: (a) energy taxes; (b) transport taxes; and (c) pollution taxes.

However, in the following mainly energy taxes–and the term environmental taxes is mostly used as a synonym if not otherwise mentioned–are at the core of the next chapter on implementation issues. This is justified on the grounds that most problems with respect to implementation of ecological tax reforms become relevant when implementing energy taxes. The reason behind this is that energy costs normally have the highest share of environmental costs of a company and that energy taxes also can lead to substantial revenues with their respective financial and economic impacts. However, since environmental evaluations are available for all three kind of environmental taxes they will also be considered where appropriate. Comprehensive reviews of all kinds of environmental taxes are available from OECD (1998b and 1999b). Finally, conclusions are drawn.

Full references are at the end of the paper. In Annex I, details on the design of the ecological tax reforms of the countries at the forefront, Denmark and the Netherlands, can be found. Annex II contains information on countries of Central and Eastern Europe (CEE).

Overall, the paper comprises analytical assessments as well as descriptive elements though the focus is on the latter given limited evaluations available due to fairly recent introductions of environmental tax reforms. Previous meetings of the Expert Group Meeting on Financial Issues of Agenda 21 in 1996 and 1997 (United Nations, 1996 and 1997) are also referenced, as their proceedings contain several articles on similar and the same topic, however with different focusses.

ISSUES OF IMPLEMENTATION

This chapter is structured along the most important issues of implementation. In order to give insights in practice, the paper does not stay at the theoretical level briefly outlined in the introduction, but illustrates these issues by providing experience from several countries. A comprehensive assessment is still difficult to do since ecological tax reforms were only introduced a few years ago and are aimedat mid- and long-term impacts.

Environmental effects

Environmental taxes were initially invented to primarily pursue environmental objectives. As set out in the introduction and when part of an ETR, they often serve several purposes. Still, the main purpose is to reduce environmental pollution and the use of natural resources. To this end, it is necessary to collect information on the environmental impacts of an ETR.

Since these taxes were introduced mainly in the 1990s, much empirical data are not yet available. Still, a distinction between energy taxes and pollution and transport taxes can be made. Whereas energy taxes aim at fundamental structural changes, pollution and transport taxes aim at achieving specific environmental improvements. On the one hand, the latter show more concrete results in the short- and mid-term. On the other hand, the former tend to show impacts mainly in the mid- and long-term. This renders evaluation of energy taxes difficult, in addition to the difficulties realted to the unsteadiness of the world oil/energy market.

Consequently, most evaluations concentrate on transport and pollution taxes, but a few preliminary evaluations are also available for energy taxes. Three comprehensive overviews of evaluated environmental taxes are available. Two are published by the European Environment Agency (EEA 1996 and 2000–forthcoming), and the third was published by the OECD (1997a). For the year 2000 or 2001, an assessment of the evaluations is foreseen by Mikael Skou Andersen on behalf of the Nordic Council. Subsequent summaries of evaluations are mainly based on a draft for publication by the EEA in the year 2000.

Although environmental taxation has for several years been at the core of the environmental debate in Europe and the OECD, there is no systematic and coordinated evaluation of market-based instruments. In 1997, the OECD formulated a framework for "Evaluating Economic Instruments for Environmental Policy" (OECD, 1997a), but hard scientific evidence on the effectiveness of environmental taxes

is still difficult to obtain. As the OECD (1999b, 78) puts it: "There is still a lack of evaluation of the environmental effectiveness of economic instruments, not to speak about their static and dynamic efficiency… Effectiveness is rated positively in general, although the substance of this information is meagre. Many statements regard sometimes remote proxies for environmental effectiveness, rather than effectiveness itself."

In CEE countries it is even worse. There are hardly any recent ex-post evaluation studies of environmental taxes available which could provide reliable data. Apart from the general difficulty of disentangling policy packages, which cannot be underestimated, evaluations are made even more difficult for several reasons:

- Most taxes–at least in the past–only worked under a centralised planning system. Hence, environmental funds often only became effective when the phase of transformation started and the market mechanism reflected more appropriately any scarcity. Otherwise, any kind of incentives were often offset by counteracting subsidy schemes or non-implementation of regulation.
- High rates of inflation threatened all environmental taxes in accession candidates. Some, such as Poland and Estonia, have thus linked charge rates to inflation.
- The transition phase often led to reduced growth and thus also reduced environmental pressure. It is difficult to separate this from the effects of economic instruments which have just started to function properly.
- Since most environmental taxes often have the dominating function of raising revenue and then go to environmental funds, it is necessary to take into account the effects of the spending since major environmental improvements may be expected from that side.
- For large polluters, comprehensive exemptions are often provided which reduce the environmental effects, but it is difficult to evaluate them if other instruments are part of a policy package.

Given these severe limitations, one can only rely on empirical observations without aiming at scientifically sound data: "For the Polish air pollution charges, there are incentive effects even if not at the efficient level. In Hungary, the packaging product charge had substantial environmental impact in the preparatory phase" (Klarer 1999, 211).

Poland was particularly successful in increasing charge rates. Levels have been increased to approximately 18-20 times the levels during the communist regime and now are among the highest in the world. Still, the estimated marginal cost of investments to achieve, for example, a 30 per cent reduction (equivalent to the new standards for large combustion sources that took effect in 1998) in SO_2 using the RAINS (Regional Acidification Information and Simulation) model developed by the International Institute for Applied Systems (IIASA, Laxenburg/ Austria), is approximately $600 per ton for large combustion sources. However, there is at least some interesting evidence that the high fee rates have provided incentives for polluters to make low-cost improvements to reduce emissions of particulates and SO_2, although not necessarily in compliance with the standards. As a result, fees are complemented by permits and emission and discharge standards (Peszko, 1999, 132). The indication of the non-implementation of the fee regime is supported in part by simulations from London Economics (Pototschnig 1996, 219): "A tougher environmental policy characterised by higher charges (...) would impose an extremely high resource cost to the Polish economy. A cost that few countries, let alone a country in transition, would be able to afford."

Since evidence is difficult to obtain and experience with environmental taxation is rather recent, a number of western European countries have created environmental tax commissions for the further development and partly also for the evaluation of their environmental taxes (see below on institutional approaches/capacity-building and Schlegelmilch 1998a). The commissions usually have the format of a roundtable. Representatives from different interest groups, science, politics and sometimes only public administration, support the governmental and parliamentarian decision-making. Some exist(ed) for a short period, some for a long period, others have been set up several times. Thus far, environmental tax commissions have been established in Austria, Belgium, Denmark, Ireland, the Netherlands, Norway, Sweden, the United Kingdom; similar approaches were chosen in Canada, the USA and Japan.

Conclusions and recommendations are usually connected to the national debate. However, according to OECD (1997b, 26) certain conclusions have general validity for the assessment of environmental taxes:

- Environmental taxes are an effective and efficient instrument for environmental protection.
- An ecological tax reform which shifts the tax burden from nature to labour and which contributes to the reduction of distorting taxes and subsidies, increases the economic performance by improving the environment and reducing market failure and distortions through wrong price signals.
- The improvements do not result in significant job losses, and could even increase employment opportunities.
- An ecological tax reform alone will only play a small contribution to the solution of unemployment in OECD countries.

- Increasing mobility of production factors can result in significant adjustment costs, if small open markets introduce measures which create a different environment for investments than in the rest of the world market. Ambitious environmental policies should therefore be co-ordinated internationally.

Next to "hard" scientific evidence, for example on quantitative reduction, there are a number of "soft", sometimes capacity-building effects which deserve more attention when evaluating market-based instruments. An example of "soft effects" is the "capacity-building" effects of the German waste water charge (Kraemer 1995).

The German water effluent charge system induced a "capacity-building" process. In particular, the charge improved administrative competence by:

- providing financial resources for increasing the number and capability of staff engaged in determining and issuing water pollution permits, and in monitoring and modelling activities;
- creating the need for better information and monitoring of effluent discharges—better monitoring strengthened the position of environmental authorities vis-à-vis polluters;
- introducing into the relationship between authorities and polluters the objective elements of control and enforcement associated with fiscal legislation;
- providing polluters with an incentive to review their discharges, and to consider technological options (awareness effect);
- giving more attention and recognition to issues of municipal sewage treatment;
- signalling the legislators' determination to ensure more effective compliance with existing pollution control requirements.

The simple fact that taxes are subject to a public debate makes not only the financial aspect, but also the environmental reason for introducing these instruments known to a broader public. As the evaluation shows, even negligible volumes of taxes and charges can result in a change of preferences which are not necessarily in proportion to the economic benefits which are gained by behavioural change. A purely economically based approach to evaluating environmental taxes is thus neither reasonable nor followed here.

Table 1 summarises the results of the review and qualitative assessment of the evaluation studies available on environmental taxes. The main conclusions are:

- the number of evaluation studies has increased substantially recently, not least due to a similarly increased application of environmental taxes and the need for evaluating their effects. The quality of these evaluations varies considerably and a water-proof causal relationship can likely never be established, though in some cases this relationship is very obvious;
- the taxes evaluated revealed environmental benefits and in most cases appear to be cost effective within the constraints of the evaluation performed;
- examples of particularly effective taxes are those on Swedish NO_x-emissions; on Dutch water pollution; on Danish sulphur emissions; all kinds of tax differentiation schemes for fuels in most countries were also very effective;
- incentive taxes are, in general, environmentally effective when the tax is sufficiently high to stimulate abatement measures;
- a significant contribution to the environmental effectiveness of the cost-covering charges is provided by the use of revenues for related environmental expenditures. In addition, some even had an unexpected incentive function;
- taxes can work over relatively short periods of time (2-4 years), and so compare favourably with other environmental policy tools;
- environmental taxes are often more effective than environmental agreements as supported by the fact that several of the latter had to be substituted by taxes after agreed targets were not achieved (examples are the Danish tax on NiCd batteries and the PVC tax);
- for several energy taxes there are now first evaluations available which provide first evidence for their achievement of their twin role as revenue raisers and as environmental incentive taxes;
- evaluating a tax and its environmental impact is often difficult. Environmental taxes are often part of a policy package that is hard to disentangle. Therefore the effectiveness of the tax 'per se' cannot always be clearly identified;
- evaluations of environmental taxes in accession candidates are basically not available; their evaluation has often been hindered or deteriorated by the fact that either hardly any environmental taxes were applied or that surrounding their applications the absence of market conditions were hampering their impacts. Still, they definitely worked in raising revenues and thus provided the funding for environmental expenditures and respective environmental effects.

Overall it is often found that environmental taxes can have multiple environmental effects and secondary benefits that could improve policy in five key areas: the environment, innovation and competitiveness, employment, the tax system, and the reinforcement of regulatory and other, e.g. so-called "voluntary" policies.

Table 1: Summary of an assessment of selected environmental taxes

Instrument	*Environmental Effect*	*Remarks on Effectiveness*
Annual car taxes (A, B, CH, CZ, D, DK, E, FIN, F, GR, HU, I, ICE, IRL, L, N, NL, P, S, UK)	+	Not quantified
Differentiation or temporary exception by certain criteria	+	Not quantified
Battery charges (S)	+++	Collection rate increased from 60% (1988) to around 100%, after the charge was introduced in 1989
CFC tax (DK)	++	Reduction of consumption of CFC by 50% (from 5.660 tons to 2.225 tons) between 1986 and 1992 supported by taxation
charges on domestic air traffic (S)	++	— Unknown for the noise effect but 90% reduction of hydrocarbon emissions by the change of the combustion chambers of Fokker F28
CO_2 tax (DK)	+	— Reduction of 1 million t CO_2 (1988-1995) — CO_2 emissions (industrial sector) were, compared to 1988, 3.0% lower in 1996 and 3.4% lower in 1997
CO_2 tax (N)	++	— Reduction of CO_2 emissions: — Private cars 2-3%(1991-1993) — Stationary combustion plants up to 21% in 1991 (year of introduction) — Production of intermediate products 11% (in 1991) — Government services 10% (in 1991) — Oil industry (1.5 per cent) — Total decrease 2-4% (1991-1993) — Household transport volume: — Total decrease by 1.5-1.9%/a — Private cars decreased 2-3% (1991-1993) — Public transport increased 0.5%/a
CO_2 tax (NL)	+	Reduction of CO_2 emissions by 1.7 million tons in 1994
CO_2 tax (S)	++	— Reduction of Swedish CO_2 emission by 5 million tons in the period of 1991-1994 (9 per cent of total emissions) — Amount of biomass fuel used at heating plants doubled from 10.2 to 20.4 TWh or from 25% to 42% of total district heating, whereas fossil fuels decreased from 36% to 30% (1990-1995) — Reduction in the district heating sector by 1.5 million tonnes
Environmental classification of diesel oil (S)	+++	In 1991 almost no automotive diesel was sold of Environmental Class (EC) 1 and EC 2, it rose to 50% in 1992 (4% for EC 1 and 46% for EC 2) and in 1993 20% was sold in EC 1 and 57% of EC 2
Environmental classification of petrol (S)	+++	EC2 (more environmentally friendly) accounted for 6% in first half of 1994, 16% for the second half and 85% in December when the tax differential took effect
Excise duties on motor fuels (A, B, CH, CZ, D, DK, E, FIN, F, GR, HU, I, ICE, IRL, L, N, NL, P, S, UK)	++	(See UK road fuel escalator below)
Fertiliser tax (FIN)	++	— Consumption of nitrogen fertiliser was in the 1990s about 40m kg less than in the 1980s and about 22% less than without the price increase of the levy — 11% reduction [period unclear] of total fertiliser use brought by changes in prices of production factors
Fuel duty escalator (UK)	+/?	Average miles per hour for lorries over 33 tonnes increased by 13% (1993-1998)
Landfill tax (UK)	++	64% of interviewed companies recycled, reused or minimised their waste, whereas only 29% were already engaged in re-use, recycling and minimisation beforehand, 13% knew about the tax but did nothing and 11% knew, analysed though did nothing

Table 1. (continued)

Instrument	*Environmental Effect*	*Remarks on Effectiveness*
NO_x charge (S)	+++	— NO_x emissions from combustion plants would have been 25% or 10.000 tons higher in 1995 (likely against 1992) (app. 3 per cent of total NO_x emission of Sweden) — Emissions from boilers would have been 80% higher
Pesticide tax (DK)	+	Consumption fell by 10-13% (1995/96-1997), although this is not entirely to the tax
Pesticide tax (S)	++	Reduction of sales of pesticides by 35 per cent between 1981-1985
Petroleum tax differential (P)	++	Share of super unleaded petrol increased from 0.3% to 18.3% (1989-1993)
Regulatory energy tax (NL)	+	— Estimated Increase of energy-saving by 1-3 per cent — Increase of economic feasibility of energy-saving measures by 5 per cent
Sales tax differentiation for 'clean' cars (S)	+/?	'soft effects' had an impact on newly registered cars belonging to classes 1+2, it did rise from about 16% to over 75% (1993-1996)
Sulphur tax (DK)	+++	— Decreasing sulphur content of fuel gas oil from 0.2 to 0.05% (within a few weeks from introduction in 1996) and the sulphur content of coal has been reduced by 30-35% — 33% reduction of SO_2 emissions in 1996 in the "other sectors" by a changeover to low sulphur content fuels
Sulphur tax (S)	++	— Decrease of sulphur content of oil-based fuels of more than 50 per cent below the legal limit (0.2 per cent). — Total reductions of 19.000 $S0_2$ (1989-1995) which stands for 30% of the total emissions reduction
Tax differential on high sulphur diesel (UK)	++	Proportion of ultra low sulphur diesel (ULSD) increased from 0 to 43% by Feb. 1999
Tax differentiation on leaded petrol (A, B, CH, DK, E, FIN, F, D, GR, HU, IRL, I, ICE, L, N, NL, P, POL, S, UK)	+++	Seldom quantified
Tax on some substances in commercial fertiliser (S)	++	— Fertiliser use declined by 2-3% in the first years — Reduction in use of nitrogen fertiliser by 15-20% (1991/1992) — Reduction in cadmium content from 35 to 20 grams cadmium per tonne phosphorus (likely in 1994)
Taxes levied on the purchase or registration of a new car (A, B, CH, DK, E, FIN, GR, HU, I, ICE, IRL, N, NL, P, S)	++	— e.g. car fleet in Denmark is about 30% versus over 50% in Germany
The energy package (CO_2 tax, sulphur tax, energy tax) (DK)	++	— Decrease of consumption on space heating by 10-15% (1970s to the 1990s) — Share of energy-saving refrigerators increased from 40% to 85% (1994-1996)
Vehicle scrapping charge (S) Vehicle scrapping premium	+/?	A "clear reduction" in number of abandoned cars
Waste tax (DK)	++	— Return rates increased from 35 to 61 per cent (1985-1995) — Recycling of construction waste increased from 0.8 to 1.6 mio. tons (1991-1995) — Waste dumping decreased from 39 to 18 per cent (1985-1995) — Household waste reduced by 16 per cent, construction waste by over 60 per cent, "miscellaneous" waste by 22 per cent, industrial waste increased by 8 per cent (1987-1993) — More than 80% of the reduction occurred in areas not subject to regulation, where establishment of new recycling facilities played a big role

Source: EEA (1996), excerpt from Wuppertal Institute's contribution to EEA (2000)
Note: Size of effect: + (small) ++ (medium) +++ (large) ? (unknown effect)

Competitiveness

Competitiveness has become the major concern in most countries implementing steps of an ETR, strongly related to the demand for international harmonisation. Industry often claims that the implementation of regular tax rates within an ETR would lead to a reallocation of companies abroad. As a consequence, environmental pollution–as far as greenhouse gases are concerned–would not be reduced, but would just take place abroad because the products would still be imported. Also, the economy would lose due to the loss of jobs.

However, this perspective presents only one side of the coin. So far, the polluter pays principle is not sufficiently applied, and the so-called external costs are not internalised in market prices. This means that the costs caused by environmental damages are borne by society, but not by the polluter. Hence, companies offering environmentally friendly, eco-efficient technologies, processes, products and services are facing a disadvantage. Were these costs internalised, the demand for such commodities would be much higher leading to increased competitiveness of these companies. Consequently, the perceived problem is more a problem of transition. The crucial question is thus: To what extent can a government burden its energy-intensive industries without the industry reallocating or closing down in the short run while providing incentives to increase demand for efficient commodities of advanced industries?

This ambivalence is also mirrored by the fact that initially an ETR was considered as an effective instrument to spur innovation and reach environmental targets more effectively. Though this still holds true, it is no longer so much at the core of discussion. Instead, concerns about the competitiveness of energy intensive industries dominate debates for a long time.

Another surrounding debate is that on the "national go-it-alone effort". To what extent may a country go ahead with implementing an ecological tax reform, possibly damaging its energy intensive industries, if others have not yet done so? Considering the recent implemention of the first of five steps of an ecological tax reform in Germany by 1 April 1999, Germany has in no way chosen a "national go-it-alone effort", as is so often asserted, usually by domestic industry; quite the opposite. The majority of the EU States have meanwhile implemented more or less many elements of ecological tax reforms–and partly even higher energy taxation. Now that Germany is one of the countries implementing ecological tax reform, others have again more windows of opportunity to further increase their tax levels. This holds true for Denmark and the Netherlands, which explicitly orient their environmental, but particularly energy tax policy along the steps Germany is taking. Both immediately increased diesel taxes, while Denmark was even a quarter earlier by accident since the initial time for its introduction was January 1999. Germany thus helped to break the deadlock situation and has allowed for new dynamics in Europe.

Italy also contributed to this dynamic substantially. In 1999, Italy was the first southern country to embark on carrying out eco-tax reform in five stages up to 2004.

The question of "national go-it-alone effort" or not is based moreover on a somewhat peculiar understanding of progress. Once one transfers the development of progress to companies, products and processes, this can only mean that something is tried out and done individually, without everything being done the same way and at the same time by everyone. This is how innovation happens–by trial and error. Transferred to the environmental tax debate, it means that one or two countries must, of course, lead the way and experiment, to learn from their experiences. Then, when they see that the concept makes sense, others will follow to a certain extent and as a result make that progress a part of everyday life. In that light, ecological tax reform is well on the way to being introduced and developed by most countries in Europe, and possibly also other industrialised countries.

Denmark and the Netherlands have both taken different approaches to combat possibly negative impacts on the competitiveness of energy-intensive industries. Denmark has applied differentiated tax rates depending on the existence of environmental agreements and respective measures taken and on the energy-intensity of various processes (for example, space heating is equally taxed as households since this is not relevant for competitiveness), gradually increasing rates while recycling all revenues through energy investment grants and reduction of social security contributions. The Netherlands has simply differentiated according to the amount of energy consumed. More details can be found in Annex I.

Interestingly, some of the countries at the forefront, like Denmark and the Netherlands have good economic indicators that show high growth rates and low unemployment figures (Annex I). There has been no apparent negative effect on the competitiveness of the pioneer states either. This can also be concluded from a worldwide comparative study by the *Institute for Management Development,* in which Denmark, Norway and the Netherlands were identified as the most strongly competitive (IMD, 1996). Furthermore, an empirical study unveils that the design of the ETR in Denmark is most profitable for industry (Clasen, 1998a and 1998b).

By using two examples–the Netherlands and Denmark–it is clear that an ETR can be organized so that it avoids negative effects without necessarily stopping the positive ones from being effective. No com-

pany reallocated abroad because of environmental tax reform; on the contrary, the export of environmental technologies was able to be increased in Denmark. There is an analysis of the impacts on employment, which is closely related to competitiveness, in the next section on employment.

Employment

The impact of an ETR on employment is another big issue. Protagonists argue that major positive job impacts would arise from a shift to more labour-intensive products and processes. Many computer simulations have been carried out, aiming at finding more insights in the existence of a "double dividend". This double dividend would consist of higher environmental protection whereas also increasing overall welfare, either by higher growth or by creating more jobs. In a nutshell, the large majority of studies indicates that there will be a small, but positive double dividend (INFRAS/ECOPLAN, 1996).

Looking for practical evidence is much more difficult since the macro-economic impacts of ecological tax reform is often over-estimated. Thus, other factors such as exchange rates, labour market developments, tariff agreements, interest rates, demand, and so on, have a much larger influence on the economic performance in general and on employment in particular. However, theory on the one hand, but also politicians on the other, increasingly ask for empirical evidence. Still, this is a very hard task given so many influencing and dominating factors. It is thus hardly possible to carry out such a task. Still, an attempt is made in the following, providing comparisons on a macro level, but also giving some indications for possible employment impacts on a micro level. It is very important to note that the following analysis is based on figures before the ecological tax reform was introduced in Germany.

Unemployment rates and ecological tax reform

Largely simultaneous with the introduction of an ETR, unemployment rates in Denmark and the Netherlands are falling. In Germany, on the other hand, where no ETR had been introduced up to the end of March 1999, the rate of unemployment rose almost continuously. Moreover, the rates in Denmark of 7.4 per cent and in the Netherlands of 5.6 per cent in 1998 were the lowest for several years, while Germany notched to 10.9 per cent.

On the one hand, it is clear that as yet no causality is connected with the observation of these phenomena. On the other hand, a connection can be assumed on the basis of the theoretical discussion. In the example of Denmark in particular, the effects of the ETR on the job market can be described. The 1999 publication of the evaluation of the CO_2 tax in Denmark also suggests that positive effects ensued in the job market (Danish Government, 1999a and 1999b).

The falling unemployment rates in the Netherlands and Denmark can clearly be attributed to a great extent to the higher proportion of part-time employment in Denmark and in the Netherlands. Also the noticeably more active jobs market policy in these two countries is reflected here. Another factor is the different statistical definition of who shows as unemployed in the statistics. In Germany, a substantial part of the increase in the rate of unemployment can be explained by the unification of Germany and the associated de-industrialization of East Germany. Consequently, at the present time probably only a small part of the declining unemployment rate is attributable to the introduction of an ETR. (Schlegelmilch 1998c).

Table 2: Unemployment rates 1990-1998 (per cent)

Country	*1990*	*1995*	*1996*	*1997*	*1998*
Denmark	9.6	10.3	8.8	8.1	7.4
Germany	6.2	9.4	10.3	11.1	10.9
Netherlands	6.0	7.1	6.7	6.2	5.6

Source: OECD (1997c), p. A24, table 21.

(a) Denmark

Since energy intensive processes were only burdened to a very low degree, no job losses happened there as far as is known. The relatively constructive co-operation of the Danish Industry Confederation (Dansk Industri) contributed to this (Schlegelmilch, 1998a).

In the field of regenerative industries, Denmark forced the development of wind power and biomass thermal power stations. New, competitive jobs no doubt resulted from this. Thus in 1997, the turnover of Danish manufacturers of wind power plants climbed to 1.3 billion DM. Meanwhile, they employed more than 10,000 people (Zank, 1998, 16). In 1996 Denmark was the third largest market in the world for the installation of wind power plants (Worldwatch Institute, 1997, 52). This positive development was confirmed by the Danish Department of Trade and Industry and it supplemented its good experiences with an associated export drive: "Danish experience through many years is that we have not damaged our competitiveness because of green taxes. In addition, we have developed new exports in the environmental

area." (Danish Minister of Economic Affairs, 1996)

The sales of refrigerators experienced a boom after the introduction of the ETR, which also led to additional employment. Not only were significantly more refrigerators sold than previously, but the demand for energy-saving appliances rose sharply. During the early part of 1994 just 40 per cent of the appliances sold were of more than average efficiency, but by the end of 1996 energy-saving appliances accounted for over 85 per cent of sales. In 1994 and 1995, mainly C-class appliances were bought, which use 10 per cent less electricity than the average. In 1996 B-class appliances were in most demand, which are up to 35 per cent more efficient. In the meantime, A and B class appliances account for more than 50 per cent of refrigerators sold in Denmark (Jänicke and others, 1997).

The Danish Energy Agency took on about 40 employees to cover the voluntary energy audits. Since energy audits are also partially carried out by outside consultants, a positive employment effect was also registered here. In the case of tax consultancies such as KPMG, the actual implementation of the ETR provided a demand for advisory services at the company level with a corresponding employment effect.

However, there is, in part macro-economically, the methodical problem of clearly allocating these positive employment effects to an ETR. The essential instrument in support of wind power is the obligation of electricity companies to pay an appropriate refund to the wind turbine operators. In real terms about EUR 0.08 per kilowatt-hour must be paid. High energy prices would also be of additional assistance for wind power. Denmark is one of the few countries to have kept the energy price level artificially high after the oil price crisis of the 1970s and has not reduced them, with the result that efforts in energy conservation continue to pay off and were not reduced by the fall in oil prices since the beginning of the 1980s.

The presumed connection of the medium and long term drop in unemployment rates and the introduction of the ETR is supported by the estimate of the expected macro-economic effects of the changes in taxation of energy by the Danish Ministry of Finance. According to that estimate, employment will rise by a net 2,000 additional jobs by the year 2000 (Danish Ministry of Finance, 1995, 17-20). This is explained in part by the fact that the total industrial costs burden will decrease by one half of one per cent in the year 2000, which is conditional upon a reduction in the employers' social security contributions and a special fund for small businesses.

A comparative study shows that the tax solution in Denmark has produced noticeably lower CO_2 emissions in the industrial sector than a solution mainly based on covenants (a kind of environmental agreement) for energy intensive industries provided with few incentives in the Netherlands (Enevoldsen, 1998 and 2000).

(b) The Netherlands

As pointed out above, the Netherlands has falling rates of unemployment. There is still no information available at company and sector levels. There is only an estimate of the expected employment effects of the ETR in the Netherlands prepared by the Centraal Planbureau (CPB)–the official economic advisory bureau of the Netherlands government. In it the effects of the ETR on employment are assessed as minor but positive. The unions are asked not to boost the wage-price spiral to compensate for price rises. Indeed, two large unions have undertaken not to take possible price rises triggered by the ETR as a reason for higher wage demands. As a result they are meeting a very important condition for ensuring the creation of extra jobs. Whether a price rise has been caused like that has not yet been analysed.

Interim Conclusions

The politically important conclusion is: No exodus of industry or even single branches or companies–so often feared–occurs with an intelligent concept for ecological tax reform. Rather, it has a tendency to secure jobs and create new ones.

The arguments produced for the net employment effect of an ETR on the national leadership anticipates the occurrence of a positive net effect. The innovations initiated by the ETR and the associated dynamic contribute to this. Also of considerable importance is the intelligent concept of the tax reform in a manner that allows it to use national leeway even in a time of increasing globalization and to be a pioneer in tax/environment policy. The positive development of unemployment rates and the approximately simultaneous introduction of an ETR in Denmark and the Netherlands as well as the positive effects at sector and company levels suggest the conclusion that a causality is to be seen between the two–a confirmation of the "double dividend" theory, as it were. However, these developments in the job market are partly attributable to an active employment policy and more part-time working. The effects of the ETR could be relatively low in the short term, but positive. In the long term, and that is where an ETR is aimed, the effects on the employment market could be greater. But an ecological tax reform cannot be expected to remedy the unemployment problem by itself, even in part. Besides, deeper evaluations of the connections are missing. In summary, it may be worth remembering that the ETR–as far as is known–had no negative effect on the job market either in Denmark or the Netherlands. On the other hand, there are obvious positive indications and evidence for the policy.

The OECD also encourages its Member States to introduce an ETR: "Consequently the individual countries, as part of the current process of structural adaptation and regulation shaping in the OECD area, should investigate the possibilities and the potential for ecologizing their tax systems considering the

country-specific economic, financial and environmentally political constraints. Concerted action would reduce potential emission transfer and unwanted interference with competitiveness to a minimum." (OECD, 1997b, 12). Thus, the greatest employment policy effects could be implemented.

Equity

Low-income groups normally have to spend relatively more of their income on energy products than on average and than rich people. Still, they do also often benefit physically more than on average from reduced pollution as they are normally hit hardest by environmental pollution. This has been shown by an empirical comparison between the distribution of incomes and the environmental pollution in a city such as Berlin where data for such an analysis was available (Luhmann, Ell and Roemer, 1998). Depending on the social and cultural background of a society, this issue is either only a side-issue or even becomes the guiding principle when implementing an ETR. Implementation issues are shown through the examples of the United Kingdom and the Netherlands where these issues were very dominant. Still, equity will also be considered with respect to the terms of trade and the relation to least developed countries.

For the United Kingdom, this issue is the most relevant concern. On 9 March 1999, the United Kingdom announced in its budget–which was greener than ever before–the introduction in April 2001 of a tax on–and this is extremely noteworthy–industrial energy consumption. This was detailed in November 1999. This means explicitly that higher taxation on private households will not be aimed at. The background to this is as follows. In 1993 the John Major government attempted to raise the VAT rate on private energy consumption, in particular on light heating oil, in two stages from the then 0 per cent to 8 and 17.5 per cent. The first stage was implemented successfully, but the full plan was felt to be socially unjust. The British weather, together with the relatively poor standard of heat insulation of British houses and the shortage of capital of many house owners (to possibly invest in better insulation) had significantly increased energy costs. Labour at that time was vehemently opposed to this, and promised to lower the VAT from 8 to 5 per cent, which they in fact did in 1998 after the change of government. Against the background of this public dispute, the almost revolutionary "fuel duty escalator" was able to be pushed through in 1993 without much discussion, though its revenue will be hypothecated from the year 2000 on and spent for public transport means.

A different approach was chosen by the Netherlands in order to meet social concerns. Apart from competitive concerns, social ones were at the core of the debate and many calculations were carried out so as to ensure the social balance of the environmental tax reform. So as not to overburden lower income groups excessively, tax-free allowances of 800 kilowatt-hours (kWh) and 800 cubic meters (cbm) of gas were introduced, on which neither households nor companies need to pay tax. In order not to tax bulk consumers too heavily, at the beginning (between 1996 and 1998) quantities over 170,000 cbm of gas and 50,000 kWh of electricity were also exempted from the tax. Other minor adjustments were also made. However, according to information from the Netherlands Finance Ministry, the complete gas and electricity consumption by households and about 95 per cent of the corresponding company consumption are affected by the tax. A drop of five per cent is expected in CO_2 emissions by the year 2000 because of the taxation on consumption.

In 1998, the government noticeably raised the tax-free limits on the basis of the third and final report of the environmental tax reform commission. The limits up to which electricity and gas are taxed were increased from 50,000 kWh of electricity to 10 million kWh and from 170,000 cbm of gas to 1 million cbm respectively (this equals approximately 10 million kWh).

The expected revenue of 2.1 billion Dutch Gilders (NLG) in 1998 was refunded in proportion to the revenue to households (less than 60 per cent) and companies (more than 40 per cent). For this purpose the income tax for households was changed at three points: (1) the entry tax rate was reduced by 0.6 per cent, (2) the tax-free subsistence level minimum was increased by 80 NLG and (3) tax allowances for senior citizens were increased by 1 per cent.

Furthermore, employers' social security contributions were decreased. Small companies are able to claim higher tax relief, and the corporation tax was reduced by three per cent over the first 100,000 NLG. Lastly, the regenerative energy source operator obtained a full refund, and is thus exempted from the tax. Until 2001 the Netherlands will double the tax rates introduced between 1996 and 1998 again.

This example demonstrates that one can keep up the entire incentive function for households while keeping the tax burden low. It is done by mainly taxing the marginal energy consumption and leaving bulk energy consumption, here considered as required for living (a kind of existence minimum), tax free. The marginal tax rate is high while the average tax burden is low. Though the concept is administrable in the Netherlands, it does certainly depend on a metering infrastructure. However, in this electronic and technical world it appears feasible to transfer such an approach to other countries, too.

If equity is considered in the context of the developing countries, the fear often is that taxing energy or other raw materials will hit their export economy. At first sight this certainly is an argument. However, it does not specifically apply to the concept of an ETR

but it holds true for any measure or simply reduction of demand of a commodity. Hence, one first has to analyse the policy that is followed in industrialised countries. If, and this is mostly the case, the aim is to increase efficiency, be it energy or resource efficiency, then it is this policy which might affect demand, but not the chosen instrument such as a tax. An ETR can neither solve nor worsen the problems that exist. Still, if pressure from least developed countries is increased they might succeed in gaining some of the additional revenues (currently not the case due to the guiding principle of revenue neutrality) for official development assistance (ODA).

Trade-off between environmental and fiscal objectives

When countries are about to start implementing an ETR, a trade-off between environmental and fiscal objectives is often perceived as an unresolvable issue. Both aims seem to exclude each other, which, indeed, holds true in theory. However, practice and simulations have clearly shown that an ETR can serve both purposes over a long term. Still, it is not always predictable to what extent which objective can be achieved. Furthermore, the motivation to introduce such taxes often differs between various stakeholders. Hence, quite a few taxes serve at least two purposes, whereas the trigger for high revenues often stems from the labour side wishing to reduce the burden on labour. Still, the environmentalists are not unsatisfied since the interest of the finance and labour side will ensure a steadily increasing level of taxation and thus incentives.

Some considerations on two fundamentally different types of environmental taxes may help to get an understanding in which cases the trade-off becomes relevant and which cases it is negligible.

Introducing a product tax can make that trade-off occur significantly. This holds particularly true if alternatives are readily available and if no tax is levied on that alternative. For example, given the introduction of a tax on aluminium cans, consumers might easily change preferences due to increasing prices and buy glass bottles. Then tax revenues would soon fall, but the environmental impact would be large. However, product taxes are one element of an ecological tax reform only. And in fact, they mostly constitute only a minor part in terms of revenues.

If an ecological tax reform is introduced, not product but energy taxes are practically at the core of the reform since they ensure a broad and fairly stable source of revenues. Only given this prerequisite is it possible to do a reform. By counting on substantial revenues at least for mid-term, finance ministries are ready to use the revenues for the reduction of other taxes or levies. Energy consumption can simply not be substituted either in the short-term or in the mid-term. Hence, taxing energy is an ideal revenue raiser (only a little bit less ideal is CO_2). Looking back on the outgoing century one easily notices that finance ministers have relied heavily on some kind of energy taxation. Mineral oils in particular often provide for the third largest source of revenues in federal budgets (after income and value-added taxes). And ministers were not afraid of losing revenues when increasing rates. Quite the opposite. They did the latter again and again while revenues did so as well. Still, now as they are not only increased for financing the budget, the announcement of further increases is likely to have a certain environmental impact. But it should not be overestimated since mobility is increasing and basically not price driven, but demand driven.

Of course, the question immediately arises of whether these mineral oil taxes have had any environmental impact. This is certainly not true since increase of demand for mineral oils would certainly have been higher than without any tax. However, the assessment is difficult as shown in the previous section.

In the case of the Netherlands a specific problem appears to emerge, which is that revenue recycling seems to become difficult. Still, it is interesting to note that the Netherlands have already achieved such a state.

A final remark shall be made on the expectations which an environmental tax reform meets. Hardly ever has a tax reform concept had to meet so many requirements. Compared with dozens of income tax reforms where long-term predictability of revenues were often not even considered, environmental tax reform must prove this. Looking back in time, the history of public finance tells us that as soon as a potential new tax base is ready to be taxed, it will be taxed. This still holds true and thus any worries about a decrease of revenues should not be overestimated.

Reducing environmentally counterproductive subsidies and tax expenditures

Reducing environmentally counterproductive subsidies and tax expenditures is often claimed to be the best way of starting a fiscal reform instead of starting with introducing environmental taxes. Although this is theoretically certainly the adequate order, policy does not care too much about it, but often seems to prefer the second best approach of introducing taxes first. Still surprisingly, after implementing first steps of an ETR countries often shifted the focus towards reducing environmentally damaging subsidies. Hence, it is interesting to note that through an initially second best approach the first best approach can be more easily followed. This holds true for Norway and the Netherlands. This was, if not triggered, at least essentially influenced by reports from commissions on ecological tax reforms in these two countries.

Still, the United Kingdom first reduced support to coal mining substantially before introducing environ-

mental taxes. This also appears to be the way forward in the United States. Introducing new taxes or increasing existing ones appears to be almost like committing political suicide. Hence, decreasing subsidies, possibly first the most environmentally damaging subsidies presents an approach that was at least partially successful (Friends of the Earth, 1999). However, in times of falling world market prices for oil, as in the first half of 1999, the government seemed to abandon its initial approach and put the profitability of oil and other energy companies higher on the agenda and provided generous tax exemptions for those sectors. The danger emerges again that abandoned subsidies revive again and that past small steps are now turned into fake reforms, easily reversible. Apparently economic considerations are still dominating fiscal and environmental ones.

Impacts on inflation

Impacts on inflation are an issue in countries which are members of the European Monetary Union (EMU). Here, three criteria for entering and remaining in the EMU apply, of which one is an inflation rate of no more than 3 per cent. Hence this topic has attracted particular attention from southern countries with traditionally high inflation rates. Some use this argument for preventing any additional energy taxation, others even reduce existing taxes to mitigate the effects triggered by the increase of world market prices for oil.

This topic is particularly stressed by the so-called cohesion countries such as Spain, Ireland, Greece and Portugal, since Greece is not yet a member of the EMU because it failed compliance with some criteria and the others fear being penalised due to non-compliance. However, reducing other taxes than energy or environmental taxes is another possibility of how to avoid such effects.

Particularly in CEE countries, environmental tax rates are often linked to income or inflation in order to keep up the level of incentive. This is of great importance to really provide incentives. In the past this has not always been the case given that inflation rates were often far more than 10 per cent. Indexation ensures an automatic increase, possibly also above inflation rates in order to increase the incentive. This has been established in the United Kingdom, which is already well-known for the automatic increase in fuel tax of about 6 per cent above inflation without time restriction, the so-called "fuel tax escalator". First, at the beginning of the 1990s, the taxes on diesel and petrol–a worldwide one-off–were raised to the same level. Secondly, in March 1993, it was resolved that a start would be made with a real annual tax rate increase of 3 per cent, in November the annual rate increase was raised to 5 per cent, and the new Labour government under Tony Blair resolved to raise it to 6 per cent in 1998.

Legal Restrictions

Legal matters are raised, particularly when it comes to the discussion of international action. Here EU and WTO-rules play an important role. The major question is often, if and by which means is a country which implements ETR allowed to ensure that its industry is not set at a disadvantage by higher environmental taxes whilst not abusing them for illegible protectionism. But also on a national level, debates on the eligibility of certain environmental taxes within the constitutional framework are taking place. The latter is perceived as too specific to be discussed here since every country has its own evolution and thus constitutional framework for such taxes.

Environmental tariffs can ensure that imports pay a similar level of tax to domestic products, thereby neutralising any competitiveness effects in the domestic market, while export rebates can ensure that the taxed domestic industries' ability to compete abroad does not suffer. However, calculating appropriate tariffs on imports, especially when the environmental tax base is an industrial input, such as energy, rather than a final product, is difficult, and easily interpreted, rightly or wrongly, as protectionism.

Border tax adjustments may run counter to international trade rules which are exactly designed to prevent protectionism. This is particularly true if domestic and foreign products are not treated equally. But in general, border tax adjustments are an important means of providing an equal level playing field. However, so far it is only applied in a single case with respect to environmental taxes, whereas it is often applied in the case of turnover taxes in the particular case of value added tax as in the European Union. The United States has set up a border tax adjustment for its tax on chlorofluorocarbons (CFC). It is levied on imports on the basis of calculations of CFCs used as content as well as in the imports' manufacture (Hoerner, 1998, 185-199). Still, whether border tax adjustment on energy or carbon content will be set up is unclear since calculation appears to be more difficult. Given the enormous amount of information available nowadays it is though not only of theoretical value, but could well become relevant in practice.

Another example of legal problems became visible when the EU Court of Justice in a sentence on 2 April 1998 ruled that Finland must abolish a discriminatory fiscal provision. An importer of electricity from Sweden to Finland had complained that the electricity, which he argued was generated from renewable energy sources, was taxed at a higher rate than electricity domestically generated from renewable energy sources in Finland. This sentence rendered it even more difficult to exempt electricity from renewables from electricity taxation. But it was stated that not even the possibility of proofing that the electricity

was generated from renewables was eligible which may be interpreted as a possible solution. Hence, a network called Renewable Energy Certificate System (RECS) is currently carrying out a pilot project to establish such a certificate system on which all participating countries could rely (http://www.recs.org). This appears to be a prerequisite for trading renewables, but also for treating them preferentially from a fiscal point of view.

There are many more legal problems involved and particularly countries at the forefront in Europe have a long (and often bad) experience with respect to extending environmental taxation. Examples are that Denmark was neither allowed to tax kerosene on flights of commercial carriers, nor to tax at least the fuel consumption of its domestic ships and ferries.

State aid poses another particular problem for countries who wish to go ahead. Here, clear guidelines and practice from the European Commission are required to ensure that Member States of the EU are not facing problems when applying reduced tax rates for energy-intensive branches which might otherwise reallocate abroad. As long as no sufficient international harmonisation is achieved, such provisions must be allowed if forerunners are not to be discouraged. Still the Commission always asks for degressive and limited exceptions even though international harmonisation has not made real progress.

At the EU level the biggest barrier to progress is the requirement for unanimity voting on all fiscal matters thus, including those environmentally related. After the many years of fruitless discussions on an EU-wide CO_2-energy tax since 1992, there has been a new Directive proposal from the Commission on the table since 1997 (so-called Monti proposal), that (a) provides for an extension of the already currently valid minimum taxation of mineral oils to all energy sources–with the exception of renewable ones, and (b) an increase of all minimum tax rates in three stages (initially 1998/2000/2002).

Although several Presidencies tried to get the Council to adopt this proposal, it failed until now. Cohesion states in particular, mainly Spain and Ireland, have come out against the Commission proposal. As a result in the first half of 1999, the German Presidency for its part, has attempted to identify the specific problems that the individual states have with the proposal, and to point out correspondingly specific solution approaches in a compromise paper (http://www.oeko-steuer.de). Specific often means that exceptions and interim periods are authorized in order to achieve a way in at EU level. However, a breakthrough could not be achieved. This means that 13 of the 15 countries are in favour. The negotiations are proving to be very difficult, and, because of the consensus principle, it is hardly foreseeable how a compromise can essentially be achieved about the lowest common denominator, if at all. The right of veto of one of the countries prevents EU-wide progressive energy taxation.

In the conclusion of the presidency of the Cologne EU summit in June 1999 the subject was touched upon in three points:

> "The European Council emphasises the need to make tax systems in Europe more employment-friendly and to combat harmful tax competition: Confirming the conclusions of the Vienna European Council, the European Council calls for: … the Council to continue its work on a framework for the taxation of energy on the basis of the ECOFIN Council report, bearing in mind the impact it will have on the environment" (No. 22).

> "The European Council also considers an appropriate framework for energy taxation to be necessary and urges the Council (Economic and Financial Questions) to reach an early decision in the course of its discussions. The European Council takes note of the incoming Presidency's initiative to step up the Community's activities on climate matters." (No. 31)
>
> "It calls upon the Council …(Economic and Financial Questions)…to report back to it in 2000 on the integration of environmental issues and sustainable development into each of the policy areas." (No. 32)

Behind it are concealed in part very different initial situations. How is one to deal with the fact that we are indeed talking about an EU-wide energy taxation, but the energy policy and also the energy mix in the individual Member States differ widely on occasions? Would it make sense to start with the uniform minimum taxation of products that are used in similar ways in most of the countries, such as petrol and diesel, and possibly also electricity?

In December 1997 a consensus for a code of behaviour with regard to company taxation was made. Why should something similar not be possible in relation to energy taxation? The Monti proposal can also be interpreted as such a behavioural code, since on the one hand it stipulates a minimum taxation, but on the other hand it makes no stipulation for the structure and maximum rates. Sometimes it is easier if the thing is called by another name. Perhaps the latter would be an approach for making progress EU-wide.

At the same time, the so-called "like-minded" countries, should include their previous meetings and at least come to closer co-ordination of their next stage of ecological tax reform. As a result, problems that might otherwise arise for the economy could be reduced. Even the exemption from the electricity tax for renewable energy sources aimed at for Germany and other countries could happen much more elegantly and simply if all the pioneer states could decide on a similar procedure.

As part of the next intergovernmental conference on the further development of the EU Treaty the subject of consensus about tax regulations, especially of environment policy relevant decisions, will certainly be on the agenda again.

Moreover, one should not only cast one's eyes in

Table 3. Details of Ecological Tax/Budget Reform Commissions

Country	*Date of introduction*	*Environmental taxes*	*Recycling revenues*	*Damaging subsidies*	*Other damaging effects of fiscal reform*	*Within the context of broader tax reform*
Austria	1998	+	+	+	+/?	+
Belgium	1993	+	+	–	–/?	?
Denmark	1993	+	+	–	–	+
Ireland	1996/97	+	+	–	?	?
Netherlands	1995/1990*	+	+	–/?	+	+
Norway	1994/1990*	+	+	+	+	+
Sweden	1995	+	+	–	+/?	+
U.K.	1998	+	+	–	–	+
Canada	1994	+	+	+	+/?	?
Japan	1994	+	+	–	–/?	?
USA	1993	+	+	+	+	+

Source: Schlegelmilch (1999a).
Note: + = considered; – = not considered; ? = unknown or unclear; * = earlier commission existed in this year

Comments:
(a) Austria: Though environmental taxes were examined as part of a major tax reform, no implementation of either results of the Commission took place due to forthcoming elections. The report was published at the end of 1998 (http://www.bmf.gv.at).
(b) Belgium: So far, packaging taxes appear to be the focus of the Commission.
(c) Denmark: Commission facilitated the implementation of an ecological tax reform; strong political commitment.
(d) Ireland: Initially almost no information was available as it was a purely inter-ministerial committee, but it published a report with several deliberations mid-1999.
(e) Netherlands: Commission helped to accelerate implementation and acceptance of environmental taxes. A summarising report of all three Commissions is available, dated 1998.
(f) Norway: Commission made concrete proposals for ecological tax reform, taking into account the employment issues. The Commission released a report on its work in 1997.
(g) Sweden: Commission did some macroeconomic modelling and came up with concrete proposals.
(h) U.K.: The results of the consultation paper by Lord Collin Marshall (1998) prepared the floor for the announcement of the introduction of a tax on industrial energy consumption for 2001 by the Finance Minister, Gordon Brown.
(i) Canada: Commission ended its discussions due to a disputed range of approaches and recommendations; hardly any implementation as a result.
(j) Japan: Commission promoted the use of economic instruments, particularly environmental taxes; a summary of the report is available in English.
(k) USA: general fiscal considerations within a broader approach, of which the environment is one of several issues. A report was published in 1997.

the direction of energy taxes. There are several dozen other types of eco-taxes on various substances and activities that could also be subject to taxation. So there is very vague consideration by the EU Commission about taxation on pesticides and/or fertilizer.

Institutional Approaches, Capacity Building

An institutional approach of how to overcome various barriers has been the setting up of an ETR-Commission. These commissions often helped to shift the focus from ETR only to subsidies and other provisions which are potentially environmentally damaging. Hence, "Green Budget Reforms" (GBR) are increasingly considered, taking into account all environmentally relevant fiscal activities of a state. They are particularly valuable if the political will for continuous efforts of greening the budget is given. If political will is lacking it also renders implementation very difficult although a commission may have been set up (Japan, Canada, USA, Ireland). The following table 3 provides an overview.

Procedural Aspects

Considering the procedure how ecological tax reforms are implemented, the United Kingdom, apart from the abovementioned Commissions provides useful guidance.

Of particular interest, is the extremely transparent and open procedure by which this political decision to introduce a tax on industrial energy consumption was arrived at. At the beginning of 1998 the Chancellor of the Exchequers, Gordon Brown, commissioned Lord Collin Marshall, the former president of the Confederation of British Industry (CBI) (comparable to the German BDI) and currently chairman of British Airways, to investigate which economic instruments would be most suitable for lowering industrial energy consumption. Lord Marshall then published a consultation paper containing many questions, which were also placed on the Internet, addressed to interested specialists in general, and asking for answers to be given to the questions. These were mainly concentrated on whether an energy tax or an emissions trading would be more suitable for reducing the greenhouse gas emissions. Until July 1998 anyone could deliver an opinion on the subject. In spite of this "world-wide" publication, the Wuppertal Institute for Climate, Environment and Energy, Germany, was the only foreign institute to comment. In November 1998 Marshall then delivered his report to the Government, with the conclusion stating " Hence, my conclusion is that there probably is a role for a tax if businesses of all sizes and from all sectors are to contribute to improved energy efficiency and help meet the UK's emissions targets." (Marshall, 1998). Report and recommendations were then considered by Gordon Brown and his team. In a budget speech on 9 March 1999 he announced the introduction of a tax in April 2001, mentioning several details of the tax which was is also named climate change levy (CCL). This is two years prior introduction that the Chancellor delivered a report specifying the legal, administrative and economic questions that would have to be answered about the organization of the CCL. Anyone who wished to respond could do so by 28 May 1999. After intensive consultations with industry the Chancellor announced on 9 November 1999 the concrete rates which were substantially reduced against the initial plans. Though industry is not in favour of this tax, it recognises the transparent and open process.

A less positive example is Slovenia. It introduced a CO_2 tax in 1997 as the first EU accession candidate. Its price effects varied between three and eleven per cent. At the beginning of 1998 it tripled, which caused small disgruntlement in trade and industry. The particular reason for this was the unexpected increase and the way the tax revenue was applied. As in 1997, the tax was increased unannounced, so that no one had been able to anticipate the increase with the corresponding investment and consumer behaviour. Furthermore, the revenue was not returned to trade and industry as a whole, but used clearly and specifically for the investment in filters of a refinery.

The Central and Eastern European (CEE) countries still have a ways to go in order to increase the proportion of environmental taxes and their public acceptance. In many of these countries the grounds for comprehensive ecological tax reform are not yet prepared, e.g. in the Czech Republic. This may be due to a lack of interest in general politics, but also a lack of discussion of environmental issues and thus a lack of environmental awareness. In western countries it took about 30 years to come to the level of common understanding on the high necessity for environmental protection, but CEE countries have to run through all these phases in a very densed time.

This is very important since the envisaged accession to the EU requires an increase energy taxes anyway. Thus one side of the reform is foreseeable and the challenge is to use this pressure from the EU to implement a broad ecological tax reform which finds acceptance. Now is the unique opportunity to establish the correct general conditions to avoid repeating the undesirable trends of the western states with regard to providing the wrong incentives. Still, the frame for additional environmental taxes is not so bad is it might sound like. Many charges and fees are already levied in CEE countries for a long time (Annex II).

CONCLUSIONS

Greater use of environmental taxes. The fact that environmental taxes are used increasingly more, recently by large European countries such as France, Germany, Italy, and the United Kingdom, shows that the reasons for their application are convincing. Hence, it is likely that more countries and also the EU as a whole will follow sooner or later.

Greater coordination and harmonisation. However, there was hardly any coordinated harmonisation and compatibility at the EU level. But factual pressure for following this approach is increasing. At least joint initiatives of like-minded countries, which are in the meantime the vast majority of all EU countries, are likely to emerge if no action is taken on the EU level. Accession candidates could be part of such initiatives in order to soften possible negative effects on trade and border transactions, and to spur their economies directly towards sustainability.

More incentives for industry. Amongst countries at the forefront the need remains to better harmonise the often very different ways of taxing industry at a lower rate. In significant contrast to this general feature, the United Kingdom will introduce a tax on industrial use of energy only which will prepare the

ground for a generally higher taxation of industry, at least if several environmental agreements - now being the favourite instrument for this sector - should turn out not to achieve agreed targets.

More and better evaluation. While the theoretical evaluation of environmental taxation is a well developed field, and adequate evaluations of practical experiences with such taxes is increasing, often the quality is still not so good. However, it has improved and it is well possible that this fact is owed to the methods of evaluation reaching limits due to several constraints. The need to integrate evaluation with tax design has been recognised by OECD, which has agreed on methodological guidelines for economic instrument evaluation. Still, apparently these are hardly followed, or at least it is seldom referred to.

More research - especially of policy packages and externalities. Environmental taxes often work best when part of a policy package aiming at addressing one (or more) environmental problems, but the interaction of several policy tools is then complex. Further analysis and understanding of these issues could be helpful for future policy making. Particularly worthwhile would be the further development of the OECD framework and its application. Of major interest would be assessing the evaluations since qualities and methodologies differ substantially. More research is clearly needed, but there is sufficient knowledge to justify much further policy development on environmental taxes.

Conclusions for Least Developed Countries. The overall aim of an environmental policy should be to increase efficiency of the use of resources as they are particularly scarce in these countries. Copying the concepts of an ETR from developed countries would likely not be appropriate, but rather make ETR disreputable as the conditions are quite different from developed countries. However, some general ideas can and should be tested and applied in these countries, not at least because these indirect taxes are less vulnerable to tax fraud.

A very first step would be to make people pay for environmental services such as the provision of clean water, sewage, waste infrastructure, transport infrastructure. However, this does immediately raise the issue of the effectiveness of administrations and concerns about corruption. The situation is not rendered easier by the fact that mostly wealthy people have access to such environmental infrastructure which mostly also are part of the governing society, thus being more hesitant to charge themselves. However, a modest surplus only could be used to extend the network of water and sewage pipes to quarters which are not yet connected.

Another element that can be adopted to national circumstances would be the elimination of environmentally damaging fiscal provisions in existing taxes and expenditures. The introduction of tax differentiations such as for leaded and unleaded fuels has turned out to be a very effective instrument in developed countries if alternatives are at hand. This should even be the easiest way to start with an enhanced use of economic instruments for environmental protection.

Whereas the perspective that concerns individual countries in Europe is very promising, the opposite holds true at the EU level and in other developed countries. Not least due to the dynamic that is increasingly taking place in Europe, one can guess that ETR will soon be accepted even more broadly. To close with a saying of the French author Victor Hugo: "Nothing is so powerful as an idea whose time has come."■

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ANNEX I

Designs of Ecological Tax Reforms in Denmark and the Netherlands

Denmark

After a CO_2 tax for households had been introduced on 15 May 1992 and for industry on 1 January 1993, this CO_2 tax was embedded in an ETR of wider scope. This was modified in 1996 and is at the moment in place until the year 2000. In 1999 an evaluation was made of the experience gained until then, which confirmed that this system basically worked and had produced the desired results. Only the administrative costs connected with the energy audit needed to be reduced.

The ETR of 1994 included various eco-taxes. Here only the taxes on energy, CO_2 and sulphur (the latest basis for assessment was only set up in 1996) are referred to. Conceptually, particular attention was paid in Denmark to safeguard companies' competitiveness, depending especially on the energy intensity of the production.

Thus the energy tax is refunded up to 100% to the company is refunded. The CO_2 tax is refunded up to at least 50 per cent. The rate of tax moreover depends on a ratio formula worked out from the proportion of energy tax and the net product. To put it very simply: the greater the proportion of energy tax on the net product, the larger the share of CO_2 tax refunded.

To put it in slightly exaggerated terms, this resulted in the incentive for legally taking operating units out of store being so strong that these were widely excepted and the remaining operating units no longer had any substantial energy consumption. The revenue decreased and the ecological aim went amiss–similar incentives are also contained in the organization of the first stage of the ecological tax reform in Germany, which must be abolished in the third stage at the latest.

The reform that came into force in 1996 should plug the gaps contained in the 1994 ETR concept. In addition, things were no longer geared to the legal unit of the company, but to operations, and within them to the use of energy for space heating and the type of production process. (Danish Ministry of Finance 1995; Luhmann 1996). Since then, energy intensive processes have been defined by two criteria: the tax burden must be more than one per cent of turnover and three per cent of net product. A (definitive) list of a total of 35 production processes was drawn up on this basis, to which a reduced CO_2 tax rate is applicable. In addition, the effective tax rates for companies were modified depending on whether they participated in an energy audit or not. Since 1998, the rate of taxation for space heating, after an introductory phase and transition since 1996, is that of non-companies. In all there are 5 different tax rates for companies in Denmark. Comparing these values with each other, three characteristics are established:

- The spread of tax rate between the cases "with" and "without" energy auditing increases significantly with time–this a strongly effective behavioural factor in the 96 reform.
- From 1996 to 2000, for energy intensive processes, only those tax rates that became due through refusing to participate in energy auditing are increased, so the increases are avoidable.
- A type of indexation to keep the real value of the only nominally constant tax rates stable was not chosen. Thus the tax rates are exposed unprotected to a decline through inflation.

The tax burden per unit energy source between companies and non-companies varies depending on the energy intensity by more than a factor of 100. As a result, Denmark clearly differentiated the tax rates for energy consumption between companies and households/state. In addition, pressure to act was applied, in that all companies not carrying out an energy audit are increasingly burdened for energy intensive processes, and are more and more heavily burdened for other processes as such without energy auditing (Schlegelmilch 1998b).

This concept of the ETR in Denmark is a tailor-made one, since competitiveness is taken into account as closely as possible by being geared to the process level. In principle, such a structure and approach is a possibility for future stages of the ecological tax reform in Germany.

The Netherlands

After the Netherlands introduced increased eco-taxes some years ago (e.g. a groundwater tax), they brought in an energy tax (regulatory energy tax) at the beginning of 1996, which is generally seen as the nucleus of an ETR. An energy tax was imposed on light heating oil, natural gas, LPG and electricity, based on the example of the original 1992 EU proposal. Fuels are not additionally taxed, since they are burdened anyway via the mineral oil tax, which is adjusted annually to the rate of inflation. The new CO_2-/energy tax rates were increased to three times the starting rate from 1996 to 1998 in accordance with the 1992 EU proposal. Since the start of 1996 electricity has been burdened with the retail tax rate. As a result, in 1998 the retail price of gas for small consumers and households rose by 20 to 25 per cent, and that of electricity by about 15 per cent. The energy tax was borne mainly by households and small consumers.

In order to preserve international competitiveness, a consensus policy was agreed to organize tax as follows, so long as other neighbouring states such as Germany are not ready to draw even. Hothouses are only charged with the electricity tax. As a countermove, these must undertake to increase their energy efficiency by 50 per cent between 1980 and 2000. This should prevent relocation of production facilities and job losses.

So as not to overburden lower income groups excessively, tax-free allowances of 800 kilowatt-hours and 800 cubic meters of gas were introduced, on which neither households nor companies needed to pay tax. In order not to tax bulk consumers too heavily (rather a permanent tendency in competition), at the beginning (i. e. actually between 1996 and 1998), quantities over 170,000 cubic meters of gas and 50,000 kilowatt-hours of electricity were also exempted from the tax. Other minor adjustments were also made. However, according to information from the Netherlands Finance Ministry, the complete gas and electricity consumption by households and about 95 per cent of the corresponding company consumption are affected by the tax. A drop of five per cent is expected in CO_2 emissions by the year 2000 because of the taxation on consumption.

In 1998, the government noticeably raised the tax-free limits on the basis of the third and final report of the eco-tax reform commission. The limits up to which electricity and gas are taxed were increased from 50,000 kWh of electricity to 10 million kWh and from 170,000 cbm of gas to 1 million cbm respectively.

Table 4: CO_2 tax rates for companies in Denmark,1996 and 2000 (DM/Gigajoule)*

Sectors	*Electricity*	*Light heating oil*	*Hard coal*
CO2 tax: 1996			
Energy intensive processes			
– Participation in energy auditing	0.21	0.06	0.07
– No participation	0.35	0.09	0.12
Other processes			
– Participation in energy auditing	3.47	0.92	1.19
– No participation	3.47	0.92	1.19
Space heating		3.71	
CO2 *tax: 2000*			
Energy intensive processes			
– Participation in energy auditing	0.21	0.06	0.07
– No participation	1.74	0.46	0.60
Other processes			
– Participation in energy auditing	4.72	1.26	1.62
– No participation	6.25	1.67	2.15
Space heating		11.12	

Source: Danish Ministry of Finance (1995, 13).
*The average SO_2 tax is already included in the figures.

Table 5: Regulatory Tax on Energy Ttax rRates in the Netherlands

Energy sources (in DM/GJ)	*1996*	*1997*	*1998*
Natural gas	0.85	1.71	2.54
Electricity	7.21	7.21	7.21
Light heating oil	0.08	0.17	0.25
LPG	0.64	1.28	1.92

Source: The Netherlands' Ministry of Housing, Spatial Planning and Environment 1996 (converted to DM/GJ)

The expected revenue of 2.1 billion NLG in 1998 was refunded in proportion to the revenue to households (less than 60 per cent) and companies (more than 40 per cent). For this purpose the income tax for households was changed at three points: (1) the entry tax rate was reduced by 0.6 per cent, (2) the tax-free subsistence level minimum was increased by 80 NLG and (3) tax allowances for senior citizens were increased by 1 per cent.

Furthermore, employers' social security contributions were decreased. Small companies are able to claim higher tax reliefs, and the corporation tax was reduced by three per cent over the first 100,000 NLG. Lastly, the regenerative energy source operator obtained a full refund, and is thus exempted from the tax. Over the next three years the Netherlands doubles the tax rates introduced between 1996 and 1998 again.

ANNEX II

Environmental Taxes in Central and Eastern Europe

The opportunities for a comprehensive introduction of eco-taxes (and economic instruments in general) in Central and Eastern Europe are unique for many reasons–quite apart from the reasons not yet adduced here, which also argue in favour of its introduction in the west:

(a) In the first place, the social and economic systems are in a radical state of change in any case towards a strong free enterprise system. It only depends on influencing the direction of this change towards a forward-looking society.

(b) In order to meet the requirements for entry into the Euro-

Table 6: Overview of some economic instruments in Central and Eastern European States

	B&*H*	*BUL*	*CRO*	*TR*	*EST*	*HUN*	*LAT*	*LIT*	*MAC*	*POL*	*ROM*	*SR*	*SLO*	*YUG*
Air emissions														
— Emissions tax				X	X		X	X		X		X		
— Residual pollution tax*		X	X	X	X	X	X	X		X	X	X		X
— CO_2 tax													X	
Water pollution														
— Sewage tax			X	X	X		X	X		X	X	X	X	X
— Residual pollution tax		X	X	X	X	X	X	X		X	X	X		X
— Sewage charges		X	X	X	X	X	X	X	X	X	X	X	X	X
Refuse														
— Communal refuse charges	X	X	X	X	X	X	X	X	X	?	X	X	X	X
— Refuse taxes				X	X		X			X		X		
— Residual pollution tax		X	X	X	X	X	X	X		X		X		X
— Deposit regulations for drink packaging	X		X	X	X	X		X		X	X	X		X
Refuse related product taxes														
— Fuels						X								
— Packaging material					X	X	X			X				
— Batteries/Accumulators						X	X							
— Refrigerators and coolants						X								
— Lubricating oils						X	X							
— Car tyres						X	X							
— Ozone damaging substances (CFCs etc.)												X		
— Mineral oils							X							

pean Union (the so-called "acquis communitaire"), many rules, laws and also tax regulations, such as minimum tax rates for several mineral oils, must be adopted.

(c) Achieving the Kyoto target also requires efforts from the joining countries that should be managed as cost-effectively as possible.

(d) The integration of ecological aspects into all other policy areas got a very high priority through the Amsterdam Agreement that came into force on 1 May 1999 and the last and next EU Summit, so that the joining countries must also be appropriately active in this matter, particularly if they hope to join that much sooner.

(e) With the environment policy based strongly on market economy instruments, there is an opportunity, on the one hand to go increasingly for dynamic incentive effects and with them more cost-efficient solutions and moreover speed up the conversion of the regulatory law. At the same time the integration of environmental aspects into other policy areas could be accelerated. This would, in particular, provide the opportunity not to repeat the errors in the west but to go instead as a priority for integrated environmental care instead of predominantly "end-of-the-pipe" technologies. Finally the structures for the next decades are being set up there, that will determine very decisively the production and consumer patterns and with them the environmental consumption.

(f) As a result the overall entry of the Central and Eastern

Table 6. (continued)

	B&H	*BUL*	*CRO*	*TR*	*EST*	*HUN*	*LAT*	*LIT*	*MAC*	*POL*	*ROM*	*SR*	*SLO*	*YUG*
Transport														
— Lower tax rates on lead-free petrol	X	X	X			X			X	X	X	X	?	
— Higher import duty on cars without catalyzers	X			?		X		X	X	X	X	?	?	
— Road tolls			X	X		X	X		X			X	X	?
— Noise/air pollution taxes in air traffic				X										
Nature conservation and biodiversity														
— Nature conservation residual pollution taxes		X	X		X	X		X		X		X		X
Natural resources and raw materials														
— Raw material taxes and transport charges			X	X	X	X	X	X		X				
— Water tax		?	X	X	X	X	X	X	X	X	X	X	X	X
Other														
— Income tax/VAT reduction for environmental technologies		?		X	X	X	?		X	X	X	X	?	X
— Reduced import duty on conservation technologies		X	X	?	X	?	?	?	X	?	X	?	?	?
Environmental funds [2]														
— at national level		X		X	X	X	X	X	X	X		X	X	X
— at regional level					X					X				
— at communal level		X						X		X				
— Funds for debt relief for nature conservation measures		X								X				

Source: Klarer (1999), author's translation.

Notes: B&H = Bosnia and Herzegovina; BUL = Bulgaria; CRO = Croatia; CR–Czech Republic; EST = Estonia; HUN = Hungary; LAT = Latvia; LIT = Lithuania; MAC–Former Yugoslav Republic of Macedonia; POL = Poland; ROM = Romania; SR = Slovak Republic; SLO = Slovenia; YUG–Federal Republic of Yugoslavia; ? = unclear if such instruments are in use at present. Comment: (i) Only those raw materials taxes and transport charges that have been introduced on environmental grounds, or whose revenue is spent at least in part for environmental purposes are listed. (ii) According to different classifications, environmental funds are viewed as environmental policy economic instruments and are therefore included here. (iii) Residual pollution tax means that only a part of the emissions that exceeds a specified limit is subject to tax.

European States into the EU be noticeably less expensive than earlier assessments assume. These are based on the acceptance of the assumption that the EU environmental policy in the fields of water, air and refuse, based in the main on the disposal of harmful substances. Costs would run to 120 billion DM on estimate. With their reduction, the costs for present and future Member States would fall, and with them the pressure on their public budgets.

(g) With entry into the EU, those countries that up to now to a great extent support very environmentally harmful industries and manufacture must drastically reduce subsidies, probably after periods of transition. This reduction is required on ecological, fiscal and legal competition and EU legal grounds, and can be accepted politically relatively easily by the entry process.

(h) Positive effects on employment can be assumed, not least because often old industries are kept alive by subsidy payments, their contributions to employment are low and will be even lower in future because of mostly declining importance. At the same time, funds will be freed up to offer tax relief to innovative companies.

(i) An EU consisting of 25 Member States is hardly governable

under the principle of consensus. It is therefore not improbable that a at least a qualified majority (3/4) will be agreed on. But then it will depend decisively on building up sufficient coalition partners for voting on eco and energy taxes. The Central and Eastern European states are absolutely predestined for this. However, the extension of the harmonization principle must first be agreed by consensus. And here there could be a high political price to pay (and that also probably means economic).

Expectations for a clearly stronger use of economic instruments in Central and Eastern European states are indeed high. When you look at table 6 below, it is evident that these will be fulfilled. However, various organizations leave a lot to be desired in terms of efficiency. Thus, on the one hand, not all markets are fully functioning, to allow the price signals to come into effect. Adequate privatization and deregulation is therefore prerequisite. At least the first step, that is to say the complete shifting of administrative costs onto prices has been taken in most countries. This is not always quite the case in the areas of energy and transport. Other important social and political constraints cannot be addressed at this point. Instead, an incomplete mention of some aspects must suffice. Environmental awareness, responsibility for the environment is the state's affair, lack of experience with a decentralization process, new institutions and responsibilities (Klarer and Moldan, 1997).

An internationally accepted approach for combating environmental problems was presented as part of an environmental action programme for Central and Eastern European states in Lucerne at the beginning of the 1990s, emphasizing the importance of economic instruments. The countries did indeed take in the message, but the focus of most eco-taxes is on clearly achieving the greatest possible revenue, that–often via environmental funds–can be used specifically for the environment. Table 6 gives an overview of the present application of economic instruments Central and Eastern European States.

The table shows that emission taxes and residual pollution taxes–most linked to limiting values set by law–come into use very frequently. Product taxes on the other hand are only used in isolated cases. The ratio of these types of taxes is reversed in the OECD. Moreover, the taxes in Central and Eastern European states mostly contain a large variety of harmful substances, which complicates their administration. They often still result from the start of their use in the 1970s and 1980s when efficiency was no criterion in the policy of a planned economy. On the whole, higher rates had the effect of drawing level with inflation. Eco-taxes served mainly to procure money for environmental measures. The associated subsidy payments were relatively effective. Residual pollution taxes, which should have resulted in limiting values being kept to, were in fact far too low to have the appropriate effect.

That is why there is a great potential for introducing eco-taxes that are independent of limiting values and that have a strongly incentive-oriented function. Considerably more use could be made of other economic instruments such as deposit regulations and emission certificates in addition to eco-taxes as part of an appropriate mixture of instruments. In the end, it is only in this way the "level of the playing field" can be changed. The entry into the EU aimed at by the Central and Eastern European states should, like the target of new initiatives from different sides, be used to integrate environmental policy with other policy areas, to make considerably greater use of economic instruments in the EU than before and thus reduce the estimated costs of entry.

An overview of the use of environmental taxes by accession candidates is described in more detail below. Environmental policy in the accession candidates is often underestimated. In a recent survey on 'Economic Instruments for Pollution Control and Natural Resources Management' the OECD OECD (1999b, 77) comes to the conclusion: "The accession countries apply environmental taxes and charges to a significant level. The Czech Republic and Poland appear to have full-grown charges-cum-subsidy schemes which play a structural part in bringing environment investments to substantially higher levels (in particular in the context of environmental funds). The number of pollutants in the charge schemes is larger than found on the average in the OECD countries. Hungary is operating many environmentally-related taxes." The following more detailed remarks are based on Peszko (1999, 127-141) and Klarer (1999, 202-216).

Emission charges and non-compliance fees are very extensively used in the accession candidates. In the past they often took the form of fees, non-compliance charges and fines and have been closely linked to environmental facility permits. The emission charges applied are mostly very comprehensive. Each charge covers as many as 200 pollutants, for example in the case of the Polish charges. Here, all emissions are subject to fees, and exceeding the maximum hourly emission rate set in the authorisation, if detected, is subject to fines, which are generally ten times higher than the corresponding fees (Pototschnig, 1996).

The extensive use of emission charges and non-compliance fees in Central and Eastern Europe originates in the 1970s and early 1980s. In the economic and institutional context of centrally planned economies, charges did not play an effective incentive role. The major function was to raise revenue into earmarked funds (national and local), because subsidies often constituted the only effective enforcement tool in the hand of environmental authorities at that time. After transformation started, it required political strength to defend and develop the charge level under new economic conditions.

Product charges are less often used, but they can be considered to be the emerging set of new instruments. Product charges are applied in Hungary, Latvia, Estonia and Slovakia, being most extensively used in Hungary where no emission charges are in force.

Since 1990 a number of product charges have been introduced in Hungary. First, in 1992, an environmental charge was levied on the sales of gasoline. According to the Hungarian Environmental Framework Act of 1995, the purpose of the existing levies is "de facto to create revenue for subsidies that can be used to lure polluters into compliance" (Lehoczki 1999, p.159). In 1995, after long negotiations, four new product charges were introduced. These charges are levied on the sales of tires, refrigerators, batteries and packaging materials. In addition, new or substantially revised natural resource access charges (rents on mining and water abstraction) were included in the system which includes the re-establishment of the Central Environmental Protection Fund as an extra-budgetary fund.

Although the Hungarian system is oriented to charges and subsidies, there are opportunities for an ecological tax reform. There are tax rates that could be considered as a burden for competitiveness and employment: the 25 per cent VAT rate is among the highest in Europe, the tax rate on marginal income is around 45 per cent and social contributions eat up more than 50 per cent of the gross wage. Considerations in connection with economic efficiency, OECD membership, EU accession and WTO negotiations are likely to require reduced taxation on labour. The budgetary deficit will nevertheless demand sufficient revenue for the state budget. This could create momentum to shift the tax burden on labour to the environment (Lehoczki 1999, p.160). In fact, the Hungarian government is currently considering intensively how to implement either an input or an output-based tax as part of an ecological tax reform.

The budget of Slovenia–taking also into account the expenditure side of it and thus applying a newly developed methodology–had shown a slight tendency towards a greener budget on the revenue side between 1992 and 1996 (Markovic-Hribernik/ Schlegelmilch 1999, p. 293). However, in 1997, this trend was offset. A CO_2 tax, introduced in 1997 (EUR 5.5/t CO_2) and tripled in 1998 (EUR 15.5/t CO_2), and the waste water charge, introduced in

September 1995, raise most of the revenues from 'bads', whereas smaller environmental taxes comprise a water charge and water concessions, a levy for the decommission of the Krsko nuclear power plant, a duty on the use of agricultural land, a car registration fee, a road tax, tolls and a 'gasoline tolar'. Revenues from the CO_2 tax alone, though levied only on some parts of energy consumption, amount to EUR 97.3 million which equals 2.1 per cent of the central government budget. Options for tax relief are provided if capital is spent for combating CO_2 emissions (Radej 1999). Tax relief led to investment which reduced CO_2 emissions in the amount of 1.4 million tons (0.09 per cent of Slovene total emissions). Slovenia used the opportunity to adapt its tax system to EU standards and increased the tax on electricity by 9 percentage points.

INCREASING THE ROLE OF ENVIRONMENTAL TAXES AND CHARGES AS A POLICY INSTRUMENT IN DEVELOPING COUNTRIES: SOME CONCEPTUAL CONSIDERATIONS

J.G. Backhaus*

EXECUTIVE SUMMARY

The judicious use of natural resources is a crucial prerequisite for sustainable growth not only in developed countries, but even more so in Sub-Saharan Africa and the Third World. More generally, to a substantial degree, natural resource use is determined by the tax structure governing a country's economic activity. When a tax system can be designed which stimulates the judicious use of natural resources, an important step towards achieving sustainable growth has been made. Designing such a constitution is not a simple task, however. For Third World countries, the task is further complicated by at least three factors. First, the tax system has to be exceedingly simple, since both the number and quality of tax instruments available to governments in developing countries tend to be limited. Second, the legal system tends to mirror the state of economic development. This limits not only the tax structure an economy can bear; it also limits a government's ability to regulate natural resource use by legal means. Third, the more elaborate a legal system, the more diversity it affords the country for economic activity, including opportunities for the division of labour.

The second section of the paper discusses the use of the environment and the natural resource endowment from the point of view of public finance theory. This point of departure is central, as it serves to identify the net product (le produit net) of economic activity after full consideration of the use of natural resources in the process of production. From this point of view, the question of what constitutes spillover effects or externalities in a market economy can be seen in the broad public finance perspective developed in the third section. The paper then discusses some standard problems in designing a tax constitution for a third world country. The fifth section of the paper explores possibilities for creating a framework in which the sustainable use of the natural resource endowment can take place. Central to the sustainable use is the notion that the environment has to be put to different uses, which raises the issue of the reversal of use dealt with in the sixth section. The possibilities of ensuring reversibility of the use of natural resources is discussed in the seventh section and a specific procedure is developed which is designed to ensure that reversibility of use can be achieved with simple administrative means, that is, means that are available to developing countries' governing authorities. Finally, the ninth and tenth sections deal with the issue of institution building. Clearly, the effective use of environmental taxes and charges as a policy instrument requires the availability of the institutions in which such policies can be conducted. Hence, the ninth section gives an overview of basic institutions of the market economy. The tenth section draws the implications for an effective use of environmental charges and taxes. The paper ends with some concluding observations.

* J. G. Backhaus is Professor of Economics, Maastricht University, The Netherlands.

INTRODUCTION

THE judicious use of natural resources (United Nations, 1997) is a crucial prerequisite for sustainable growth not only in developed countries, but even more so in sub-Saharan Africa and the Third World. More generally, to a substantial degree, natural resource use is determined by the tax structure governing a country's economic activity. When a tax constitution can be designed which stimulates the judicious use of natural resources, an important step towards achieving sustainable growth has been made. Designing such a constitution is not a simple task, however. For third world countries, the task is further complicated by at least three factors. On the one hand, the tax system has to be exceedingly simple, since both number and quality of tax instruments available to third world governments tend to be limited. Secondly, the legal system tends to mirror the state of economic development. This limits not only the tax structure an economy can bear; it also limits a government's ability to regulate natural resource use by legal means. Thirdly, the more elaborate a legal system, the more diversity it affords its country for economic activity, including opportunities for the division of labour.

In trying to develop a perspective for the design of a tax constitution which allows sustainable growth in a third world scenario, this essay tries to merge insights from three economic subdisciplines which tend to be taught separately: public finance, natural resource economics, and development economics. True to the general theme of this conference, the emphasis will be less on modern and primarily on classical authors, since these authors tended to emhasize the aspect of development in (public) finance.

This paper has nine sections, in addition to this introduction and the conclusion. The paper starts with the discussion of the use of the environment and the natural resource endowment from the point of view of public finance theory. This point of departure is central, as it serves to identify the net product (*le produit net*) of economic activity after full consideration of the use of natural resources in the process of production. From this point of view, the question of what constitutes spillover effects or externalities in a market economy can be seen in the broad public finance perspective. The paper then discusses some standard problems in designing a tax constitution for a third world country, and goes on to explore possibilities for creating a framework in which the sustainable use of the natural resource endowment can take place. Central to the sustainable use is the notion that the environment has to be put to different uses, which raises the issue of the reversal of use. The possibilities of ensuring reversibility of the use of natural resources is then discussed and a specific procedure is developed which is designed to ensure that reversibility of use can be achieved with simple administrative means, that is, means that are available to third world governing authorities. Finally, the last two sections deal with the issue of institution building. Clearly, the effective use of environmental taxes and charges as a policy instrument requires the availability of the institutions in which such policies can be conducted. Hence, the paper gives an overview of basic institutions of the market economy. The paper draws the implications for an effective use of environmental charges and taxes and ends with some concluding observations.

THE USE OF THE ENVIRONMENT IN PUBLIC FINANCE THEORY: ESTABLISHING THE NET PRODUCT

One of the central issues on which classical public finance theory has focussed is the correct establishment of the net product of a national (or for that matter local) economy. The difference between gross and net social product is the expense necessary to maintain the source of a particular revenue. Adam Smith (1970) states it aptly in chapter II of book II of his *Wealth of Nations*:

> "The gross revenue of all the inhabitants of a great country comprehends the whole annual produce of their land and labor; the net revenue, what remains free to them after deducting the expense of maintaining - first, their fixed, and, secondly, their circulating capital; or what, without encroaching upon their capital, they can place in their stock reserved for immediate consumption, or spend upon their subsistence, conveniencies, and amusements. Their real wealth, too, is in proportion, not to their gross, but to their net revenue."

The simple principle has many implications. One is that taxes can only be levied on (a part of) the net product, if we do not want to risk the availability of the revenue source altogether. Another is, that to the extent natural resources are used in the process of production, their maintenance has to be ensured as well by deducting the expenses to this end from the gross revenue of a particular economy. If these expenses for the maintenance of the endowment with natural resources of a country (a state, a city etc.) are not allowed for, changes in the composition of the capital stock will be taken for net income. The result is that more is spent than earned and the country (state, city, etc.) becomes poorer over time.

Although the principle is straightforward in its simplicity, its implementation is not. When the use of the environment occurs in the form of spillovers, it goes by unaccounted for. When implications of contractual transactions are latent or unforeseeable, they remain likewise unaccounted for. And when liabilities for damages cannot be attributed, the

damages remain where they happen to fall, causing changes in stocks when they should have caused changes in flows. The damages will take the form of windfall losses, unrelated to the economic actitivities and decisions which had caused them. This lack of accountability results in a welfare loss to society as a result of "normal" economic acitivity which may go largely unnoticed. The nature and extent of this welfare loss will be discussed in the next section.

WHAT CONSTITUTE SPILLOVER OR EXTERNAL EFFECTS?

In classical public finance theory, taxes have the single purpose of providing revenues for essential governmental expenditures. In modern public finance theory, however, in as much as it follows the Pigouvian tradition, taxes also serve as instruments to correct for market failures. The Pigouvian tradition in public finance represents a departure from classical public finance theory in more than one respect, however. In assigning a regulatory function to the instrument of taxation, Pigouvian taxes no longer conform to the canon of taxation. Secondly, the Pigouvian view implies certain assumptions about the role of governmental authorities in the economic process. The view constitutes a clear departure from the classical Scottish view of governmental restraint. It constitutes a departure from the classical continental view as well, which would have relied on government to correct for market failure either by means of governmental entrepreneurial activity or by using legal instruments. Thirdly, the focus on technical spillover effects, while correct in and by itself, de-emphasizes the question of why the legal order allows for some spillover effects to remain externalized, while others have to be compensated for and thereby will be internalized. This third aspect has important implications for the problem of designing a tax constitution for a third world development scenario,

The presence of externalities by necessity implies a less than judicious use of natural resources. Negative externalities signal an overuse of some input, typically a natural resource, relative to market valuation. In a third world context, when the range of available tax instruments is limited, the Pigouvian tax/subsidy approach to spillovers is less realistic than in developed economies. It is therefore sensible to focus on the more traditional approach to handling spillover activities: the design of a legal system able to cope with such external effects.

In principle, the market economy is supported by three primary legal institutions: private property, freedom of contract and liability. These three fundamental institutions tend to be hampered in their ineffectiveness when confronted with environmental spillovers or externalities such as (a) latent or unforeseeable consequences of contractual exchange or (b) cases of multiple causation in which liability by any one party cannot be established, if the damaging effect occurred only as several parties acted together without (c) necessarily being able to anticipate the results of this concurrence.

If this constellation is seen as typical for an intractable environmental spillover problem, one might be led to the conclusion that both the common law and the European continental civil law widely applicable in sub-Saharan Africa seem to be out of tune with some of the typical problems posed by the use of the environment. However, it would be premature to jump to the conclusion that regulative, administrative legal approaches under these circumstances deserve priority. Throughout the Middle Ages up until industrial times in Europe, the prudent and sustainable use of the environment was ensured by detailed regulation of the technologies that could be employed. Although it is this developed state of technology which creates new possibilities for sometimes serious environmental damage, regulating technology use can by itself cause at least equally serious environmental damage if it stifles the introduction of new technologies, some of which will burden the environment less than existing ones. Therefore, rather than emphasizing a shift of legal regimes such as leaving the domain of private law and moving into regulatory administrative law, or even a Pigouvian tax/subsidy regime requiring even further informational input, it is desirable to investigate the specific conditions under which a regime of private law can adequately handle the treble problem outlined above. When spillovers elude the demarcation of private property rights, when results of contractural transactions are latent or unforseeable and when causes of damage cannot be clearly attributed, we face the possibility that the problem may have become intractable because of its decomposition. This possibility will be further considered in the following paragraphs.

In principle, damages will be considered to be correctly assessed if they reflect the harm demonstrably suffered by an individual or a group of individuals. By necessity, the harm has been suffered in the past and may continue through the present into the future, while the damages are assessed retro-actively in order to restitute the victim(s). The rule of liability, although applied retro-actively, still has effects into the future, to the extent that it is expected to be enforced and therefore deters harmful activities. The prospective deterrence effect is the weaker; the weaker is the link between harmful activities and the assessment of damages for compensation. As we noted in the beginning, in the case of many environmental harms, this link is very weak indeed: it is weak when spillovers evade the rule of property, when the effects of contractual transactions are latent or cannot be foreseen, and when multiple causes make it impossible to establish

strict liability. As we take a dynamic perspective, the link becomes even weaker. In principle, a victim trying to recover damages not only has to prove the extent and cause of the harm, but above all he must have standing. Standing will in general be restricted to members of a particular jurisdiction and to presently living victims, typically cutting off trans-jurisdictional and intergenerational effects. Finally, the harm in general has to be directly suffered. Secondary effects, although not less important for an individual's net welfare, will not be considered. When due to heavy pollution the fruits of the garden taste unappealing, this will generally not constitute sufficient harm for a damage that can be recovered, nor the likely loss in the property value. When asbestos has to be removed from public buildings, the net public (tax/benefit) burden will have increased, yet a compensation will not be available.

The view grounded in the classical public finance tradition explained above yields a completely different picture. From the point of view of a public economy, be this a local, a state or a national economy, the overriding concern with a sustainable use of the environment is the need to keep natural resources intact for the use of future generations and to compensate for any encroachment upon the endowment of natural resources. Explicitly, this principle cannot imply a need to keep the entire endowment with natural resources in a pristine state. On the contrary, the establishment and performance of such institutions as the Kuwait Investment Office illustrates the principle: the extraction and sale of a natural resource (oil) and the re-investment of the proceeds in a widely spread portfolio of earning assets. If prudently managed, the capital stock of a country, of which the natural resources are a part, thus can be increased in its net present value. A harm is done to the economy if this stock is encroached upon and the depletion of one part of it is not offset by the increase in another. Likewise, harm is done to an economy if sustainability of the environment is meant to leave it untouched. Sustainable development has an economic, a socio-political and an environmental dimension. The sustainable and economically efficient use of all the natural resources of a community, including its environment, has to be handled according to the socio-political priorities and conditions prevailing there. At a minimum, any policy of a sustainable use of the natural resource endowment has to be equitable, which, again at a minimum, implies a policy that improves the life chances of the least advantaged (Rawls, 1971).

This broader perspective comprises essentially all the spillover effects discussed separately in the standard environmental economics literature, yet it takes a different approach to their measurement. Instead of trying to establish the technical effects of, for example, asbestos exposure on cancer in human males, the public finance approach emphasizes the overall financial impact of all conceivably damaging factors on the health state of the working population. Instead of following the chain of causes and effects through from their biological beginning to their financial result, the procedure is reversed. Starting from the revenue sources of a public economy, the principle is to keep these revenue sources intact for the long term. In the example of asbestos, the health state of the working population is the relevant point of departure, since it is part of the endowment with factors of production at the disposal of the public economy. The impact of the various factors on cancer, such as diets, tobacco use, exposure to infections, reproductive and sexual behavior or exposure to occupational hazards to name some of the most important factors determining the health state of the working population with respect to cancer — needs to be assessed and measures have to be designed to keep the revenue source intact. In this particular example, the asbestos problem will be addressed in the context of other occupational hazards, of which it is a part. Instead of linking individual asbestos cases with the producers of asbestos, the entire pool of asbestos cases as part of the entire pool of workers exposed to hazardous materials is linked with the producers of the hazardous materials. This approach does not always assign environmental issues highest priority; the particular order given here indicates that as far as cancer is concerned, reasons other than occupational hazards may have to be addressed with higher priority (Doll and Peto, 1981). The important lesson to be learned from this example is, however, not that environmental issues may not be important after all. The lesson is rather that the different sources of environmental damages have to be grouped together in terms of their combined impact on the revenue base of the particular economy in question, in order to allow for their full assessment. Only once they have been fully accounted for can policies be designed to prevent the depletion of the resource base of an economy.

This principle, again, begs the question of its implementation. Implementation in a third world context requires special attention to the specific conditions of developmental public finance. This is the subject of the following section.

PUBLIC FINANCE AND ECONOMIC DEVELOPMENT

Classical public finance as a separate subdiscipline of economics has its roots in the challenge posed by the disastrous experience of the Thirty Years War in Central Europe. Faced with the urgent need of developing their devastated and depopulated countries, European statesmen on the continent turned to their closest advisers, the cameralists, to design state measures in order to stimulate economic growth. In response, a

voluminous literature developed and formed the basis for classical continental public finance theory.[1] Traditionally then, economic development has been a main focus of public finance theory (Backhaus and Wagner, 1987). A main focus of developmental finance is by necessity on capital formation. Capital formation has to be understood broadly as including all measures of a productivity increasing nature. In order to accomplish this task, state authorities have to create a climate which is conducive to investment. This includes not only the material infrastructure, but also includes the immaterial infrastructure, a predictable and reliable legal order, a clean and efficient civil service and the assured prospect that investments today will actually pay off in the future. While these positive incentives for capital formation provide a substantial agenda for government, disincentives for consumptions (as the reverse program) are more difficult to handle. On the one hand, the tax effort of a developing country has to be much smaller than that of a developed country, since a much larger portion of the disposable income is needed for human reproduction. Only luxury consumption is conceivably amenable to taxation, although the limits have to be drawn sharply here as well, since too heavy a tax burden would create a disincentive for investment. In purely administrative terms, taxation is difficult when taxable entities are small, the activities unstable and the bookkeeping absent. As a matter of principle, parsimony with respect to tax instruments is a prerequisite for prudent developmental finance.

One area of taxation which is fairly insignificant in developed countries stands out as feasile in developing economies: the taxation of natural resources. In this respect, however, care has to be taken. There is general agreement in the literature that with respect to land taxation, the instrument has to be handled prudently. Musgrave and Musgrave (1989, 595) write: "Effective land taxation is difficult when food is home consumed, the agricultural sector is largely nonmonetised, and land surveys are inadequate in providing proper valuations". In addition, land taxes, as every other form of taxation, in order to be effective, have to be levied in line with received customs and convictions prevalent in that particular society. On the whole, there seems to be a consensus in the literature that with respect to land taxation, potential rather than actual income from land should be subject to taxation (Musgrave and Musgrave, 1989, 599). Obviously, and in line with the preceeding analysis, only the potential net product of land can be subject to taxation. Furthermore the term "land" should be regarded as a shorthand for all natural resources available for production.

On the basis of this short summary of principles of developmental finance on the background of received principles of classical public finance, we may now turn to the issue of creating a framework for the sustainable use of the environment.

CREATING A FRAMEWORK FOR THE SUSTAINABLE USE OF THE ENVIRONMENT

In doing so, another short digression into the history of economic thought is necessary, since such a framework has originally been proposed by Henry George.

Henry George (1839-97) was a self-taught American economist and political writer whose name is commonly associated with the notion of a Single Tax on land. George had worked as a sailor, printer and newspaperman when he became fascinated with the rapid and uneven development of California and began to probe the economic causes determining the price of land. This investigation he undertook in order to solve "the great enigma of our times", which he held to be "the association of poverty with progress" (George, 1979, 10). His insights he systematically developed in his *Progress and Poverty*, first published in 1879.[2] The book began to receive wider attention in Britain in connection with the Irish question and later made George famous in his own country, too. He spent the last part of his life as a public speaker at home and abroad, and it was George himself who made the Single Tax proposal a political issue in his (unsuccessful) bids for the mayoralty of New York first in 1886 and again in 1897.

His place in the history of economic analysis is aptly sketched by Joseph Alois Schumpeter (1954, 865) who writes:

[1] For a fuller account see Backhaus and Wagner (1987).

[2] Progress and Poverty was first published by D. Appleton & Co. in New York in January, 1880. However, in his preface, George refers to the November 1890 edition already as the fourth. His account of the editorial history is as follows: "This work was written between August, 1877, and March, 1879, and the plates finished by September of that year. Since that time, new illustrations have been given of the correctness of the views herein indicated [...]. But there has been nothing in the criticisms they have received to induce the change or modification of these views - in fact, I have yet to see an objection not answered in advance in the book itself. And except that some verbal errors have been corrected and a preface added, this edition is the same as previous ones." (1979, xxx). A twenty-fifth anniversary edition with a preface by Henry George jr. was published in 1905. The son explains that the publisher had insisted on George bearing the cost of making the plates, which

> "The points about him that are relevant for a history of analysis are these. He was a self-taught economist, but he was an economist. He acquired most of the knowledge and of the ability to handle an economic argument that he could have acquired by academic training as it then was. In that he differed to his advantage from most men who proffered panaceas. Barring his panacea (the Single Tax) and the phraseology connected with it, he was a very orthodox economist and extremely conservative as to methods. They were those of the English 'classics', A. Smith being his particular favourite. [...] Even the panacea - nationalization not of land but of the rent of land by a confiscatory tax - benefitted by his competence as an economist, for he was careful to frame his 'remedy' in such a manner as to cause the minimum injury to the efficiency of the private-enterprise economy. [...] The proposal itself [...] is not economically unsound, except in that it involves an unwarranted optimism concerning the yield of such a tax. In any case, it should not be put down as nonsense. If Ricardo's vision of economic development had been correct, it would even have been obvious wisdom."

Schumpeter was correct in characterizing George's economic methods as conventional. Yet *Progress and Poverty* is not mainly a work of economic analysis, but a decidedly unorthodox and non-conservative social reformer's treatise. The book was written in order to provide the answer to a practical question of economic policy: How can we design an institutional order in which economic progress goes hand in hand with a reduction of poverty? This sounds almost like a paraphrase of the problem posed in the title of this essay. Schumpeter, like many other critics of George, probably was incorrect in casually dismissing George's assertion about the practical possibilities of George's tax constitution from the standpoint of revenue yield. George may very well have been justified in his optimistic estimate of the yield of his Single Tax. This tax is a far cry from the real estate taxes a superficial reader may associate with the term "tax on land". Rather, as I try to explain on the following pages, George presents us with a comprehensive package of an environmental tax reform which, politically, has teeth. The program is, in fact, a tax constitution so comprehensive and far-reaching that no attribute could be more misleading than the term "conservative".

As this author reads *Progress and Poverty*, George comes across as a scholar in the best tradition of political economy. His analysis is motivated by a clearly defined social policy problem. George analyzes a problem in order to solve it. He succeeded in designing a solution - his "remedy" - which relies on an institutional reform, that is, George understood the interdependence between economic processes and the institutional order in which they take place. Finally, George went about his analysis in what today would be described as an inter-disciplinary approach, that is, the questions he would consider were forced upon him by the subject matter under consideration and not by some disciplinary boundaries as they might have developed over time. When, for example, he looks at the effects of his "remedy", he takes them up in this order: effects on (1) production, (2) distribution, (3) individuals and classes, and (4) social organization and social life (George, 1979, IX).

The shortest book in *Progress and Poverty*, and at the same time the most important, is book VI in which George spells out his program. The central chapter, entitled "The True Remedy" barely covers two printed pages, and the solution itself is stated in just one sentence: "We must make land common property" (George, 1979, 328).

The explosive potential of his program is wrapped into this rather innocuous sentence. The true extent of the proposal can be discerned by looking at the implementation rule and his concept of land. The implementation rule is stated in equally concise terms: "It is not necessary to confiscate land, it is only necessary to confiscate rent" (George, 1979, 405). Finally, there is an underlying principle also worth reporting: "What is necessary for the use of land is not its private ownership, but the security of improvements" (George, 1979, 398). This quote also points to Henry George's differentiation between improved and unimproved natural resources and the idea of the unearned improvement. The unearned improvement today turns out to be a hindrance to improvements tomorrow, since the possibility of gaining unearned improvements diverts energies from the very process of improving upon natural resources. In contemporary language, one might say that George tried to prevent wasteful rent-seeking activities by insisting on the principle that the benefits from improvements should accrue to whoever made the improvements, whereas unclaimable externalities belong to the common domain.

The purpose of the entire reform program, according to this principle, is to encourage the use of land by designing a structure of property rights which allows individuals to reap the benefits of their labor, namely, the 'improvements' without barring the use of common property resources by others. His definition of 'land', as spelled out in a chapter appropriately entitled "The Meaning of the

George did in the shop of a friend in San Francisco. There, "an 'Author's Proof Edition' of five hundred copies was struck off" (1979: xxiii). A centenary edition prefaced by his grandaughter, Agnes George de Mille, appeared in 1979 in New York, published by the Robert Schalkenbach Foundation. This 1979 edition contains the aforementioned prefaces as well as an extensive index and a glossary of terms. In conclusion, the first edition was San Francisco 1879, the first published edition New York 1880, and the final authorized edition with any changes New York 1890 (4).

Terms" (George, 1979, I 2) is not confined to the surface of the earth. His is an analytical definition based on the concept of factors of production. There are in George's model two original factors of production, called 'labor' and 'land'. 'Capital' is a secondary or derived factor of production, comprising only things "which have resulted from the union of these two original factors of production" (George, 1979, 39). Since 'labor' is defined in a more standard way as "all human exertion", including, by the way, 'human capital', because "human powers, whether natural or acquired can never be classed as capital" (George, 1979, 39); this leaves land as the all encompassing category of those original means of production which are not labor. In short, 'land' stands for the endowment of natural resources.

Characteristically, George (1979, 38-39) defines land both analytically and by giving a sequence of examples illustrating the basic, comprehensive concept:

> "The term land necessarily includes, not merely the surface of the earth as distinguished from the water and the air, but the whole material universe outside of man himself, for it is only by having access to land, from which his very body is drawn, that man can come in contact with or use nature. The term land embraces, in short, all natural materials, forces, and opportunities, and, therefore, nothing that is freely supplied by nature can be properly classed as capital. A fertile field, a rich vein of ore, a falling stream which supplies power, may give to the possessor advantages equivalent to the possession of capital, but to class such things as capital would be to put an end to the distinction between land and capital, and, so far as they relate to each other, to make the two terms meaningless."

It is obvious that, commensurate with technical progress, the window of opportunities granted by nature is pushed ever more open, and in this way the Georgian term 'land' assumes an ever more encompassing meaning. Simultaneously, the tax base of the State entrusted with the power of the Single Tax on the rent of natural resources is also broadening in pace with technical progress. While George defines 'land' in exactly the same way as we define natural resources today, George differs from most present-day proponents of environmental tax reform by wishing to encourage the prudent use of natural resources, whereas the standard approach today is to design schemes seeking restriction of such use.

The twin objective to open access to the use of all opportunities provided by the natural environment while, at the same time, granting full security of all improvements made upon the resource as found in the state of nature requires a partitioning of property rights along this distinction. This partitioning[3] must have struck many of George's contemporaries as unusual or artificial. But, as he tries to show in his long survey of "Property in Land Historically Considered" (George, 1979, VII 4), the partitioning should not be considered that unusual after all. You don't saw a ship in half if it is owned by two men, is his common sense comment.[4] The partitioning of property rights is effected through the instruments provided by the modern tax state. Owners retain their property titles, but these titles are re-interpreted as designating the accumulated improvements, while the entire land rent remains in the common property of the state. The tax state, in this way, becomes a partner in the development of the land (country), a residual claimant of all the external benefits not appropriated by the individual owners.

Since this point is very important for understanding the dynamics of the Georgian scheme, let us look at his own statement:

> "Every productive enterprise, besides its returns to those who undertake it, yields collateral advantages to others. If a man plant[s] a fruit tree, his gain is that he gathers the fruit in its time and season. But in addition to his gain, there is a gain to the whole community. Others than the owner are benefitted by the increased supply of fruit; the birds which it shelters by far and wide; the rain which it helps to attract falls not alone on his field; and, even to the eye which rests upon it from a distance, it brings a sense of beauty" (George, 1979, 435).

Assigning the unappropriable positive externalities of production to the State implies that George's concept of common property in natural resources actually goes beyond the original state of nature. It likewise includes the accumulated externalities or, put in more accessible terms, the cultural heritage of a country, its vegetation, climate, architecture and landscape, and so on. And, by virtue of the tax scheme, this cultural heritage also forms the tax base which the state is expected to foster.

"Nature laughs at a miser" (George, 1979, 436), Henry George tells us in characteristic prose, and he certainly laughs at too parsimonious a use of the natural endowment. Not only is the tax scheme designed to minimize disincentives (George, 1979, IX 1); stronger still, it coerces people into either making productive use of the resources they possess or else relinquish them: "If land were taxed to anything near its rental value, no one could afford to hold land that he was not using" (George, 1979, 413).

This growth oriented fiscal constitution, however,

[3] For a modern statement see Furubotn (1979).

[4] A reader has pointed to the difficulty of measuring what part of the "unearned" increment is due to nature, what part due to society, and what part due to entrepreneurship or effort. The late Dr. Krabbe and I have dealt with this issue elsewhere and at length. (Backhaus and Krabbe, 1990).

has a clever check on public sector growth built into it. It is here where the seemingly ideological and often misunderstood insistence on the Single Tax assumes importance. This feature of the Georgian proposal has always bewildered so many commentators, including the public finance expert[5] Schumpeter. The explanation lies in the systematic unity of George's proposal. George suggested a tax constitution wich defines incentives faced by the tax collecting authorities. George wanted to foster progress by using the power to tax in a very specific way, but he was also suspicious of government bureaucracies (George, 1979, VIII 3). By designating a broad tax base but limiting the power to tax to just one tax, the up to 100 per cent tax on the rent of natural resources, he hoped to find the proper balance. On the one hand, the Georgian tax constitution creates incentives for those in public office to support equitable economic development, which flushes ever increasing tax revenues into public coffers. The State can grow unimpeded by any pre-conceived restrictions, as long as this public sector growth is financed from the increasing rental value of natural resources. On the other hand, as soon as the value of these rents stagnates or even declines, the state has to curtail its own expenditures. By virtue of the Single Tax constitution[6], the State is harnessed into prudent, long term natural resource use, just as the private sector is co-erced into attaining the production possibility frontier. Built into George's reform is a 'tax constitution for Leviathan', to use Buchanan's term, a public choice approach *avant-la-lettre*. In one respect, however, George's tax constitution is different from the typical Leviathan tax constitutions which we owe to the modern public choice school. The limits on the size of the state budget are not predetermined, but determined according to the tasks the state may face. For instance, as natural resource use creates negative externalities, to the same extent it also increases the claim of the state on financial resources to mitigate these effects. On the other hand, if nature is left in a pristine state, the state's claim on financial resources is very limited indeed; but so are the state's tasks in such an economy.

Even more surprisingly, this growth-oriented tax constitution clearly deserves the label "environmental" due to its built-in dynamic structure. By an "environmental" or "ecological" tax scheme one understands a fiscal constitution which induces economic agents to make optimal use of the environmental resources, neither squandering nor oversparing them. This is precisely what the Georgian system is designed to accomplish. The clue to the conservational feature of the Georgian tax constitution, again, lies in the partitioning of property into (internalizable) improvements (private ownership) and the rent of the resource as such (public ownership). The size of this rent is a positive function of the state of economic development of the surrounding economy and a negative function of the exhaustion of the natural resource.

Obviously[7], the rent on resource use is paid exclusively for the use of the natural endowment and not for its abuse. Depletion of a natural resource requires an additional compensation owed to the community which, in the Georgian model, is represented by the Tax State. The State is thereby entitled to two streams of revenues, namely, the rent collected from the use of its natural resources and, more generally, the environment; and the compensations for the abuse of those resources. Clearly, George was not a strict conservationist in the sense of sparing nature from any form of depletion. He wanted the ore to be mined and not to be left in the ground (George, 1979, 38). Yet, at the same time, he wanted the community to extract a fair compensation for this impairment. While the guarantee of improvements is the core of the State guarantee of private property rights, impairments of common property resources require a compensation. The State

[5] This attribute might surprise the American reader. Yet, before coming to the United States, Schumpeter had distinguished himself in public finance. Schumpeter not only served as the first Secretary of the Treasury in the Austrian Republic precisely because he was considered a public finance expert; in this capacity he drafted a stabilization plan which could not come to fruition for reasons unrelated to the budget. He also held the chairs in public finance at the universities of Graz and Bonn. He did not receive a chair at the University of Berlin to which he had aspired, because the faculty felt that they did not need another public finance expert (next to Popitz).

[6] This modern language should not lead the reader to suspect that the single tax might be without problems. It is conceivable that the single tax might not be Pareto optimal, notably because of effects on the timing of development. But one should keep in mind that George was making a contribution to economic policy, and not to the theory of optimal taxation. Even in the case of suboptimality just mentioned, one has to keep in mind that these cases require resort to second best analysis, and that it is by no means inconceivable that the least distorting tax regime in the world of second best remains the single tax.

[7] The following paragrpahs are not literally grounded in Henry George's *Progress and Poverty*; they rather follow directly from his definition of land as including all natural resources and his definition of improvements. But he did not himself spell out these implications, nor did he spell out details of the requisite implementation rule.

thereby can plan the inter-temporal use of the natural resource endowment in the interest of overall fiscal concerns. We can conclude that George is fully in line with the classical principle of conserving the value of the natural resource endowment spelled out above.

The operational coherence and conclusivity of the abuse correction mechanism, of course, needs to be spelled out in institutional detail. Much will depend on the particular tax administration a country has set up. Such an administration would have to be backed by a system of tax courts in such matters as when judgement is required as to when an action constitutes an abuse or not.[8] Yet the principle is simple enough to be of use even in the third world case of minimal administrative facilities.

REVERSAL OF USE

This inter-temporal dimension embedded into Henry George's tax constitution assumes additional importance when we consider the change or reversal of uses environmental resources may be put to. Keeping the door to change and, notably, changes in resource use wide open is vital for preventing the rise and persistence of monopolies, including the state monopolies characteristic of many third world countries. The Georgian scheme, of course, requires that every resource be put to its most productive use. Again, the dynamic adjustment process is carefully conceived. The most productive use determines the rent of the resource, irrespective of whether the owner operates at the production possibility frontier or not. The automatic adjustment of rents, as a consequence of technical progress, constantly pushes economic agents to make the most judicious use of environmental resources. This implies that the Georgian system actually encourages the reversal and change of production methods involving natural resources. Unlike the present system of private property in land (George, 1979, VII 5), the scheme does not favor the first user at all, since a more valuable use makes it too expensive to continue the first use. The opportunity costs of natural resource use, by virtue of the land rent tax, enter into the present user's cost function.

Reversal of use can be more vexing a problem if natural resources are irretrievably devoted to some production (or consumption) process. The safeguard provided by the Georgian system is not a perfect one, since George opposed the conservation of natural resources for their own sake. Yet, George provided for two checks. The irreversable use of an environmental resource is checked on the one hand by the compensation payment required for abuse. The amount of this payment, in turn, will increase with the introduction of competing, more valuable uses as a consequence of technical progress. The second check lies in the communal nature of environmental resources. Since the environment is in the common property, that is, in the State domain, a political decision can override private commercial concerns. The political decision will be informed, above all, by the revenue consequences for the Single Tax State, a State which George has placed in the position of guardian of the environment in order to ensure its own fiscal survival.

Having explored George's tax constitution, we can finally integrate his contribution into the solution to our question.

ENSURING REVERSAL USE FOR SUSTAINABLE DEVELOPMENT

Ensuring reversability of resource use is again above all a matter of constitutional design. A political institution has to be found which is closely associated with the particular natural resource in question. Very often, the political boundaries co-incide poorly with natural environments. The case of the pollution of the river Rhine, the North Sea or the Baltic Sea point to vivid examples. But the same case of the Rhine also points to viable legal solutions. Since 1919, shipping on the Rhine is an international affair. The Rhine flows through the Lake of Constance, which is a condominium or jointly held property of Austria, Switzerland, and the two German states of Bavaria and Baden-Württemberg. However, both the Rhine and the Lake of Constance still lack their own legal identity which would make it possible to make a prudent and sustainable use of the natural resource in question. As we move down from the international to national and local jurisdictions, the problem becomes less and less intricate. A particular city, for example, has its clearly circumscribed original endowment of resources of which its inhabitants and its politicians tend to be quite aware. The country we are currently meeting in, Kenya, underscores the extent to which pristine wilderness made accessible is part of the natural resource endowment, as is the architectural and cultural heritage as part of the natural resource endowment we are elsewhere confronted with in Africa, which implies that the ancient architectural treasures have to be counted as belonging to the capital stock which to maintain is the purpose of the entire Georgian proposal.

[8] For the United States, one can start thinking about such procedures by looking at the reclamation of land used for surface strip mining. See United States Surface Mining Control and Reclamation Act of 1977, (P.L. 95-87). This law calls for bonding and specifies landscape contours, vegetation, etc. For Germany, an actionable procedure has been described in Backhaus (1988).

The first step in constitutional design then is to identify the correct political jurisdiction to which a particular natural or cultural resource belongs.[9] This is done by making an inventory of the natural resources and their use in a particular country, state or city, and in cases of dispute assign the rights of use accordingly to the different public bodies in question. The licence to operate a business next to a National Park obviously carries a different rental value from one to operate in a more prosaic environment. Once the inventory has been arrived at and the uses established, the third step is to estimate the benefit levels associated with the uses acruing to the public authority in question. In the original Georgian proposal, these benefits are handled in terms of tax revenues exclusively. In terms of post-Keynesian public finance, this would be an unrealistic approach. Even local governments, and much more so state and federal or national governments have more than revenue seeking objectives. In the simplest of cases, we can postulate that governments will be interested in revenues and jobs. Very often, one translates into the other, at least in the mind of the treasurer who knows how much is needed in subsidies in order to attract additional employment.[10] These objectives have to be combined into a particular index, which can be a given sum expressing, for example, units of employment equivalents in monetary terms. The intensity of environmental use is then correlated with the current performance of the user of the environmental resource in terms of this monetary equivalent. We can, for example, determine how many employment equivalents a business next to a National Park or a romantic bridge over a river generates. Each resource use next to this location has to be assessed such a monetary equivalent. This is the rent to be collected from the resource user. If a business with heavy resource use generates comparatively low revenues or comparatively little employment, there is a strong incentive for it to move to a less desirable location and give way to a more productive resource use in terms of the policy objectives expressed in the monetary equivalents.

This system creates dynamic pressure by itself; yet the tax instrument can be combined with the typical licensing instrument used in traditional environmental regulation by again assigning monetary equivalents to the exercise of a license granted. In order to avoid grandfathering of resource use which typically is at the source of environmental waste, the successful new applicant has to prove that his intended resource use will yield a higher number of monetary equivalents than the present resource use. If the new licence is to be granted, the current licence holder has to be given adequate notice that the licence will be revoked unless he can improve his own performance up to the standard of the new intended use. At this juncture, there is an important role for either a developmental agency or an insurance company to play.

The authorities of any country or city, but even more so the authorities of a third world country or city face enormous difficulties in assessing the reliability and trustworthiness of different applicants. A country or city revoking one licence in order to grant it to another user, for reasons of credibility and for reasons of sound fiscal budgeting has to be assured that the new licence will actually produce a higher yield than the old one. Therefore, one viable strategy might be to insist that a bid for relicencing can only be successful if the performance of the applicant has been insured for the duration of the licence applied for by either a private insurance company or some publicly backed developmental agency. Preventing imprudent or uncareful use of environmental resources by way of this procedure becomes a prime objective of the insurance company or developmental agency involved in writing insurance for these applications.

The infinitely more complicated issue of use reversal, again, cannot be handled without introducing an insurance solution. A basic distinction has to be made between current uses of the environment and new applications for environmental resource use. Current uses have to be dealt with in terms of creating the pre-conditions necessary for the reversal of use over a period of time. New applications can be dealt with in stricter terms. After a period of transition from one regime to the other, both forms of resource use, traditional and new ones

[9] This insight is by no means original with me. See Webb and Webb (1920).

[10] A typical example, in this case taken from the First World, may illustrate the point. According to the Wall Street Journal's Asra Q. Nomani, Minnesota Gov. Arne Carlson signed a bill that gives NWA Inc.'s Northwest Airlines $740 million in financial assistance, including $320 million of direct loans for the carrier's operations. In addition, Minnesota lawmakers voted an estimated $40 million in tax incentives to entice Northwest to build two maintenance facilities in the state, expected to employ 2,000 new workers. $320 million of direct loans (part of the $740 million financial assistance package) will be used to accelerate options on new jets made by Airbus Industrie, a European consortium. (*The Wall Street Journal Europe*, Monday June 3, 1991, 4). By implication, the state of Minnesota values an additional maintenance job at the facility at $20,000 in direct tax incentives and an additional $370,000 in financial assistance. The second figure also reflects the state's desire to prevent the loss of jobs in the state that might occur if Northwest Airlines had to follow the example of Eastern Airlines. Such assistance packages are by no means unique to the state of Minnesota. Many similar examples could be quoted involving similar figures.

have to be treated on an equal basis in order to avoid undue grandfathering. Again, international developmental agencies or insurance companies can play an important role.

SKETCH OF A PROCEDURE

New applications are relatively simpler than the continuation of old uses. Consider the application for establishing an airport. In terms of the scheme outlined above, the application will indicate the number of monetary job equivalents expected to be generated by the airport. A certain amount of land will have to be claimed, and if for converting it to the airport use it need be covered with concrete; original natural environments will thereby be destroyed. The application also states the expected costs of reconverting the airport to its original state, with the cost estimates being based on bids by qualified bidders to carry out the work. The bids have to be insured or guaranteed and are thereby rendered qualified. The insurer or guarantor thereby assumes responsibility for the accuracy of the bids. The application further includes notice of insurance of the proposed number of monetary job equivalents effective upon granting the licence. This insurance policy covers the revenue base for the jurisdiction in charge of issuing the licence. Should the airport venture fail to generate the expected benefit in either revenues or employment opportunities, reversal of use is ensured and can be carried out after the proper notice has been given.

As far as traditional uses are concerned, the difficulty is to establish to what state the used natural resources would have to be reverted. That state of nature has to be described in a proper zoning decision, whereupon granting of the licence can be effected in the same way as described beforehand, involving again two insurance contracts. The basic rationale of this procedure is not dissimilar to current American practice. The novel aspect consists in the heavy use of insurance or guaranteeing relationships in order to contain the risk of damaging the environment by making improper licencing decisions. The sustainable use of environmental resources is made difficult by the presence of risk and uncertainty about the consequences of decisions separately but simultaneously taken by different actors. Without amendment, the private law system based on private property, freedom of contract and individual liability cannot effectively deal with environmental spillovers, latent or unpredictable consequences of contractual exchange and high transactions costs in attributing causes to effects, in particular if multiple causes bring about effects only when individual actors take their decisions separately but simultaneously.

BASIC INSTITUTIONS OF THE MARKET ECONOMY

The division of labour is limited by the extent of the market. This basic dictum sharply expressed by Adam Smith focuses our attention on those factors which are responsible for limiting the extent of the market, thereby limiting depth and breadth of the division of labour in the economy and, by implication, the creation of wealth.

One can identify eight basic institutions which must be present and workable in order for any market economy to function well, irrespective of the specific style of that economy. Hence, these institutions must be present in an unfettered free market economy, in a socialist market economy, in a co-operative market economy, in a market economy with syndicalist elements or variously in one with strong state market participation. All these forms — and many more — are potentially feasible, provided these basic institutions are firmly in place and can fulfil their functions well.

If these institutions are weakened and impaired, such as when property rights are being diluted, this market will work with high transaction costs and only to the extent that the gains from market exchange outweigh those transaction costs.

Basic Rights

Freedom of contract

From an economic point of view, freedom of contract is an important guarantee because it ensures as a necessary condition that all the information available in a society enters economically relevant decisions and all the resources available in a society will be put to their most efficient use. This implies that every infringement of freedom of contract has to be judged in terms of the losses imposed on society due to ignorance and wasted resources. From an economic point of view, it is not sufficient to weigh freedom of contract against some other guarantee such as the principle of equality as such, without paying attention to the full consequences of the trade-off. If for instance it is observed that in a certain society members of a minority are not represented in a particular profession according to their numeric share in that society, from an economic point of view it is not justified to pit the observed end-state inequality against the guarantee of freedom of contract, since a rational choice in the interest of all parties concerned may have led to the unequal outcome. An economic analysis would have to inquire into the reasons for the observed inequality, and it would lay the foundation for assessing the trade-off between the social (opportunity) costs of constraining freedom of contract on the one hand, and the gains in terms of

economic equality on the other. Based on the inquiry into the causes of the observed inequalities, an alternative strategy to improve the chances of the minority in question can in all likelihood be derived. It is at this instance that the economic analysis of constitutional guarantees can have implications for constitutional law. Many constitutions require that basic rights can only be curtailed if less onerous measures are not available. To the extent that economic analysis can yield the design of such less onerous measures, it changes the constitutionality of particular policies.

Private property

The guarantee of private property is often thought to be the most important with respect to the means of production. Again, from an economic point of view, the guarantee goes far beyond the protection of people's possessions of goods and services. The reason for this wider scope is fairly straightforward. In economics, property rights define and circumscribe alternatives for meaningful actions. Hence, the mere property title to some commodity, such as land, is meaningless if it does not imply discretionary alternatives and options that can be exercised.

In particular, the guarantee of private property rights implies the right to exercise private property prerogatives within workable institutions. The guarantee is violated if, for instance, the contractual forms in which a property right can be exercised are unworkable or impractical, thereby destroying the value of the property right or seriously reducing it. The institutions in which private property rights can be exercised have to provide for the possibility that the four standard options of economic conduct[11] remain open. These options include:

- exit, the right to end an economic relationship;
- voice, the option to meaningfully improve upon a relationship by changing it through negotiations;
- loyalty, the ability to foster the growth of trust and goodwill in a relationship even in the face of serious problems, and
- avoidance, the option to ignore a particular relationship altogether without facing sanctions.

Liability

The two basic rights of freedom of contract and private property need to be complemented by the institution of liability in order to be meaningful at all. The faithful observance of contractual terms requires the protection of a shield of liability for failure of living up to contractual terms just as much as the respective private property rights require the need to make the intruder liable. Although this principle is straightforward, from an economic point of view the implications can be far reaching. In particular, liability can only be assigned if the agent to be held liable was indeed in control of events that led to the liability. If this is not the case, the claim has to be followed through all the way to those who were either in control or created the situation that made control impossible. If for instance a patient suffers a serious injury because a doctor did not administer the necessary treatment, which he failed to do because, in order to administer the treatment, according to state regulations he needed the written consent of two colleagues whom he could not reach because they were tied up in meetings, this doctor is not liable for the injury imposed on the patient; nor is the full damage to remain with the patient; rather, the principle of synchronizing control and liability requires to make those jointly and severally liable who contributed to passing the regulations causing the problem — tying up doctors in meetings and requiring written consent to engage in professional activities — in the first place.

Stable legal environment

The following three basic guarantees are more or less ancillary to the first three, the classical threesome of economic basic rights. Constancy and predictability of economic policy is required in order to be able to enter contracts covering not only the present but also the future. The same is true with respect to the exercise of property rights with consequences in the future, notably investment decisions. For private property rights, however, the predictability of economic policy, is crucial because it affects the adjustment costs necessarily borne by the private sector and falling onto property, conceivably reducing its value. This requirement does not affect the range and domain of economic policy, but only the time horizon within which it can be carried out. The more predictable economic policies are, the smaller the adjustment costs. The corollary statement requires, that the more drastic a policy change, the longer its implementation has to be delayed and the more carefully the precise contours of the new policy have to be explained in order to allow for smooth adjustments in the private sector. A policy may be unconstitutional simply because the legislature did not take the requisite care in spelling it out in time and providing for reasonable adjustment periods before implementation.

Stable currency

Contractual relationships that are entered into for longer periods of time typically require for some kind of payment to be made by one or the other party. The

[11] For an analysis of the importance of the first three options see Hirschman (1970).

benefits from contractual relationships can be seriously impaired if there is no common language in which to express the duties of the different parties. The problem is most serious in the case of payments, if there is no stable unit in which to express the size of payments to be made and received. The more uncertainty there is, the smaller can be the gains from trade and consequently the smaller is the potential for economic progress in that society. This is why, from an economic point of view, the guarantee of a stable currency is important as an ancillary right. Again, what is really required is not one particular monetary policy, but rather an institutional arrangement which stabilizes the unit of account. It should be noted here that this requirement does not prescribe any particular monetary policy for a central bank, such as a European Central Bank; nor does it require only one currency to circulate in a particular market. Leading monetary theorists have shown that a variety of currencies circulating may not only be compatible with the principle of keeping the unit of account stable; it may even be in the interest of enforcing this principle.[12]

Open markets

Finally, access to markets has to remain open in order to allow for other basic human rights to be exercised in a meaningful way. This is obvious for the right of freedom of contract, but also extends into such classical basic rights as the freedom of the press, freedom of political expression, freedom of exercising the religion of one's choice, freedom of exercising the profession of one's choice, the academic privileges of freedom of instruction and research, etc. The problem is, by the way, most serious if a particular government or some private agents suppress the existence of a market altogether. The guarantee of freedom of access to markets obviously includes the guarantee to have such markets established, which does not predetermine the shape such markets take, as long as they provide for an open forum to communicate and exchange, which is what a market basically is about.[13]

Procedural Guarantees

Basic rights and procedural guarantees are equally important, since basic rights can only be exercised if certain procedural guarantees are observed. The importance of procedural guarantees is not reflected in the amount of space they receive in this essay, due to space limitations. Essentially, there are two types of procedural guarantees: guarantees regulating the relationship between public bodies; and guarantees regulating the relationship between public bodies and citizens.

The relationship between public bodies

The procedural principles regulating the relationships between public bodies consist of at least three groups. They include all those rules regulating the domains of competence of the various public bodies with respect to each other, including the areas of co-operation, mutual consent or hierarchical control. A second group consists of principles of budgeting such as the principles of timeliness, completeness of budgets etc. A third involves principles of legislation. One is that legislation always has to be of a general character, and that acts are invalid if they address one case only. Another economically relevant principle involves the requirement that legislation which has turned out to be faulty, unjust or seriously impractical and thereby has turned out to be in violation of basic rights needs to be corrected.

The relationships between public bodies and citzens

The second set of procedural rules typically found in constitutions involve the question of how the private citizen or other legal entity relate to public bodies. Into this category fall essentially two sets of rules. One set again governs the separation of the domains of competence. A typical example is the separation of church and state. But here, again, forms of co-operation, of mutual consent or of hierarchical orderings are clearly available. The second set of rules, generally described by the extremely comprehensive term of due process, lays down the rules of the game between public bodies and private citizens or legal entities. These include information rights, notification rights, and the right to have access to courts and bodies of appeal in meaningful ways that go beyond merely procedural ceremonies without content, since the important benchmark is the effectiveness of these procedures in safeguarding the six basic economic rights outlined above.

A Concise Summary

In the preceding analysis, we have identified constitutional guarantees with respect to basic rights on the one hand and procedural rules on the other. There are three basic rights the guarantee of which has to be considered as central from an economic point of view. These guarantees protect the right of freedom of contract, the institution of liability in the sense that those responsible for actions or a lack thereof can be held responsible for the effects of their activities or the lack thereof; and the institution of private property in the sense that clearly specified

[12] See, for instance, Yeager (1985) with further references.

[13] See Schwartze (1990).

and meaningful alternatives become available for economic agents to dispose with goods and services. These basic economic rights are supported by three ancillary economic rights, guaranteeing a stable legal environment, a stable currency providing for a common language of contractual relationships, and open markets which include the right to establish such markets in areas where they do not exist.

Procedural guarantees cover either the relationship between public bodies, or the relationship between public bodies and private citizens or other legal entities. The principle of due process requires in this context that citizens and legal persons have access to courts and bodies of appeal in meaningful ways, barring purely ceremonial procedures.

The economic analysis of constitutional rights can, obviously, not substitute for constitutional jurisprudence. But economic analysis can substantially enhance the sharpness of jurisprudential analysis by spelling out the consequences of particular constitutional provisions (or the lack thereof) and the systematic interconnections between basic legal institutions such as property, contract, and liability, as well as legal procedures. In this sense, the economic analysis can be integrated into jurisprudential analysis and by being embodied into the interpretation of constitutional provisions, economic analysis can become an integral part of constitutional scholarship.

REQUIREMENTS

The environmental charges and taxes described in this essay all require a functioning market economy. However, it is also important to emphasize their fit with the traditional principles of public finance. We can distinguish five principles, and those should be briefly addressed.

Firstly, at the heart of economic analysis, we obviously strive for efficient solutions. That is those solutions which cannot be improved upon without compromising any other goal or objective. The approach suggested here fits this bill, and this is important in that efforts at siphoning off public revenues for private purposes will immediately show up as patent inefficiencies in a system that at least fulfills the basic eight requirements listed earlier. Secondly, a tax regime should be administratively feasible. In the case at hand, since natural resources can be readily identified and an owner can be assigned, if none exists or has existed before, the tax administration has an immediate addressee with whom to deal in a straight forward manner. This allows for a fairly lean administrative structure to achieve far reaching purposes.

Thirdly, taxes should be flexible in the sense that the tax assessment varies with the value of the tax resource. The assessment procedure described above clearly ensures that this requirement can be met.

Fourthly, taxes should fit the political system so as to help making it more transparent. Many sub-Saharan countries have only natural resources to show for. These are extremely visible, and a tax regime focusing on the sustainable use of those resources with a view to developing the entire country through an optimal use of the resource can be certain to be in the focus of even a rudimentary public society. Hence, this particular proposal fits the criterion well.

Fifthly, and finally, taxes should be considered equitable. Many sub-Saharan countries rely on taxes that both hamper economic growth and are exceedingly inequitable. Think of the export trading monopolies, which are essentially a tax on agricultural labour and economic innovation, thus artificially keeping economies agriculture bound and technologically lagging. A tax regime focusing on the natural resources of a particular country, be this oil, diamonds or landscape amenable to tourism will not only burden the working population when the other factors of production may be exempt, but it also pushes the entire system into economic progress, which typically benefits the smallest earners relatively the most.

CONCLUSIONS

There is a widespread tendency to move to regulatory regimes in order to alleviate these problems. Yet regulatory regimes by themselves do not have a better track record in containing environmental waste. The present paper explores the extent to which environmental damages can be insured, thereby creating prospective incentives in addition to the retro-active incentives present in the regime of private property. A procedure is outlined which, derived from classical principles of public finance, combines taxing and licensing decisions with insured bids on the strength of which decisions can be taken by necessarily underinformed public authorities.

The solution is meant to respond to the special needs of developing countries. The solution requires only a simple administrative infrastructure, and it allows international developmental agencies and large multinational corporations to play a role in the implementation. Natural resources are emphasized as the single most taxable assets of developing countries, and a tax constitution built on simple principles of classical public finance is described. This constitution is a self-enforcing one in stimulating sustainable growth through incentive taxation.■

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PROMOTING PRIVATE SECTOR PARTICIPATION IN THE FINANCING OF SUSTAINABLE DEVELOPMENT

Anil Markandya
with P. Francis*

EXECUTIVE SUMMARY

Hardly anyone would disagree with the proposition that the private sector has a major role to play in financing sustainable development. The questions are about how this role should be exercised; which are the areas where it can be effective and where is it less likely to make a contribution? In evaluating the actual and potential contributions of the private sector we must look at all dimensions of sustainability – not just the environmental, which has been the focus of previous work in this area. Hence a social and economic assessment is also required.

The paper reviews general trends in private sector finance over the last 10-15 years and analyzes specific trends in private sector finance, beginning with privatisation and infrastructure investment. Privatisation is an important potential source of finance for sustainable development, although it is rarely the main source of provision of key infrastructure services. The experience with private provision of what were previously public sector activities has generally been good with respect to economic sustainability. On the environmental and social dimensions the evidence is less clear but the few examples provided point to some progress on both these fronts. More systematic evidence is needed, however, and there is a concern that mainly the "good side" is documented, often because it relates to the activities of the multilateral institutions.

The second specific trend relates to the financing of global environmental protection. Here much has been promised for some time but relatively little has been delivered. This will change in the next decade, especially if the flexibility mechanisms of the Kyoto Protocol are implemented. It is noteworthy that there is a great deal of interest in the private sector even at this early stage. Other initiatives, such as bio-prospecting, and certification of forest products remain small and are unlikely to become major areas of activity. Nevertheless they may provide important services to some communities and certain niche markets.

The third area relates to the impacts of privatisation on the local environment, where the picture is mixed. Positive aspects include improved incentives for efficient environmental protection through economic instruments and reductions in environmentally damaging subsidies. Standards for the appraisal of investments have also risen, with stricter environmental norms and a more careful assessment of social impacts. The situation has not improved appreciably in developing countries, however, when it comes to capacity for regulating the environment and ensuring compliance. Furthermore, most sustainability indicators have yet to be made operational so that investments can be evaluated with respect to such criteria. Finally, the picture is worse when we look at the growth of private transport and the increased exploitation of renewable natural resources. In both cases the private sector is responsible for much of the investment but it is not responding to indicators of unsustainability.

From this review of the performance of the private sector, a number of obstacles and opportunities have been identified. These are: weak enforcement of environmental regulations; weak economic and regulatory incentives; problems with meeting environmental and social objectives in privatisation schemes; unstable macro-economic conditions and an uncertain regulatory environment; low support for environmental protection; inequity, lack of transparency and political acceptance; and, equity concerns and international political acceptance.

* Anil Markandya is Professor of Economics, University of Bath, United Kingdom and P. Francis is a doctoral candidate in economics, University of Bath, United Kingdom. The authors would like to thank Alistair Hunt for contributing material on case studies referred to in the paper, and to Nick Dale for reading the draft and commenting on it. Thanks are also due to the participants of the workshop in Nairobi, especially Carl Greenidge who commented on the paper. Responsibility for any remaining errors in the text, however, is ours.

On the enforcement of regulations more resources are needed, especially through external assistance. But this will not be enough; the whole system of regulation, monitoring and compliance has to be changed, with greater use of informal methods and greater involvement of civil society.

On weak economic and regulatory incentives the continued reductions in non-targeted subsidies for resource use need to be maintained. Economic instruments need to be applied at more stringent levels if they are to have an incentive effect. This can only be achieved by example, by showing how such schemes have worked elsewhere and how adverse social and economic impacts can be mitigated.

On the problems of meeting environmental and social objectives in privatisation, the regulatory framework can respond to meet these challenges, as the success stories show. The reasons why other cases have been less successful need to be analysed further. Reviews of programmes indicate that public-private partnerships may work better in meeting broader sustainability goals but they have to be structured in a very precise way if they are to succeed.

The uncertainty issue is a key one for private sector involvement in infrastructure and environmental projects. Unless the level of uncertainty is reduced, private sector involvement will not be forthcoming. In some cases this reduction cannot be made without excessive cost; those are situations where the private sector should perhaps not be involved. In others, a combination of support for a careful appraisal of the projects, clear and declared government policies, and selective government and multilateral/export credit agency risk guarantees are required.

In some countries the level of support for environmental protection is low and the private sector cannot be persuaded to provide the investments for that reason. Where the level of interest is too low because vulnerable groups are being excluded from the polity and individuals are unaware of the effects of the degradation that they are experiencing, the international community can assist in providing the necessary information and in supporting the civil groups that are seeking to bring the issue onto the national agenda. The danger to be avoided in the latter case is being accused of external interference and undermining the efforts to strengthen governmental institutions.

On the lack of transparency and equity the principles are clear. Governments cannot act without some democratic agreement in the area of privatisation. The selection of parties to deliver the services must be undertaken through some kind of competitive process and they must not be seen to be excessively rewarded for their services. Failure to observe these conditions results in lack of success for the projects itself and has ramifications for other privatisation programmes.

Finally, there are equity concerns for acceptance of regulatory measures at the international level. The way to overcome this, and to take advantage of the huge opportunities available for sustainable development as a result of the global treaties is to show, by example, that the schemes can work to everyone's benefit. That implies a gradual process, but one that has started with some optimism in the last few years.

In the end, promoting private sector participation is not mainly about financial resources. It is about attitudes and ways of thinking about the provision of key services. This takes time but the process has started.

INTRODUCTION

THE role of the private sector in financing, and otherwise promoting, progress toward sustainable development has attracted considerable attention in recent years. The body of writing on the subject has grown substantially, particularly since the 1992 "Earth Summit" in Rio de Janeiro, with various researchers and practitioners contributing to our understanding of the subject area. The role of the private sector has featured prominently in the work of the United Nations Expert Group on Financial Issues of Agenda 21, as evidenced in the agendas and associated proceedings. A review of the key papers reveals, however, a lack of a unifying framework that brings together the wide range of experiences into:

- Guidelines by which one might evaluate the contribution of a particular private sector project or programme to sustainable development indicators; and
- Methods by which policy-makers can compare alternative methods of finance for the same project or programme and rank them with respect to their contributions to sustainable development.

The literature to date, while useful and enlightening, is largely anecdotal in nature, reporting on success stories and failures with, as is common in such cases, more successes than failures. Moreover it focuses on the contribution of private sector finance to the environmental dimension of sustainability. To be sure, there are partial exceptions. At the 1997 Ex-

Table 1. Likely Impacts of Increased Private Sector Finance on Different Dimensions of Sustainable Development

	Possible Positive Impacts	*Data*	*Possible Negative Impacts*	*Data*
Environment	Increased overall investment in environmental protection	Anecdotal	Lower environmental standards adopted Increase in environmental degradation	Some studies
Economic	Increased growth in GDP	Some studies	More unsustainable use of natural resources	Anecdotal
	Increased accumulation of human capital	Anecdotal		
	Sustainable use of natural resources	Anecdotal		
Social	Increased employment	Anecdotal	Reduced social provision for key goods and services	Anecdotal

pert Group Meeting, Jun and Brewer (1997) presented a paper that attempted a review of foreign private capital flows with respect to the economic and social dimensions of sustainability. It noted several problems, such as establishing causation in the correlation between economic performance and foreign direct investment (FDI). These and several other key issues in evaluating the role of the private sector's contribution to sustainable development remain unresolved. The gap is greatest when it comes to the social dimension of sustainability (Gentry, 1998). When does private sector finance promote such sustainability and when does it retard progress in that direction? This question is hardly ever asked, let alone answered.

Before this paper can address the issue in its title, it has to set out some general criteria for assessing the contribution of private sector finance to sustainable development. The next section reviews, in the light of these criteria, the contribution that private sector financing has made in the last ten years or so. The penultimate section focuses on ways in which the role of the private sector could be increased, and channelled, so that it contributes most effectively to sustainable development. Both the opportunities and the obstacles to such a contribution are discussed. The paper concludes with some suggestions for further research that should help formulate better policies in this area.

SUSTAINABLE DEVELOPMENT AND THE PRIVATE SECTOR

It is widely accepted that there is no single measure that captures all three dimensions of the concept of sustainability (environmental, economic and social). Furthermore, there is no consensus on how any measures that do exist should be used in an operational context (Bartelmus, 1999). There are, however, useful indicators for each of the three dimensions (Adriaanse, 1993; World Bank, 1997). Environmental indicators of sustainability include measures of pressure on the environment, the ambient state of the environment and the extent of the response to the pressures. Economic indicators include extended measures of capital, encompassing the environmental, physical, human and social. Social indicators seek to measure social capital, as well as inequality, poverty and social exclusion.

The role of the private sector in financing sustainable development has to be seen in relation to all three dimensions. Table 1 summarises the likely impacts of different programmes and projects when undertaken using private sector finance as opposed to public sector finance. It also indicates the extent to which information is available in the literature on each of these impacts.

On the environment side private sector financed projects can provide additional resources for investment in environmental protection (Gentry, 1998; Hamilton, 1996) and for investment in products that are more environmentally friendly (Steele and Pearce, 1996). Evidence on the extent to which the increased level of private finance has contributed to these goals is, however, only anecdotal. A formal analysis would require a comparison between investment levels in these areas with and without some measures that increased private sector involvement and would need some formal statistical analysis. This is not available. Informal evidence provides a number of cases where private sector projects have adopted higher environmental standards than prevailed in that sector generally, and where such finance has contributed to opening up markets for environmentally friendly goods, such as eco-tourism, bio-prospecting etc. By and large the claim that such projects could not have been financed by the public sector is correct, although that does not tell us what

Table 2. Gross Domestic Investment and Gross Domestic Savings

	GDI as percentage of GDP		*GDS as percentage of GDP*		*Deficit as percentage of GDP*	
Group/Region	1980	1997	1980	1997	1980	1997
Low Income	20	22	15	17	5	5
Middle Income	27	26	27	26	0	0
High Income	25	21	24	22	1	-1
Low and Middle Income:						
East Asia	32	36	33	38	-1	-2
Latin America and Caribbean	24	22	22	20	2	2
Middle East and North Africa	27	24	38	25	-11	-1
South Asia	21	23	15	18	6	5
Sub-Saharan Africa	24	18	26	17	-2	1

Source: World Bank (1999a), Table 4.9 and author's calculations
Note: GDI = gross domestic investment; GDS = gross domestic savings; Deficit = GDI minus GDS

Table 3. Composition of capital expenditure in low and middle-income selected countries

	Government expenditure as per cent of GDP		*Government capital expenditure as per cent of Government expenditure.*		*Gross domestic investment as per cent of GDP*		*Government capital expenditure as per cent of GDP*		*Non-Govt. capital expenditure as per cent of GDP.*	
Country/Region	*1980*	*1996*	*1980*	*1996*	*1980*	*1996*	*1980*	*1996*	*1980*	*1996*
East Asia										
Korea	17.20	18.60	14.00	23.00	32.00	35.00	2.41	4.28	29.59	30.72
Malaysia	28.50	21.90	35.00	19.00	30.00	43.00	9.98	4.16	20.03	38.84
Thailand	18.80	16.50	23.00	36.00	29.00	35.00	4.32	5.94	24.68	29.06
Europe and Central Asia										
Hungary	56.20	43.20	13.00	9.00	31.00	27.00	7.31	3.89	23.69	23.11
Romania	44.80	31.40	33.00	11.00	40.00	21.00	14.78	3.45	25.22	17.55
Latin America and Caribbean										
Brazil	20.20	33.80	8.00	3.00	23.00	21.00	1.62	1.01	21.38	19.99
Chile	28.00	21.00	10.00	17.00	21.00	27.00	2.80	3.57	18.20	23.43
Trinidad & Tobago	30.90	28.30	39.00	10.00	31.00	22.00	12.05	2.83	18.95	19.17
Middle East and North Africa										
Egypt	50.30	34.30	21.00	19.00	28.00	18.00	10.56	6.52	17.44	11.48
Tunisia	31.60	32.60	30.00	21.00	29.00	17.00	9.48	6.85	19.52	10.15
South Asia										
India	13.30	15.80	12.00	11.00	21.00	24.00	1.60	1.74	19.40	22.26
Pakistan	17.50	23.80	18.00	13.00	18.00	15.00	3.15	3.09	14.85	11.91
Sub-Saharan Africa										
Botswana	31.80	39.40	32.00	19.00	35.00	26.00	10.18	7.49	24.82	18.51
Kenya	25.30	28.90	23.00	12.00	29.00	19.00	5.82	3.47	23.18	15.53
Zambia	37.10	21.40	11.00	33.00	23.00	15.00	4.08	7.06	18.92	7.94

Source: World Bank (*1999a)*; table 4.9 and author's calculations based on tables 4.13 and 4.14

Table 4. Private capital flows to developing countries

	1990				*1997*			
	Value	*Of which shares were*			*Value*	*Of which shares were*		
Group/Region	*$ Million*	*FDI*	*Portfolio: Equity & Bond*	*Bank Finance*	*$ Million*	*FDI*	*Portfolio: Equity & Bond*	*Bank Finance*
Low Income	3,502	32.6	6.3	61.1	17,023	62.6	27.3	10.1
Middle Income	38,398	58.7	7.9	33.4	268,863	55.8	23.9	20.4
Low and Middle Income:								
East Asia	17,664	58.6	0.6	40.9	91,188	67.4	23.3	9.3
Europe and C.Asia	7,695	14.3	27.0	58.7	49,875	44.7	27.0	28.3
Latin America and Caribbean	12,411	66.0	8.0	26.0	118,918	51.8	19.1	29.1
Middle East and N. Africa	668	412.7	-22.2	-290.6	8,120	66.1	47.8	-13.9
South Asia	2,174	21.3	11.6	67.1	11,110	42.0	43.4	14.6
Sub-Saharan Africa	1,288	64.8	-2.4	37.7	6,674	78.2	40.5	-18.7

Source: World Bank (*1999a),* table 6.7

measures would lead to the level of finance in these areas increasing to its optimal level. The criteria, therefore, for environmental sustainability should be the increase in environmental quality resulting from the increase in private sector finance relative to a plausible alternative. The latter could be (a) no investment in the sector or product or (b) investment by a less environmentally oriented private or public sector entity.

Similar arguments apply to the possible negative impacts of private sector finance. There are some studies on whether increased foreign investment in developing countries has been motivated by lower environmental standards (Jun and Brewer, 1997; Jha, Markandya and Vossenaar, 1999). Less is known about whether the overall increase in private sector capital investment has resulted in an increase in environmental degradation, or indeed what the appropriate point of comparison should be.

On the economic dimension, increased foreign direct investment (FDI) is correlated with increased levels of growth but the causation is disputed (FDI may be attracted to countries where growth is high in the first place) and there are indications that domestic investment falls in compensation (UNCTAD, 1996; Caves, 1996). At the same time, stories are recounted about the valuable technology transfer and human skill development associated with the increase in FDI. On the impacts of private investment on natural resource exploitation, there are examples of actions that have promoted sustainable use (Steele and Pearce, 1996; Hamilton, 1996), but there are also cases where investors have extracted resources with less care for sustainability and environmental protection (French, 1998). The criteria for assessing the economic dimension should be the increase in output, valued at social prices, resulting from the shift in the investment regime or from the increase in private sector investment relative to some baseline. In doing this, possible changes in other investments as well as the effects of the investment on social and human capital must be taken into account.

Finally, there are the social criteria. Arguably, sustainability is as much about inter- and intragenerational social equity as it is about environmental protection. Yet the case for private sector finance in terms of increased employment or reduced provision of public goods is very sketchy.[1] Infrastructure projects funded by the private sector require higher returns to induce the investment (Haarmeyer and Mody, 1998). This in turn may raise prices and limit coverage, which could affect the well-being of

[1] Major studies on this topic explicitly exclude the social dimension. Thus Serageldin and Sfeir-Younis (1996) finesse the issue by titling their study "The Effective Financing of Environmentally Sustainable Development". The discussion of the social dimension is, consequently, very limited.

the poor, or other vulnerable groups, and exclude them from the provision of the services provided by the infrastructure. The extent to which this has happened as the public sector has given way to the private is not well documented. One viewpoint is that there is no real alternative to the (at least partial) provision of services such as electricity, water and sanitation. Hence the social impacts are secondary. But this is not an appropriate position to take. If the services are not affordable and the programmes leave large sections of society unprovided for, their rating in terms of social sustainability will be low. This need not be the case, however, and there are some projects (described below) which have addressed this issue while maintaining the private sector's participation in the finance of key services. Thus, projects should be judged with respect to the social criteria, with no prior view of what extent they have complied with it.

ASSESSMENT OF THE CONTRIBUTION OF PRIVATE SECTOR FINANCE TO SUSTAINABLE DEVELOPMENT

General Trends in Private Sector Investment

There is evidence from which one can analyse the changes in the level of private sector finance of investment in developing and developed countries. Tables 2 and 3 provide some relevant data. Table 2 shows the difference between gross domestic investment and gross domestic savings for different regions. The difference between the two is attributable to external resources. Interestingly, as a percentage of GDP, the deficit has not increased in low and middle-income regions between 1980 and 1997. The high-income countries have moved from having net resource inflows to having net resource outflows.

While each group is large enough to mask considerable internal flows, the overall picture does not point to a structural shift in the financing of gross domestic investment. This may be thought to be at odds with the data that private foreign direct investment has increased noticeably, at least over the last decade. However, the amounts of FDI are not large compared to these gross resource flows. For example, gross domestic investment in all low and middle income countries was one quarter of their collective GDP in 1997, or about $1.5 trillion. By contrast FDI in 1996 was $110 billion or about 7 per cent of the total. Hence, the largest part of investment by far has come from domestic resources and continues to do so. Regionally, East Asia became a larger net provider of investment resources (reflecting the role of Korea?) and the Middle East became a much smaller net investor outside the region. Other changes are too small to interpret.

The breakdown of investment between the private and public sectors is provided in Table 3. This exercise could not be carried out at the regional level, as data were not available for enough countries. Hence, information has been reported for selected countries. Of the 15 countries looked at, government capital expenditure as a share of GDP rose between 1980 and 1996 for four of them (Korea, Thailand, Chile and Zambia), remained more or less constant in India and Pakistan and fell in the other 9 countries. Non-government capital expenditure rose as a share of GDP in all three East Asian countries, as well as Chile and India. It fell in nine of the countries and remained more or less constant in one (Trinidad and Tobago). This reflects the fact that private sector investment has boomed in selected countries only, a point that has been noted by other commentators. As a share of total investment, the private sector has increased in nine of the 15 countries, fallen in five and remained more or less constant in two (Chile and Botswana). There is no clear pattern to these share changes, except that the transition economies show a major shift to the private sector.[2]

Previous studies have focussed on the enhanced role of foreign capital flows in promoting investment, particularly FDI. As noted above, the amount of FDI is small relative to total investment, though its share has increased over time. In the low-income countries, the World Bank estimates that FDI increased from virtually zero in 1980, to around 8.5 per cent of total private sector investment in 1997. In middle income countries the share has risen even more, again from zero to about 15 per cent. Interestingly, the increase is found in all regions; in 1997, FDI amounted to 20 per cent of private sector investment in East Asia, 11 per cent in Central Europe and Asia (transition countries), 16 per cent in Latin America and the Caribbean, 5 per cent in South Asia and 11 per cent in Sub-Saharan Africa.

In addition to FDI, financial flows to developing countries relevant to investment also include portfolio investment and bank-related finance. Table 4 summarises the changes in all financial flows from 1990 to 1997. Across all developing countries total flows increased nearly seven-fold during this period, with the largest increases in Latin America and the Caribbean (nearly ten-fold) and the smallest increases in East and South Asia (five-fold). The structure of financial flows has also been changing. With the exception of Latin America and the Caribbean, the share of bank finance has fallen substantially and that of FDI and portfolio investment has increased.

[2] The calculation of the share of the non-government investment is taken as the difference between the total and the government investment. Separate data are given from private sector investment for selected countries and periods. Although the actual percentages come out differently in a number of cases, the broad picture of a varied trend in the share of the private sector remains.

Table 5. Changes in economic activity for state-owned enterprises (1985-1996)

	Share of economic activity by state-owned enterprises as percentage of GDP	
Country	*1985-1990*	*1990-1996*
East Asia		
Philippines	2.3	2.2
Latin America and Caribbean		
Argentina	2.7	1.3
Bolivia	13.9	13.8
Brazil	7.6	8.0
Chile	14.4	8.1
Mexico	6.7	4.9
Panama	7.6	7.6
Paraguay	4.8	4.5
Peru	6.4	5.7
South Asia		
India	13.4	13.4
Sub-Saharan Africa		
Botswana	5.6	5.6
Zimbabwe	10.8	11.3
High Income		
United Kingdom	3.6	2.8

Source: World Bank (*1999a*), table 5.8.

The shift to FDI has been strongest in relative terms in Eastern Europe, where portfolio investment's share has remained constant, and weakest in Latin America, where the share of FDI has fallen by about 15 per cent. Portfolio investment has gone up most in relative terms in East Asia, Sub-Saharan Africa and South Asia. The composition of financial flows has considerable significance for sustainable development in these countries, as discussed below.[3]

Overall, we conclude that the picture of the trends in private sector investment is more complex than is sometimes portrayed. Over the last decade or so, the role of the private sector has not increased in relative terms in all countries. Moreover, the trends in public/private sector changes cannot be classified by region or level of development. There has been a substantial growth in private foreign flows but they are still a minor part of total investment or even private investment. However, increases in FDI as a share of the total private capital flows have been observed in all regions, as has the sum of financial flows (FDI, portfolio and bank finance). The structure of financial flows generally has been towards FDI and portfolio investment and away from bank finance, but Latin America and the Caribbean are exceptions to this pattern.

Specific Trends in Private Sector Finance

In this section we look at specific trends in the role of the private sector, covering privatisation and infrastructure investment, investments related to global environmental protection and investments related to improving or sustainably using the local environment.

Privatisation and infrastructure investment

The changing role of the private sector in economic activity can be seen in table 5, which provides the share of economic activity by state owned enterprises for all countries for which data could be obtained. The years of comparison are averages for 1985-1990, and 1990-1996.

The share of state-owned activities has fallen in a number of countries in Latin America and the Caribbean, notably Argentina, Chile, Mexico and Peru. It has risen, or not fallen appreciably, in all the other developing countries. The picture is substantially incomplete, as data are missing for all other countries for one or other of the two periods. It is certain, for example, that the share in economies in transition has fallen substantially, although there are significant differences between countries in this group. Nev-

[3] FDI has been claimed to be superior to equity and portfolio investment because it is less volatile. However, this is not an easy position to sustain. Poor economic policies, which result in an outflow of equity and portfolio investment will also cause a fall in future FDI; the effect of the change in the latter will be more pronounced in the long term.

ertheless, the data are revealing enough to show that in several major countries in the world the share of state-owned activity has not declined in the last 15 years.

The economic case for privatisation has been made for some time and is largely valid. A shift in economic activity from the public to the private sector results in a reduction in the costs of providing the service and an increase in the resources available for investment, without drawing on scarce public funds. A World Bank study of 60 privatised companies quoted in Panayotou (1998) found that privatisation had resulted in an improvement of 11 per cent in efficiency, 44 per cent in investment and 45 per cent in profitability.

While this may be too enthusiastic a picture—similar performance gains are certainly not universal in transition economies, Auty (2000) — improved economic performance is generally expected from privatisation. The concerns are more on the environmental and social sides. It is interesting that the World Bank study referred to above does not address either of these concerns. The environmental fears are clearly stated by French (1998, 32): "When it is done wrong, privatisation leaves environmental degradation and social disruption in its wake." The incentives for a less than acceptable environmental performance are clear. Governments are keen to attract private capital, which tends to demand higher rates of return on its investment than the public sector. This raises the price of the services, although some of the return comes from an improvement in efficiency as well. In the face of such pressures, and given limited environmental management capacity in the government anyway, the authorities may be willing to overlook environmental norms, as these will further raise the costs of provision of the services, or make the projects unacceptable to the private sector.

French (1998) provides examples of private sector projects with potential serious environmental consequences that include power stations with high pollution levels, water supply projects that pay little attention to conservation, hydro-electric projects with large displacement of populations, and gas and mineral development projects that cause environmental damages which would be unacceptable in the high income countries.[4] The World Bank and other multilateral institutions would claim that projects financed with their involvement have to meet strict environmental standards, and that such impacts are not possible. In this they are broadly correct, although some private sector projects, especially in the transport and water sectors, have been subject to criticism. What they cannot do, however, is to influence all privatisation-related activities and, since funds are fungible, countries may go to the multilateral institutions for the "cleaner" projects and to other private sector sources for the less "clean" ones. There is no study that has investigated whether this is true or to what extent it is true.

This raises the question of how the private sector takes account of the environmental dimension. There is conflicting evidence on this. Gentry (1998) notes that the traditional view has been that environmental factors have little impact on corporate valuation and the environment is considered a liability, cost or risk. Against this, some recent work has shown a positive link between environmental and financial performance. Earle (1998) reviewed 70 studies in this area and concluded that companies with best environmental practices had a 2 per cent higher stock market return than other companies. World Bank (1999b) reports on a study of stock market prices in Argentina, Chile, Mexico and the Philippines. It finds that when good environmental performance is publicly recognised the share price rises by an average of 20 per cent, while a publicised complaint about pollution results in a fall of 4-15 per cent. If these studies are correct, and if the causation is indeed from better environmental performance to higher share price (which it may not be), then the private sector has some degree of self regulation of the environment. How much this works to protect the environment is, however, still an open question.

On the social side, the concerns about privatisation are that it will result in higher charges and a lack of social provision of the service to poor and vulnerable groups. The fact that private sector enterprises require higher returns is partly due to the higher perceived risk of such investments. Haarmeyer and Mody (1998) note that the equity return on a sample of private power projects is 18-25 per cent and for a sample of private road projects it is 15-30 per cent. These are considerably higher than the returns for public investments, which tend to be around the 10-12 per cent mark. How much of the returns are generated by increased efficiency and how much by higher prices is not answered in the literature but some increase in prices is often expected (although there have been several privatisations where prices have fallen).[5]

The way to protect the low-income groups and others who would lose out in the face of such changes is through the regulatory framework. Much has been written about how this should be structured, for ex-

[4] Private sector investment in mining and extraction of natural resources is particularly large as a share of total investment in Africa.

[5] The higher rate of return may be justified when the alternative is public sector funds. The literature on the marginal cost of public funds (Ballard, Shoven and Whallay, 1985) notes that a dol-

ample, Brook-Cowen 1997). Generally speaking, the more control one seeks over social provision, the more power the regulator needs and the greater the capacity needed to ensure compliance. Tariff determination, including possible cross-subsidisation of rates for low level/low-income users, has successfully been achieved in a number of cases of privatisation. A number of cases are described in Gentry and Fernandez (1998), French (1998) and Johnstone, Wood and Hearre (1999). These suggest that projects have had some success in meeting all three criteria of sustainability and indeed the social dimension has been given considerable thought in the design of the privatisation. This does not mean, however, that all privatisations have had the same success in social terms – again there is a tendency to pick out the "good cases". Furthermore, there have been some problems; the case studies in the literature indicate that difficulties arise with respect to:

- Trade-offs between lower average tariffs for the poor who are provided the service and expansion of the service to more poor households;
- Lack of clarity in the agreement about how increased costs of unforeseen environmental regulations will be passed on;
- Difficulties in applying metered tariffs;
- Difficulty in getting political agreement on large-scale concessions for privatisation of public services. Transparency in the arrangements for such contracts and ensuring competitive bidding is essential for the long-term success of the project (Gentry and Fernandez, 1998);[6]
- Given the long term nature of the agreement, it is more effective when the contracts are based on performance indicators rather than on process indicators which specify how standards are met (Gentry and Fernandez, 1998);
- The terms of private sector provision of water and sanitation often ignore the impacts on those outside the scheme — other users of ground and surface water which is drawn for the project or those receiving untreated waste water resulting from the project (Johnstone, Wood and Hearne, 1999);
- As noted earlier, there are several levels and forms of privatisation. Brook-Cowen (1997) describes them as follows, in increasing order of private sector responsibility: service contract, management contract, lease, build-operate-transfer, concession and divestiture. Apart from divestiture, most involve some form of public-private partnership. Although there are papers describing the merits and de-merits of each, a detailed evaluation of the relative performance of different forms is lacking. We discuss when one form is to be promoted in favour of another, in the next section of this paper.

To sum up, privatisation is an important potential source of finance for sustainable development and is growing in popularity, although it is by no means the main source of provision of key infrastructure services and, indeed, the share of state activity has not fallen in many countries. The experience with private provision of what was previously a public sector activity has generally been good with respect to the economic dimension of sustainability. On the environmental and social dimensions the evidence is less clear, but the few examples we have point to some progress on both these fronts. We need more systematic evidence, however, and there is a concern that what is documented is the "good side," often because it relates to the activities of the multilateral institutions, which are under more careful scrutiny than other private sector initiatives. Furthermore, some sceptics argue that, given poor monitoring capacity in most developing countries, can the privatised companies be expected to continue to provide the services in a way that maintains progress toward sustainability?

Investments related to global environmental protection

Following the emergence of the major global environmental issues of stratospheric ozone depletion, climate change and biodiversity loss, nations have recognised the importance of international measures to protect the environment against losses arising from such changes. This requires changes in policy as well as allocations of resources for investment to mitigate the negative impacts and prevent further damage. The ground relating to these issues was well covered in the earlier papers on the financing of sustainable development (Markandya, 1994; Steele and Pearce, 1996; Hamilton, 1996; Panayotou, 1998). The basic messages emerging from that literature are as follows:

- Substantial financial resources are required to initiate actions to achieve targets for environmental protection that must be seen as essential for sustainable development;
- The level of resources is not independent of the policy framework; generally the more market-

lar of public investment costs society more than one dollar because of the distortions it creates in the process of collecting the revenue. Hence if the private sector demands a rate of return of X per cent on its investment, the social cost of provision may be lower than with a public sector that asks for a lower rate, but that imposes a welfare cost on society in raising the revenue.

[6] The failure of the Malaysian Indah Water Konsortium sewerage project and the Pakistan Hub River Power project have been attributed to the lack of transparency and suspicion of corruption.

based the policy framework, the less are the costs of achieving any given global environmental target;
- National governments are not always, or even most frequently, the best agents to implement the programmes for global environmental protection. There is a key role for the private sector;
- Much of the action has to be implemented in developing countries which lack both the public and the private sector capacity and financial resources to undertake the actions.

As a result, a number of initiatives have been developed over the last 5 years or so. The Global Environment Facility (GEF) was set up in 1990 with the specific purpose of providing financial support to initiatives to protect the global environment in developing countries. It has a budget of around $2 billion over three years. Likewise, the Multilateral Fund was established in 1990 (initially as an Interim Fund) with the objective of assisting developing countries to phase out the use of ozone-depleting substances. It has a triennial budget of around $500 million.

The basic principle of support for both is that they fund the "incremental cost" in any project arising from the increased level of environmental protection (amounting to anything from 7 to 65 per cent of total cost). Although the GEF has always provided significant private sector support, latterly this has increased. The idea is that, with GEF support the private sector is able to leverage funds from other sources. Most such projects go through the International Finance Corporation (IFC), the private sector arm of the World Bank. Some examples of these projects include:

- Small and medium enterprise (SME) sector production of efficient lighting in Poland, whereby intermediary institutions receive low cost loans from the GEF, who then provides debt and equity financing for SMEs. The leveraging of the original loan is more than 100 per cent;
- A biodiversity enterprise fund that will invest in sustainable exploitation of natural resources through agriculture, aquaculture, ecotourism and recycling. GEF and IFC could together put up about $10 million in a fund of $20-50 million. The fund will invest in projects with a capitalisation of $40-100 million;
- A $100-$200 million Global Renewable Energy Fund to finance projects of less than 20MW. The Fund will start by exploring how concessional finance can be combined with commercial funding to support projects that would otherwise be so small that the transaction costs would exclude them from mainstream finance.

These are only a few of the initiatives that IFC is working on with GEF. The overall contribution to this area of private sector finance remains to be determined, as does the efficiency of the investments – how much additional contribution does the programme make to global targets, and what is the cost per unit of the target? It should be noted that these initiatives were on the agenda three years ago (Hamilton, 1996) and still appeared as proposed projects on the IFC Web Site in 1999.

Other initiatives that involve the private sector include private bio-prospecting programmes, under which pharmaceutical companies pay for the rights for such prospecting in exchange for limitations on development in the areas concerned. In 1991 the well-known deal between Mercx and INBio in Costa Rica was signed. The payment amounted to $1.35 million, as well as royalty deals on any discoveries. Since then, however, the number of new agreements has been rather limited. Steele and Pearce (1996) and Simpson, Sedjo and Reid (1996) noted the difficulties in this area. The need for a strong scientific base and political stability are necessary precursors. Also, expectations of high receipts for the host country are unrealistic given the nature of the market. In any event, we have not been overwhelmed with new bio-prospecting programmes. There are only a handful referred to in the literature – one or two in Brazil and Argentina and one in Suriname.[7]

Other developments in the private sector finance of global environmental problems include:

- Growth in investment in eco-tourism. No reliable estimate of the potential of this market is available. Currently there are many programmes that label themselves as eco-tourism but their contribution to conservation ranges from negative to possibly large and positive. In most cases the impacts are unknown;
- Various debt-for-nature swaps where NGOs "buy" the right to undertake conservation from a national government in exchange for retiring some of its debt from the secondary market;
- Programmes for labelling and certifying forestry products as consistent with sustainable use of forests, through the Forest Stewardship Council. Similar programmes exist through the Marine Stewardship Council for sustainable exploitation of fisheries.

With respect to climate change there have been several initiatives and the situation is evolving rapidly. The Kyoto Protocol in 1997 agreed on three "flexibility mechanisms" for meeting the target reduc-

[7] Steele and Pearce (1996) suggest that the overall revenue to developing countries could be as much as $1 billion annually. If so, we are less than one per cent of the way there.

tions in Green House Gases (GHGs) and in moving developing countries onto greater efficiency in economic activity with respect to GHGs. Countries are divided broadly into two groups: Annex I Parties, almost all of whom have binding commitments to make reductions for the period 2008-2012; and Annex II Parties that do not have such commitments.[8] Annex I countries can acquire or transfer emissions among themselves. The instrument for such transfers is called Joint Implementation (JI). The main features of JI are its restriction to Annex I countries with commitments, the inclusion of sinks and the lack of a start date from which projects will be accepted. In addition, these countries can trade emissions rights among themselves although the details of such trading arrangements have not been established. The third mechanism is the Clean Development Mechanism (CDM). This will permit any legal entity in an Annex I country investing in GHG reductions projects in developing countries, and getting credit from some or all of the reductions. The reductions will need to be certified and can be banked from 2000 onwards for the first commitment period. It is unlikely that sinks will be included in the permitted reductions. The full details still need to be worked out, and there are some proposals to limit how much any one country can "buy" in GHG reductions.

All three mechanisms will work substantially through private sector involvement in GHG reduction. Estimates of the cost of all the reductions are uncertain but range widely, from $22.5 to $31.6 billion for the year 2010. The share of CDM projects ranges from $7.5 billion to $17.4 billion for 2010 or $25-85 billion for the whole period (Austin and Faeth, 2000). This compares, for example, with current FDI to developing countries in 1996 of $110 billion and would represent a major increase in such flows. The contribution they would make to sustainable development, however, remains to be seen. The idea behind CDM is that such investment should support "sustainable development" but that is not made operational. It is clear that, in selecting projects for implementation, countries should look to broader indicators than simply the revenue for the sale of GHG emissions. These include ancillary benefits, reductions in unemployment and poverty, and increases in sustainable use of energy. A discussion of criteria for evaluating such projects can be found in Austin and Faeth (2000) and Markandya (1998).

Many institutions are making moves to operationalise the flexibility mechanisms and to develop certification protocols and provide brokerage or "clearing house" facilities for projects.[9] One example is the Prototype Carbon Fund (PCF) by the World Bank that is already looking for investors in a pioneering scheme to trade emissions. The World Bank has opened it to a select group of investors in industrialised countries and raised sufficient capital in January 2000 to get the scheme up and running. The PCF will operate like a mutual fund, except that the securities traded will be tons of carbon. Investors will finance mitigation activities in LDCs (as JI or CDM). Potential projects, subject to investors' approval, include those in the portfolio of the Bank and the IFC, as well as other agencies. Eligible investments will include promotion of renewable energy, energy efficiency improvement or replacement of "dirty" technologies. The PCF's maximum capacity has been set at $150 million and officials expect to attract $75-$100 million during the first opening. The governments of Finland, the Netherlands, Norway and Sweden have agreed to participate, although none has made a binding commitment to invest. Eighteen corporations have also agreed to sign on including British Petroleum, utilities in Denmark, Finland, Norway and Sweden and major Japanese firms, including Mitsubishi. The World Bank, which has sunk $3 million into the scheme, expects to recover about 80 per cent of its costs through commissions charged on transactions, by its own estimates, trading could reach $150 billion per year by the year 2020.

Investments related to sustainable use of the local environment

As noted earlier, the annual level of investment in developing countries is huge. Most of this has to come from domestic resources, and most of the domestic resources have to come from the private sector. The sustainability implications of the investments can range from positive and benign to extremely negative. There is no overall appraisal of trends in these investments, whether they are getting more or less economically efficient, or more or less environmentally and socially desirable. There are, however, some indirect indicators which suggest that the situation should be improving, some that indicate no change for the better and point in the opposite direction. The positive indicators are the following:

[8] Strictly speaking not all Annex I countries have undertaken commitments. The exceptions are Turkey and Belarus, who are not Parties to the Convention, plus Croatia, Liechtenstein, Monaco and Slovenia.

[9] Earlier papers in the CSD series on this topic refer to Activities Implemented Jointly (AIJ) and Carbon Offset schemes. These were actions undertaken pre-emptively, in the expectation of the flexibility mechanisms under the Kyoto Protocol. AIJs typically involved Annex I and Annex II countries and will not be permitted under the Kyoto Protocol as certified reductions. The amounts involved were, in any event, small compared to the trades expected under the flexibility mechanisms.

- The increased use of economic and fiscal instruments, especially the creation of property rights, tradable permits and markets for resources and pollution, pollution and product charges and bonds and deposit refund schemes. In many cases, the shift to such instruments results in enhanced economic sustainability as the costs of given levels of environmental protection decrease (Panayotou, 1999). Furthermore, they encourage enterprises to invest in cleaner technology and to reduce pollution, hence resulting in environmental gains. The impacts in terms of social indicators can be negative, but this can be addressed with relatively easy adjustments to the structure of the economic instrument (Markandya, 2000). There is no overall assessment about the extent to which economic instruments have been adopted, let alone an evaluation of their impacts on the nature of private sector investment and on sustainability indicators. Nevertheless, the trend towards adopting such instruments is encouraging and personal experience indicates that even those countries that were sceptical some years ago have started to look seriously into the use of such instruments;
- The reductions in environmentally damaging subsidies. Again there are only illustrative figures on trends. Gandhi, Gray and McMorran (1997) estimate subsidies to energy, water, transport and agriculture at around $870 billion for 1995. Pearce and Von Finckenstein (1999) estimate world subsidies at between $655-786 billion for 1995/96. It is generally believed that they have fallen since then, and Pearce and Von Finckenstein (1999) provide an estimate of a fall of 51 per cent since 1990. Interestingly, the smallest falls have been in the OECD countries (21 per cent), while China and other developing countries have reduced subsidies by 58 per cent. The reductions encourage the shift to less resource intensive methods of production which, in turn, imply that investment made by the private and public sectors will generally be more consistent with the goals of economic and environmental sustainability. Some subsidies, however, such as those on kerosene and gas in rural areas, will encourage the supply of such energy and thereby reduce the environmental damage associated with alternative fuels. Hence, not all subsidy reduction is desirable from a sustainable development viewpoint, although one needs to bear in mind the economic cost of providing the subsidy and whether that is economically sustainable. The impact of subsidy reduction on the poor and socially excluded has long been a matter of debate. These resource subsidies largely benefit the better off, but that does not mean that their removal will not hurt some vulnerable groups. Targeted subsidies, such as those offered through rising block tariffs for water and energy, offer one solution. Another is to use innovative instruments such as tradable rights, where reductions in subsidies are accompanied by an allocation of rights to use resources in a way that favours the poor. An example would be a reduction in water subsidies being accompanied by an allocation of water rights (which were previously with the state) to user groups;
- The more careful appraisal of investments from an environmental perspective. As noted, multilateral institutions and international banks are moving toward stricter environmental standards in appraising investment projects. IFC (1999) provides an uptodate description of what environmental due diligence is practised by the World Bank in its private sector lending. National authorities are also getting stricter, although they are frequently not as demanding as the international institutions. Hence, investments made nationally, especially by SMEs, receive less scrutiny than the high profile projects, yet their impact on the environment could well be greater.

The areas where the last ten years have seen little change in developing countries are:

- The capacity to design, manage and ensure compliance with environmental norms. This remains a major obstacle to achieving sustainable development through the private sector. Although governments have increased their budgetary allocations for environmental protection, the issues to be addressed have gone up enormously, and the net resources remain inadequate. Furthermore, the incorporation of economic decision-making in environmental ministries is still very limited. The consequence is that enterprises are able to ignore compliance, and get approval for investments that should be subject to greater environmental safeguards. One way around this problem is to use NGOs and civil society groups to assist in the monitoring. Another is to obtain voluntary agreements with industry, through a covenant that requires greater self-policing. Some success stories such as the Pollution Control Evaluation and Rating (PROPER) programme in Indonesia are discussed further below;
- The use of operational sustainability indicators in investment appraisal. One would not expect the private sector to take much account of sustainability in making their investments, unless there are direct requirements or indirect incentives to do so. While the theoretical literature on such indicators has proliferated, national authorities still make little use of them in regulating how the private sector allocates its investment resources. The same also applies to the appraisal of sectoral policies, such as investment incentives and subsidies

to agricultural processing, mechanisation, etc. A proper consideration of the environmental social impacts has not advanced much in the last decade.

Areas where indicators point to a worsening impact of investment on sustainability are:

- Increased investment in private transport, with growing pollution and congestion problems. Almost universally, the indicators in this area are deteriorating and yet there is little progress in providing enough incentives for the private sector (producers as well as users) to re-orient their activities toward a more sustainable policy;
- Use of key renewable resources at rates that are not sustainable. This applies particularly to groundwater, forests and fisheries (Brown and Flavin, 1999). Despite all the fine words at Rio, depletion of these stocks continue at more or less the same rate and the situation has become critical in some regions. Investors continue to exploit them without taking enough account of the implications for the environment and for sustainability.

Conclusions on private sector investment and sustainability

This section has looked at the linkages between private sector finance and sustainability under three headings: privatisation, global environmental protection and local environmental protection.

On privatisation, which is increasingly being used to finance infrastructure provision, case studies point to improvements in environmental indicators and attempts to address the social problems, with some success. On the economic front the case studies also indicate increased efficiency, but they do not cover the full range of experience. In transition economies, in particular, there have been less positive examples. In the future we need more systematic data. We also need to monitor the progress of these enterprises over a longer period, to be certain that the changes are indeed sustainable.

On global provision, the implementation will be very much in the future. The GEF, through the IFC, has contributed to a growing level of private sector participation in energy efficiency and other areas where there is a global environmental impact. The overall contribution to the environmental targets remains small, however, and information on the efficiency of such investments has not been systematically analysed. Other initiatives, such as bioprospecting, and certification of forest products remain small in terms of their overall impact. The greatest potential for private sector involvement in financing solutions to global environmental problems lies in the flexibility mechanisms of the Kyoto Protocol, especially through the CDM, but this is yet to be realised. It is noteworthy, however, that there is a great deal of interest in the private sector even at this early stage.

On the influence of the private sector on the local environment, the picture is mixed. It is positive with respect to improved incentives for efficient environmental protection through the use of economic instruments and reductions in environmentally damaging subsidies. Standards for the appraisal of investments have also risen and now include stricter environmental norms and a more careful assessment of social impacts. The situation has not improved appreciably in developing countries, however, when it comes to capacity for regulating the environment and ensuring compliance. Furthermore, most sustainability indicators have yet to be made operational, so that investments can indeed be evaluated with respect to such criteria. Finally the picture is worse when we look at the growth of private transport and the increased rate of exploitation of renewable natural resources. In both cases the private sector is responsible for much of the investment but it is not responding to signals that the development is unsustainable.

OBSTACLES TO AND OPPORTUNITIES FOR GREATER PRIVATE SECTOR PARTICIPATION IN THE FINANCING OF SUSTAINABLE DEVELOPMENT

In this section we look at the obstacles and opportunities for private sector financing of sustainable development. It is important to begin by noting that not all increases in private sector finance will contribute to sustainable development. Examples have already been given of projects that have seriously damaged the environment, contributed negatively to social sustainability and cost much more in resources than the value of what they produced. Thus, what we are looking for is obstacles to private sector projects that are structured in a way that is consistent with the goals of sustainable development.

From the discussion of the linkages between private sector finance and sustainable development, the following obstacles and opportunities have been identified.

Weak Enforcement of Environmental Regulations

The enforcement of environmental laws and regulations remains a major weak point in the environmental protection systems of many developing and transition economy countries. Some regulations are unrealistically strict and impossible to meet, others are outdated, while the enforcement agencies often lack the resources and political support necessary to do their jobs properly. The capacity to identify, prepare and package environmental investments for financing is under-developed and as a result viable projects go unimplemented. Especially in short sup-

ply are people with the economic/financial skills and expertise needed to undertake cost-effectiveness analysis, business planning and financial/credit analysis.

These factors can be an obstacle to effective privatisation and to adequate local protection of the environment. They can also make it difficult for countries to meet international environmental obligations. These difficulties have been noted in discussion of all these areas of private sector activity.

To overcome the problem, developing countries need much more assistance in capacity building and technical support than they now receive. Multilateral institutions are aware of this and are responding but much remains to be done. Personal experience with Ministries of Environment in many countries reveals chronic under-funding, low morale and inadequate staffing. In addition, the authorities have to depend much more on civil society to ensure compliance. The PROPER programme in Indonesia is an excellent example. Degree of compliance is rated on a colour scheme, which is made public. Information is widely available and local communities discuss and negotiate on poor performance with polluters. The impact on compliance has been substantial and the government plans to extend it from the present 400 factories to 2000 by next year. Following from this, authorities in Colombia, Mexico and the Philippines are starting their own public disclosure programmes (World Bank, 1999b). This is part of a general trend toward informal regulation, which include voluntary agreements as well as eco-labelling and certification schemes (Hafkamp, 1995; Zarrilli, Jha and Vossennar, 1997).

Weak Economic and Regulatory Incentives

A number of economic and regulatory incentives, which could and should encourage environmental investments are simply not as effective as they should be. Despite the reductions in resource use subsidies noted earlier, they remain substantial, and hence a disincentive to efficient resource use. Additionally, economic instruments such as pollution charges and fines, which should serve as incentives for enterprises to invest in pollution reduction, fulfil this function poorly because the base rates are usually very low. While such charges and fines do generate revenues which are often used for environmental protection purposes (that is, through environmental funds), the charge and fine levels are generally so minimal that it is less expensive for the polluting enterprises to simply continue paying them rather than to make investments which would eliminate or reduce emissions. Moreover, some enterprises do not pay charges or fines at all due to financial insolvency, privileged status vis-à-vis regulators, simple non-compliance, etc. This is particularly true in the economies in transition, but applies more generally as well.[10]

The reforms needed for accelerated removal of subsidies are discussed elsewhere in this volume. On pollution charges and other economic instruments, there is little movement toward more realistic charges (there are exceptions, such as China). The situation can only be changed by example, by workshops and training seminars showing how actual cases have worked effectively and how adverse social and economic impacts have been avoided. Technical assistance in Ministries of Environment and Finance are a necessary complement to any capacity building programme.

Problems with Meeting Environmental and Social Objectives in Privatisation Schemes

We noted how privatisation programmes face problems to ensure coverage of the service to poor and vulnerable groups, and how they can ignore the environmental impacts on those outside the scheme. These issues can be tackled through the use of regulatory arrangements, such as "lifeline rates" and cross subsidisation. The consensus appears to be that where there are substantial social objectives, public-private partnerships are a better vehicle than pure private sector operations such as exclusive build-operate-transfer, concession and divestiture. Hart (1998) notes that such schemes can also be the appropriate vehicle when:

- The state needs to share in the rents that cannot be collected through taxation;
- It is a step to full privatisation, which may need some monitoring of private sector performance and when the full value of the privatised entity is hard to determine (in which case there is danger that state assets will be undersold); and
- The projects are too risky for the private sector to take them on alone.

Successful public-private partnerships require mutually agreed objectives and targets, clearly defined roles and responsibilities and "dominant partner management" (one of the two parties retains exclusive operational control) and a sharing of asset ownership so that both parties seek to gain appreciation of their assets and protect them from downside risk.

Unstable Macro-economic Conditions and an Uncertain Regulatory Environment

In many developing and some transition countries, macro-economic conditions are still unstable.

[10] For the Asian experience on economic instruments see Markandya, 1999.

Under such conditions investors of all types tend to be very wary given the high risks involved. Moreover, serious economic fluctuations or high inflation can easily undermine investment incentives which might have been created by positive reforms in environmental policy or improvements in institutional arrangements.

Even in countries where macro-economic conditions have stabilised, there often remains considerable uncertainty with regard to future environmental standards. The environmental regulatory systems are evolving rapidly in many countries, with old laws being reformed or sometimes entirely replaced. The pace of evolution varies considerably from country to country and even within countries according to specific law or environmental sector. Generally, markets are developing more quickly than regulatory regimes, resulting in pressures on governments and enterprises to act (that is make investments) often without sufficient knowledge as to what standards they will be required to enforce or comply with in the future. While new regulations may be coming down the pipe to replace the old, how do enterprises know what actions to take and investments to make, in order to be "in compliance"? For those Central and East European (CEE) countries in the process of acceding to the EU, standards provide the benchmarks for future environmental regulations. Nevertheless, the accession process, even for the earliest entrants, is expected to last a few (or more) years and the uncertainty will continue for some time to come.

Measures to reduce uncertainty of investments have been discussed extensively in the literature. Whereas in countries with high sovereign credit ratings it is possible for commercial banks to bear the risk, this is not possible in many developing countries and most transition economies. The banking sectors of many developing and CEE countries are still under-developed and under-capitalised, unable or unwilling to extend medium to long-term loans at affordable rates (if at all), inexperienced with environmental investments and unwilling to assume the perceived risks associated with such investments. The result is that commercial capital is often not available for environmental investments which often require longer pay-back periods than other types of investments and have lower rates of return, or are prohibitively expensive for potential borrowers. In these circumstances, opportunities for private sector investment can be created through:

- International institutions reducing investment risk by a careful appraisal of the prospects;
- Multilateral and export credit agencies underwriting political and regulatory risk;
- The central government underwriting risk of default by the local authorities; and
- The government declaring its environmental intentions clearly in advance and sticking to them.

Ideally, any remaining risk should be borne by someone who has an incentive to minimise his impacts on the project. The danger of moral hazard arises if that is not the case, so that if political risk is subsidised to the investors, they will invest more than would be justified if they had to take account of the risk.

Low Support for Environmental Protection

Public and political support for environmental protection activities, and the expenditures they necessitate, is often not strong enough to compel or stimulate investment. Public pressure for strengthened environmental protection is weak in many countries and this translates into low interest and support among politicians and other influential decision-makers. A lack of information and understanding about the true costs and benefits related to environmental protection can lead to other, seemingly more immediate priorities (e.g. meeting basic subsistence needs, paying the rent, maintaining or finding jobs) superseding the relative "luxury" of improving environmental conditions. Environment lobbies in these countries, while gradually becoming more professional and effective, especially as public participation in decision-making becomes more of a reality than a catchy phrase, remain weak compared to other social and commercial interest groups. Until this situation changes significantly, the policy and institutional framework necessary to generate substantially increased environmental investments will be slow in developing.

To some extent these problems reflect the realities of the situation — there are indeed more important issues whose call on scarce resources should come first. It would be wrong to "force" an environmental agenda on such countries through conditionalities that reflect priorities in the North. Where, however, there are genuine national interests of which people are not informed, or where vulnerable groups are being marginalised, the international community can serve the cause of sustainable development by making this information available to the affected parties. It can also support the civil groups that are seeking to bring the issue onto the national agenda. The danger to be avoided in the latter case is being accused of external interference and undermining the efforts to strengthen governmental institutions such as the Ministries mentioned above.

Equity, Lack of Transparency and Political Acceptance

The privatisation discussion noted the difficulties of political acceptance when privatisation is undertaken without transparency or when it is seen to benefit a few people disproportionately. This has been the experience in Russia with much of the state

sell-off, especially in the area of natural resources (Markandya and Averchenkova, 2000), in Malaysia with a national sewerage scheme (Gentry and Fernandez, 1998), and in Pakistan with the Hub River Power project (Financial Times, 1998). In many countries the process of privatisation has meant that great wealth was being accumulated at the same time that many people were facing increasingly desperate poverty. This has become a major source of social conflict and a number of researchers have drawn attention to the importance of this phenomenon in explaining the poor growth performance of several countries (Aslund, Boone and Johnson, 1996; Rodrik, 1998). As Rodrik (1998) notes,

> "When social divisions run deep and the institutions of conflict management are weak, the economic costs of exogenous shocks…are magnified by the distributional conflict triggered. Such conflicts diminish the productivity with which a society's resources are utilized in a number of ways: by delaying needed adjustments in fiscal policies and key relative prices, by generating uncertainty in the economic environment, and by diverting activities from the productive sphere to the redistributive one."

Another way of looking at the problem is in terms of social capital. As Knack and Keefer (1997) note, where social capital is high, there is less resort to litigation and/or criminal racketeering to enforce contracts. Building up such capital means ensuring that the process is not only transparent, but also that it is equitable and does not result in substantial social exclusion. That in turn depends on the creation of strong democratic institutions and open government.

Equity Concerns and International Political Acceptance

The above concerns at the national level are echoed at the international level, where the acceptance of regulatory measures depends not only on their economic efficiency but also on their perceived equity. The Kyoto Protocol is an important case in point. If the flexibility mechanisms are to work, and indeed if the Protocol is to be ratified and implemented, all Parties have to feel that the arrangements are equitable. Presently, some in the United States take the view that developing countries should make some commitment to GHG reductions. The EU's position, and that of many of the G77 countries, is that no party should be able to "buy" themselves out of their commitment, by purchasing from another country its excess emissions reductions. Other developing countries are apprehensive about the implications of CDM deals in which the rich countries will dictate terms through controlling certification and having power over the financial institutions.

All these are driven in part by equity concerns. The solution has to be through negotiation and seeing both sides of the case. The imperative of the global problems facing the planet should concentrate the minds of the negotiators and it is encouraging that this complex issue has made as much progress as it has. But much needs to be done. The opportunities for all parties to gain from actions that protect the global environment are great; it will take a strong "demonstration effect" of successful projects from which all Parties emerge satisfied, for the process to gather momentum.

CONCLUSIONS

That the private sector has a major role to play in financing sustainable development is something no one would argue with. The questions are about how this role should be exercised; which are the areas where it can be effective and where is it less likely to make a contribution? In evaluating the actual and potential contributions of the private sector we must look at all dimensions of sustainability, not just the environmental, which has been the focus of previous work in this area. Hence a social and economic assessment is also required.

In the enthusiasm to promote the private sector, writers sometimes give the impression that its role vis-à-vis the public-sector has expanded enormously. Likewise, the trends in globalisation create the impression of a major change in the share of FDI in total investment. Both are only partially true. The public sector has not contracted as a provider of economic goods and services in many developing countries and has only contracted a little in others. FDI accounts for around 7 per cent of total investment although its share has been growing throughout the developing world. The other components of financial flows to developing countries have also increased, and the structure has changed substantially. Bank lending is a smaller share in general (Latin America is an exception) and equity and bond finance has risen in some regions and declined in others.

The paper goes on to look at specific trends in private sector finance, beginning with privatisation and infrastructure investment. Privatisation is an important potential source of finance for sustainable development and is growing in popularity, although it is rarely the main source of provision of key infrastructure services. The experience with private provision of what was previously a public sector activity has generally been good with respect to the economic dimension of sustainability. On the environmental and social dimensions the evidence is less clear but the few examples provided point to some progress on both these fronts. More systematic evidence is needed, however, and there is a concern that what is documented is the "good side," often because it relates to the activities of the multilateral institutions. Furthermore, some sceptics argue that, given poor monitoring capacity in most developing countries, can the

privatised companies be expected to continue to provide the services in a way that maintains progress toward sustainability?

The second specific trend relates to the financing of global environmental protection. Here much has been promised for some time but little has been delivered so far. The expectation is that this will change in the next decade, especially with the flexibility mechanisms of the Kyoto Protocol. It is noteworthy, however, that there is a great deal of interest in the private sector even at this early stage. Other initiatives, such as bio-prospecting, and certification of forest products remain small in terms of their overall impact, and are unlikely to become major areas of activity. Nevertheless they may provide important services to some communities and certain niche markets.

The third area of change for the private sector has been with respect to its impacts on the local environment. Here the picture is mixed. Positive aspects include improved incentives for efficient environmental protection through the use of economic instruments and reductions in environmentally damaging subsidies. Standards for the appraisal of investments have also risen, with stricter environmental norms and a more careful assessment of social impacts. The situation has not improved appreciably in developing countries, however, when it comes to capacity for regulating the environment and ensuring compliance. Furthermore, most sustainability indicators have yet to be made operational, so that investments can indeed be evaluated with respect to such criteria. Finally, the picture is worse when we look at the growth of private transport and the increased rate of exploitation of renewable natural resources. In both cases the private sector is responsible for much of the investment but it is not responding to signals that the development is unsustainable.

From this review of the performance of the private sector, a number of obstacles and opportunities have been identified. These are:

- Weak enforcement of environmental regulations;
- Weak economic and regulatory incentives;
- Problems with meeting environmental and social objectives in privatisation schemes;
- Unstable macro-economic conditions and an uncertain regulatory environment;
- Weak support for environmental protection;
- Lack of equity transparency and political acceptance; and
- Equity concerns and international political acceptance.

For each of these, actions are proposed to overcome the obstacles and exploit the opportunities.

On the enforcement of regulations, more resources, especially external assistance, are needed. But this will not be enough; the whole system of regulation, monitoring and compliance has to be changed, with greater use of informal methods and greater involvement of civil society.

On weak economic and regulatory incentives, the continued reductions in non-targeted subsidies for resource use need to be maintained. Economic instruments need to be applied at more stringent levels if they are to have an incentive effect. This can only be achieved by example, by showing how such schemes have worked elsewhere and how adverse social and economic impacts can be mitigated.

On the problems of meeting environmental and social objectives in privatisation, the regulatory framework can respond to meet these challenges, as the success stories show. The reasons why other cases have been less successful need to be analysed further. Reviews of programmes indicate that public-private partnerships may work better in meeting broader sustainability goals but they have to be structured in a very precise way if they are to succeed.

The uncertainty issue is a key one for private sector involvement in infrastructure and environmental projects. Unless the level of uncertainty is reduced, private sector involvement will not be forthcoming. In some cases this reduction cannot be made without excessive cost; these are situations where the private sector should, perhaps not be involved. In others, a combination of support for a careful appraisal of the projects, clear and declared government policies, and selective government and multilateral/export credit agency risk guarantees are required.

In some countries support for environmental protection is weak and the private sector cannot be persuaded to provide the investments for that reason. To some extent this may be a reasonable ordering of priorities and it would be wrong to "force" an environmental agenda on such countries through conditionalities that reflect priorities in the North. In other cases, however, the level of interest is too low because vulnerable groups are being excluded from the polity and individuals are unaware of the effects of the degradation that they are experiencing. In such case the international community can assist in providing the necessary information and in supporting the civil groups that are seeking to bring the issue onto the national agenda. The danger to be avoided in the latter case is being accused of external interference and undermining the efforts to strengthen governmental institutions.

On the lack of transparency and equity the principles are clear. Governments cannot act without some democratic agreement in the area of privatisation. The selection of parties to deliver the services must take place through some kind of competitive process and they must not be seen to be excessively rewarded for their services. Failure to observe these conditions results in lack of success for the project itself and has ramifications for other privatisation programmes.

Finally, there are equity concerns for acceptance of regulatory measures at the international level. This applies to all parties, not just the developing countries. The way to overcome this, and to take advantage of the huge opportunities available for sustainable development as a result of the global treaties, is to show, by example, that the schemes can work to everyone's benefit. That implies a gradual process, but one that has started with some optimism in the last few years.■

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THE GREENING OF FINANCIAL MARKETS

Carlos Joly[*]

EXECUTIVE SUMMARY

Since the 1970s, public awareness of environmental problems has led to environmental laws based on command and control regulations. Another important development which harnesses market forces efficiently has been the development of environmental liability legislation. Environmental liability has made risks real for companies and investors. Although it has made for losses, it has also created significant business opportunities for innovative companies with good management. Hence the emergence of corporate environmentalism. Leading corporations are adopting environmentalism and corporate social responsibility as drivers of brand differentiation, product development and competitive advantage.

Though the financial community has been a laggard, particularly as regards investment portfolios, some major banks, insurers and investment managers are now at the point of making the further business link from corporate environmentalism to sustainable finance. Sustainable finance will mean not only that investors will disinvest in some stocks they would otherwise hold but also that they will seek out and be overweight in firms which are eco-efficient and gain competitive advantages through good environmental and social practices and image.

This process is being accelerated by government acting in creative ways. One way is demand creation through reporting legislation which obliges pension funds to state their policy on socially responsible investment; for example, recent UK legislation. Another way is the application of environmental screening to government-controlled funds, for example, as being considered by the Ministry of Finance for the Norwegian Petroleum Fund.

In short, in the US and Europe we are beginning to see the outlines of a virtuous circle, connecting public concerns, environmental legislation, corporate environmentalism and financial markets. The concept of fiduciary responsibility is in the process of being expanded to include the broader interests of the owners of capital, beyond short term profit maximization at any social or environmental cost.

This paper describes this process, identifies particular barriers to sustainable finance in developing markets, and on this basis proposes policies and instruments for surmounting these barriers, including the introduction of appropriate liability legislation; the adoption of environmental reporting requirements for initial public offerings and listed companies; the introduction of expanded fiduciary responsibility for pension funds; the introduction of environmental and social screening for government funds; and the creation of investment objects designed for international investors which satisfy certain sustainable finance criteria.

[*] Carlos Joly is Senior Vice-President and Head, International Investment Management and Pensions, Storebrand ASA, Norway.

INTRODUCTION: CORPORATE ENVIRONMENTALISM AND FINANCIAL CONSERVATISM

THE dangers of environmental degradation have been recognized throughout history and in different cultures.[1] Concern for nature has been reflected in Western philosophies in different ways, whether nature is seen as independently valuable in itself or as a resource which is instrumentally valuable for mankind.[2] But it is only during the past 25 years that the importance of the environment has gained prominence as a political and economic issue. In North America, Northern Europe and Australia, we have seen a dramatic change in corporate environmentalism.[3] This change follows from two important developments.

First, there is the issue of public concern. Books like the Club of Rome's *Limits to Growth* (Meadows, Meadows and Randers, 1972), Schumacher's *Small is Beautiful* (1973), and Carson's *Silent Spring* (1962) galvanized growing public awareness. During this decade, several catastrophic events were widely publicized and became engraved in public conscience: Three Mile Island (1979, USA, cost $2 billion), the Sandoz chemical spill (1986, Basle, cost $50 million)[4] Chernobyl (1986, Ukraine, cost $14 billion), Exxon Valdez (1989, Alaska, cost $7 billion), brought to life the potential risks (Business and Environment Programme, 1997).

Second, in connection with the growing importance of the environment in local and national politics, governments enacted legislation which linked environmental risk to financial risk. The social and political context determining the environment issue became significantly broader and itself an important factor in bringing about corporate policy change. Hoffman (1997, 197) states that "Evolving perspectives of what constitutes heresy and dogma in a given industry depend not just on costs and regulation but on the full social, political, and economic system of which the industry is a part."

The first industries to embark in large scale environmental overhaul were the heavily polluting industries which bear the brunt of pollution laws and regulations: chemicals, manufacturing, the smokestack process industries, oil refiners and car makers. This trend began in the eighties and continues today. Food manufacturers, electronics and a variety of manufacturing and service sectors, including hotels[5] and restaurant chains,[6] have started changing their approach to environmental action in the course of this decade. Many companies have responded forcefully and with remarkable creativity–IBM, Novartis, 3M, SAS, Skandia Hotels, Cellulosa de Aracruz, Electrolux, and the company I work for, Storebrand, to name a few. A number of business associations were formed to address the needs of information exchange and development of best practices and standards, such as the International Chamber of Commerce's International Environmental Bureau (IEB), the World Environment Council (WEC), and the World Business Council for Sustainable Development (WBCSD). In the UK, organizations like Business in the Environment and The Prince of Wales' Business and Environment Programme at Cambridge have served to educate and mobilize executives. And annual Environmental Reports have become standard issue for multinational companies wanting to develop a socially responsible brand image.[7]

In short, corporate environmentalism is becoming mainstream practice. Environmental policies, in accordance with regulations and beyond it, are no longer an exception. They have become standard practice in many key industries.

However, the financial sector has not kept up with these changes in corporate environmental policies. Most banks, insurers and pension funds have been slow to acknowledge and respond to environmental risks as potential financial risk. We have been dogged by myopia and scepticism, as well as a genuine lack

[1] The Cherokee, for example, believed in the Seventh Generation Principle, namely, that whatever decisions or actions affected the tribe as a whole should be taken with a view towards their consequences on seven future generations. This principle applied directly to how to live with and treat the environment. Oehl (1972).

[2] For a review of environmental ethics and philosophies of nature, see Attfield (1994) and Zimmerman and others (1993).

[3] For a good history of corporate environmentalism see Hoffman (1997).

[4] The Basle fire is a particularly interesting case as it has practically all the elements to illustrate what moves a corporation to really change. Basle is a small town but it is home to major chemical companies. These giant companies (Sandoz, Ciba, Hoffman) stem from silk dyeing centuries ago, in the days of the silk trade with the East. They located in Basle because of its location on the trade routes and its river, which provided a natural and easy waste dump. Progress, prosperity and pollution went hand in hand for centuries. The chemical fire at Sandoz shocked the city and its people, because the plants are in the city, where the senior managers, scientists, workers, all live. This immediacy is probably an important reason why these companies developed such a proactive approach to accident prevention and pollution prevention ever since, often going beyond the requirements laid down by regulations.

[5] Most notably the Scandic hotel chain, based in Sweden.

[6] McDonalds has gone from styrofoam to paper packaging, mostly in response to activist demands.

[7] Whereas in 1990 only a handful of companies issued environmental reports, in 1998 and 1999 over 2000 companies are issuing them.

of analytic tools, comparable data, and the absence of environmentally-trained investment analysts.

Most professional investors believe that environmental and social concerns are irrelevant or detrimental to generating good investment performance. Very few actually read corporate Environmental Reports. As the Tomorrow magazine (No. 4, 1999, p. 24) summarily states in their recent issue on finance and the environment, "financial research analysts remain sceptical about the value of strong environmental performance."

Most pension fund managers and trustees of charitable foundations have claimed that they cannot change their investment policies to integrate environmental and social dimensions without at least a three year track record of investment performance to prove that it will not impact returns negatively.

The lack of databases, measurement tools, commonly accepted standards and benchmarks has been a real problem. For those of us who have experimented and developed prototypes, it has been an additional cost factor. Today, however, this is less of an impediment, as a number of environmental and social rating providers are now vying for business in this field, and are offering rating systems based on eco-efficiency and other indicators. Saracin Bank, Innovest, Eiris, SERM, IRRC, Sustainable Asset Management (SAM), Storebrand and others have developed systems and applications that work. Now that various environmentally-screened funds have achieved competitive three-year track records, it is becoming clear these results are not just luck but are systematic, measurable and sustainable. The beginnings of financial environmentalism are in sight.

This paper outlines the evolution from grass roots environmental awareness to the emergence of capital market environmentalism in developed markets. The purpose is to describe this process in order to derive lessons which might be applied to emerging economies. My aim is to identify action-oriented policies and instruments which could help speed up the process in emerging markets. The pace of environmental devastation in developing countries requires reforms that will help business leapfrog over stages that have taken twenty to thirty years in developed markets. Can we build on existing mechanisms to accelerate the necessary changes? Which reforms and practices would be most effective? What should be emphasized?

LIABILITY LEGISLATION AS A CATALYST FOR SUSTAINABLE FINANCE

In the past five years a few major financial corporations, banks, such as SBC, NatWest, Bank of America, insurers, such as General Accident, Swiss Re, and money managers, such as Salomon, Skandia, Storebrand , as well as some Swiss private banks have begun to internalise the fact that environmental matters are money matters. A noteworthy and promising development are the two voluntary initiatives of banks and insurance companies, the UNEP Banking Initiative and the UNEP Insurance Industry Initiative, which have gained over 200 signatories worldwide.[8] These initiatives have served as catalysts for the exchange of experiences and ideas.

What is really behind this change? Why is it happening? First we must acknowledge the role of legislation in creating the conditions for market demand. In what follows, I show how legislation can serve as a catalyst for change in financial markets, how bankers, insurers and investors respond, what it means to do environmental screening of investment portfolios, and point out two innovative actions by government that will, in my view, serve to change investment practice significantly.

Legislation and Response

The importance of legislation in controlling pollution by requiring industrial remediation or imposing fines is broadly recognized. But beyond the command and control aspects of legislation there is a less acknowledged force: the power of liability. Financial liability is created when environmental legislation identifies a responsible party who must pay for an environmental harm, and defines a cost or an indemnification to be made. A crucial extension is when legislation makes a lender or owner co-responsible. When environmental legislation makes the link between an environmental harm, an economic activity, and the financiers to that activity, there is then financial motivation for the financial sector to act responsibly. The first step, the sine qua non, is therefore to put laws in place that make the link. Once the conditions are defined in legislation, then the financial risk to lenders, insurers, and investors is actualised and begins to be accounted for. Capital will seek to avoid the risk, will reflect it by discounting the price of assets at risk, or will increase the cost of capital. Pollution may just become too expensive.

Superfund legislation in the US, which penalizes owners, lenders and insurers of contaminated land, does just that. When laws effectively put a cost on pollution and identify a responsible party, this is a very powerful tool in a marketplace economy, through both its direct and its ripple effects.

To understand the environmental importance of this link, simply think of all the instances where environmental harms, like global warming, overfishing, or deforestation, are not internalised by legislation in the cost of a product or production process. Market

[8] See UNEP website for text of Declarations, list of signatories, and other news. Also see Joly (1997).

forces need governmental action because markets alone do not reflect or internalise environmental costs and risks into the economy.

To understand the financial importance of this link, think of anti-pollution legislation such as the Clean Air Act, Superfund, and asbestos remediation and the financial liabilities in the billions of dollars that these pieces of legislation have given rise to. These ongoing systemic liabilities, including taxes on air and water emissions, leakage from pipelines, underground gasoline storage tanks and toxic waste dumps, are in addition to, and distinguishable from, the single-event liabilities emerging from major events of accidental pollution, such as oil spills from shipping accidents. Environmentally risky financial engagements (be they loans, asset purchases, asset sales, insurance coverage, or stock purchases) suddenly needed to be carefully qualified or even avoided, on purely financial grounds, to avoid losses. Thus, many banks in the US, for example, stopped making loans to gasoline stations at risk from leaky underground storage tanks and stopped making mortgages against real estate assets at risk from ground pollution which occurred through the actions of earlier owners. Current owners became responsible for pollution under earlier owners, and made lenders, under certain conditions, co-responsible for clean-up liabilities. In some cases, the costs of cleanup exceeded the value of the asset, leaving the lender with a double hit. Such risks have caused buyers to get an expert opinion as to existing or potential pollution liabilities in connection with asset or company acquisitions; in certain cases deals have had to be renegotiated or cancelled.

Leading insurance companies took notice of the implications. In 1995, at a meeting of CEOs of multinationals who are members of the WBCSD, Åge Korsvold, CEO of Storebrand, said: "Existing environmental risks translate into direct financial risks as a result of legislative requirements. For example, remediation of underground fuel tanks, oil and chemical spills at sea or on land, contaminated ground associated with real estate, investments in plant and equipment to resolve soot and sulphuric acid air problems, investments in technology to avoid or preclude toxic emissions from process industries, the viability of fertilizer and pesticide industry products, and how we can best manage our own sizable forestry holdings in Norway; all these items can and do have direct financial impact to our portfolios and our bottom line. In addition, since businesses and consumers are increasingly looking at the eco-efficiency aspects of products as they make purchase decisions, we as investors have to track how this affects the competitive strength of companies we invest in or lend to."

The following year, in 1996, Storebrand put in place its Environmental Action Plan and justified it on three grounds. For one, the company built on its recognition that environmental risk_is financial risk, particularly in property and casualty insurance, and particularly in the areas of storm damages, flooding, toxic releases, ship insurance. This resulted in adjustments to insurance underwriting and investments in accident and pollution prevention. The idea, simply stated, is that loss prevention increases profits, and so we invested in various environmental loss prevention programs to teach our industrial clients how to be more careful.

Second, we wished to be more responsive to our customers' wishes and increase their loyalty by strengthening our brand image. We did a survey among our customers and found that over 40 per cent felt strongly that insurance companies should engage in socially responsible activities like environmental improvement, loss prevention and violence prevention. We put an action plan in place for this.

Third, we wanted to try to devise a way to reflect environmental considerations in fund management, without sacrifice to financial performance.

If one side of the equation is risk, the other side is opportunity. Along with the recognition that environmental risk entails financial risk came the realization that environmental risk can also create financial opportunity. Innovative investment managers decided to explore how they could improve the financial performance of their portfolios by eliminating risky enterprises and including those that gained competitive advantage by having better control over environmental risks by being more eco-efficient and by creating product advantages, companies such as Michelin, Volvo, Electrolux, and Scandic Hotels.

Thus was born environmental screening in investment management, which is addressed in more detail below.

Environmental Screening of Investment Portfolios

If pollution, be it accidental or systematic, affects the balance sheet by creating liabilities, it perforce has to affect, sooner or later, company valuations. This realization has given rise to a new class of mutual funds, eco-efficiency funds or sustainable development funds which seek to invest in companies that meet certain well-defined sustainable development criteria. The first two funds of this kind in Europe, which seek to apply positive screening criteria rather than negative screening, were Bank Saracin's Environment Fund, created in 1995 and Storebrand's Environmental Value Fund, created by the author in 1996. In 1998 SBC and Credit Suisse began to implement sustainable development criteria into some client portfolios. Around the same time, two Swedish banks also launched environment funds (SEB and Foreningsbanken). Today, banks and insurance companies in Germany, France and the UK are racing to copy the idea. Why? Because mainstream banks are sensing that pension funds and individual investors

may become interested in sustainable development as an investment theme.

Let us consider how environmental issues can affect stock price and then see how one can operationalize this in practice to do actual stock picking for investment portfolios. How does stock price respond to environmental issues?

If investors perceive a company to be environmentally at risk, then its stock price will be negatively affected, other things being equal.[9] The investor's perception as to whether a company is at environmental risk depends itself on a wide variety of elements:[10]

- the realities of its pollution emissions and direct costs associated with their remediation or control (e.g. costs of plant retrofitting);
- the life cycle pollution impacts of its products and their associated costs or the extent to which they create competitive advantage or disadvantage (e.g. relative advantage of manufacturing fuel-efficient cars—the Japanese strategy in the seventies, or energy-efficient appliances–Electrolux);
- the competitive advantage of certain products (e.g. recycled paper that handles better in copy machines, plastics that can be recycled, non-toxic anti-fouling paints for ship hulls, etc.)
- what the environmental NGOs believe on specific single issues and how powerfully they can mobilize public opinion (e.g. what Friends of the Earth thinks about PVC, what Greenpeace thinks about sinking an oil platform, what the Greens think about GMOs, what Naturvernforbundet thinks about herbicides, etc.);
- what the general press writes about and what the financial press picks up;
- the extent to which investors think negative NGO comments and negative press on a specific issue will affect a company's market share, marketing costs, product development pipeline, client or supplier relations, or general reputation;
- the impact of class action suits or of retroactive government actions;
- the impact of existing and new environmental regulations or treaties;
- the extent to which an investor thinks other investors will act or not on available information. This is the magnification effect of marketplace behaviour. If I think an issue/risk is really not an issue/risk but think other investors will react as if it were a real issue/risk, and if I can act in anticipation of their reactions and profit thereby, then my investment style might lead me to act, even though I think the issue at stake is without merit. Most portfolio managers don't care whether environmentalists are correct on a particular issue. They just want to be under-or-over-weighted in the right stocks. Being "in the market" and having to deliver competitive returns means that managers of ethical or environmental funds find themselves acting from time to time much more in line with the public's perception of risk than with objective risks as such. (Whether this form of political correctness is ethically sound makes for an interesting but separate discussion.)

Needless to say, the extent to which a company's environmental image and risk can become an important element in its stock price varies from industry to industry. In insurance underwriting, for example, the stock price of several British insurers practically halved as the extent of their Superfund liabilities became known. In biotechnology, Monsanto's stock currently trades at a discount of about 25 per cent due to public worries about how the company is handling the GMO issue , and we find numerous examples in the shipping and construction industries. Other industries are perceived, rightfully or not, as low polluters and at low image risk, an example being the high tech industry. This notwithstanding, there are on the whole, in several important sectors, a variety of negative and positive items that are factoring into the image and environmental risk assessment of a company, and that hence determine their pollution discount or environmental premium, (De Simone and Popoff, 1997).

Let me now explain how environmental screening can work, by illustrating with the Storebrand Environmental Value Fund, which I created several years ago.

The point of departure is the concept of eco-efficiency. This concept was formulated by the WBCSD in 1995 and is defined as follows: "the delivery of competitively priced goods and services that satisfy human needs and bring quality of life, while progressively reducing ecological impacts and resource intensity throughout the life cycle, to a level at least in line with the earth's carrying capacity" (Joly, 1990).

We took this definition and operationalized it by focusing on eight criteria, as follows:

- Intensity of energy use;
- Intensity of water use;
- Environmental management quality;
- Global warming;
- Ozone depletion;
- Material intensity;
- Toxic releases;

[9] See discussion and literature review in Joly, Knecht and Ross (1997).

[10] For a good comprehensive overview of environmental factors in industry, see Fussler (1996).

Figure 1

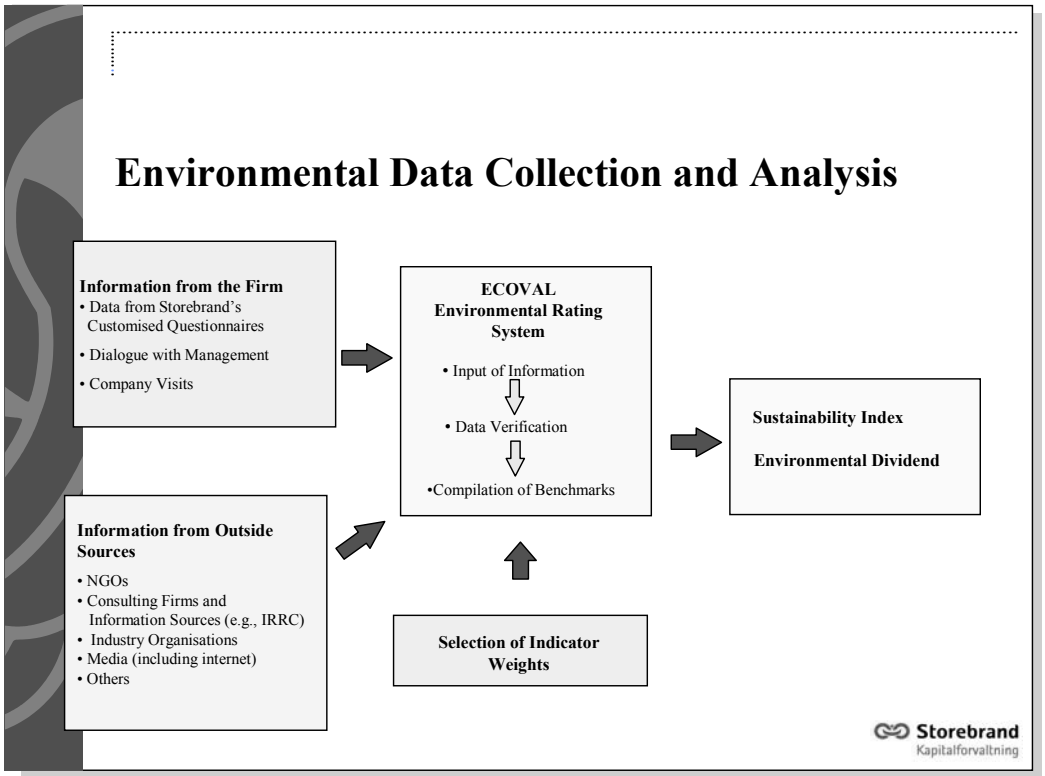
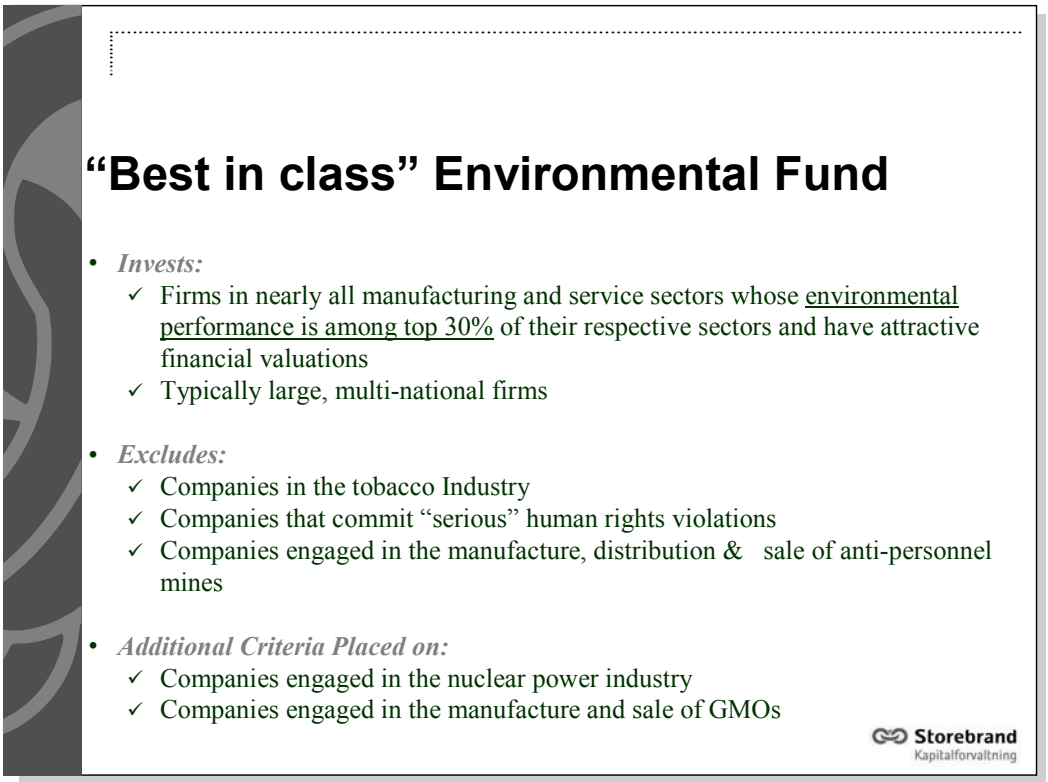


Figure 2



- Environmental liabilities.

We collect data from companies about their performance along these eight criteria of eco-efficiency, relative to company size. Tons of toxic releases, energy and water use, etc., are reviewed relative to sales volume. The important thing is to compare how a company measures up relative to its competitors in a particular industry, so as to be able to create a comparable ranking to select best-in-class companies (figures 1 and 2).

Environmental and some social information on companies is collected through a variety of ways, principally through our detailed questionnaires, but also from company reports, NGO reports, specialist studies, and conversations with management (figure 1).

Our analytic procedure is aimed at constructing benchmark indicators within each industry for each of the eight eco-efficiency criteria we focus on, which then allows us to see how each company ranks relative to its competitors in an industry. Each industry has its own factor weightings, thus reflecting the greater importance of some criteria over others in given industries, for example, toxic emissions are critical for the chemical industry, while environmental lending risk analysis is critical for banks.

This procedure gives us the ability to reach our goal: the construction of a globally diversified portfolio of best-in-class stocks, representing most industrial sectors (figure 2).

The purpose of the analysis is to be able to identify what we call "sustainable winners", companies that are eco-efficient and have environmentally sustainable products (figure 3).

In addition to being environmentally sustainable, the companies we select must be financially attractive and fulfil our expectations for stock price appreciation. The point is to create a portfolio that reflects good environmental performance and at the same time achieves competitive investment returns.

What kind of investment results does this procedure yield? Consider figures 4 and 5 which show the fund's performance since inception three years ago, relative to the Morgan Stanley World Index which tracks performance of stock markets worldwide. This is the benchmark against which we measure our fund. In the three years since its inception, the Storebrand Environmental Value Fund has delivered over 60 per cent return on investment, after deducting all fees and costs (figure 4). How does this compare relative to global equity funds that do not undertake environmental and social screening? Figure 5 shows two things:

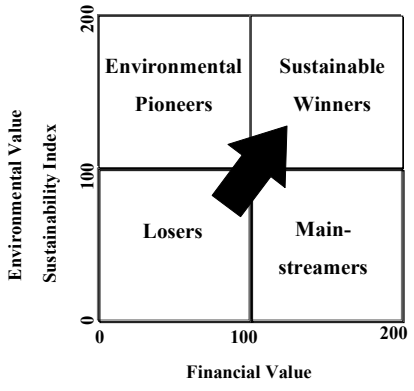
- the Storebrand Environmental Value Fund outperforms most traditional global equity funds; and
- most environment funds underperform normal global equity funds.

How should we interpret these finding? First, I believe part of the reported underperformance of most

Figure 3

Storebrand's sophisticated environmental analysis approach can enhance the financial performance of traditional portfolios (increasing returns and reducing risk) through the selection of sustainable winners.

Sustainable Winners



Sustainable Winners

- Companies with attractive valuations
- Eco-efficient companies (within most industrial sectors)
  - ✓ Companies that use less resources and materials per unit of sales
  - ✓ Companies that minimise environmentally-related risks
- Companies that produce products and/or services that have fewer environmental impacts than their competitors' products.

Figure 4

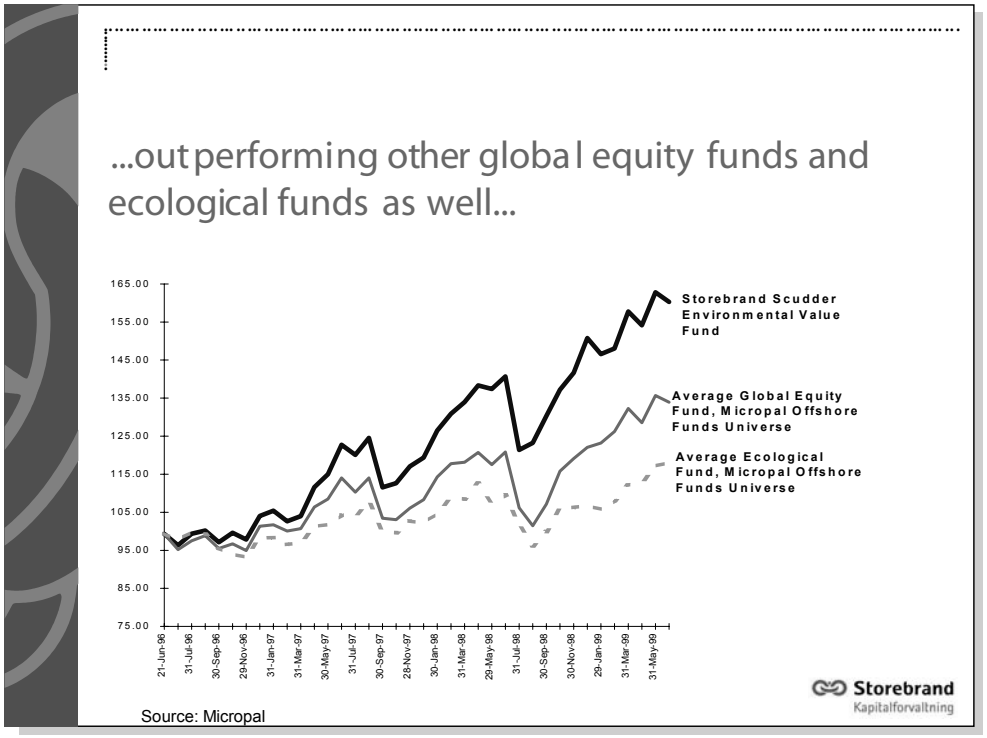


Figure 5

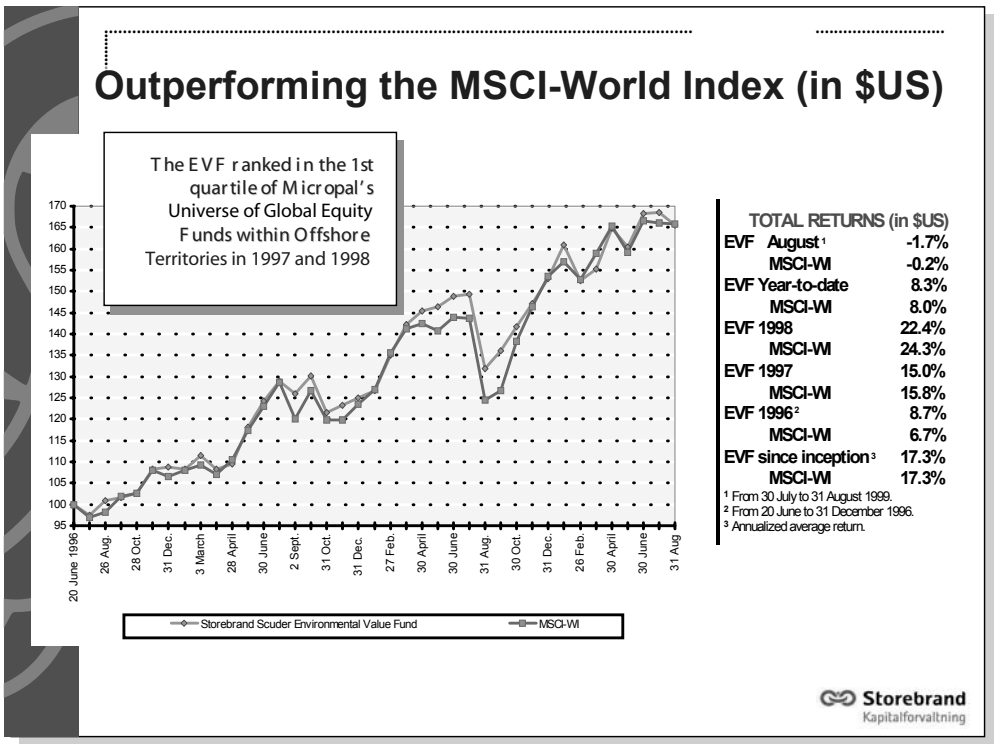
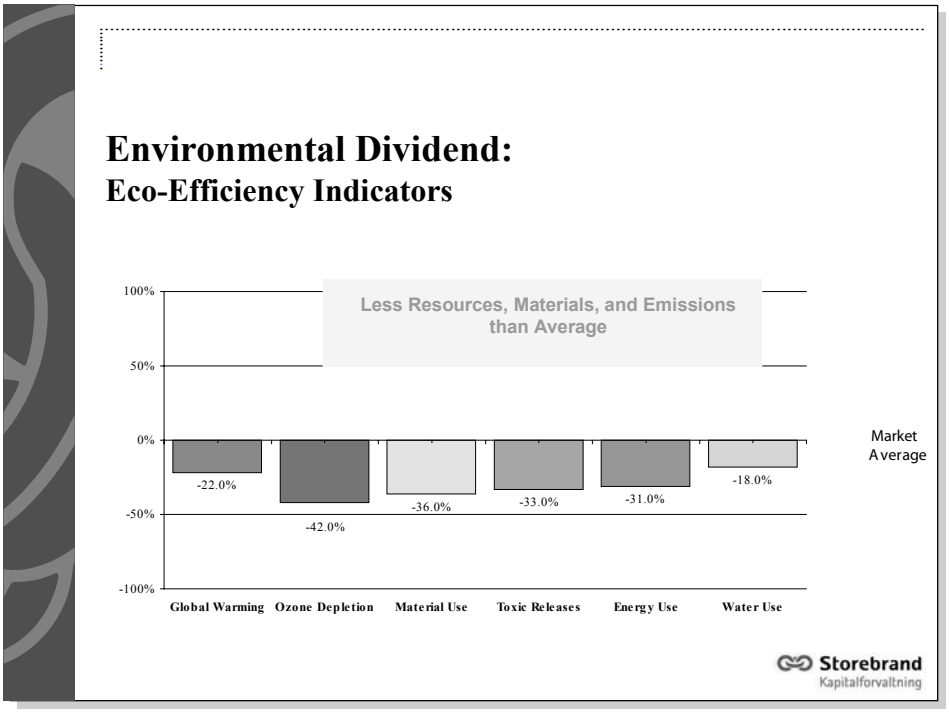


Figure 6



environmental funds is due to the fact that the Micropal universe of ecological funds is heavily weighted with green funds which have performed less well and that the performance of the eco-efficiency/ sustainable development funds tend to do relatively better. Second, few environmental screening methods are well-integrated with sophisticated stock-picking or stock index-tracking methods. I believe there is nothing inherent in environmental screening itself that tends to lead to financial underperformance, but rather that environmental screening needs to be operationalized correctly and connected with the best modern portfolio construction techniques. When this occurs, as in the case of Storebrand's fund, the synergistic effect of good eco-efficiency screening and good portfolio construction and stock-picking creates overperformance. When it does not occur, the underperformance can be explained equally well by the mediocrity of the investment manager's financial analysis and portfolio construction.

A relevant question is whether an environmental fund of this nature is good for the environment and not just good for its investors. As part of our analytics and reporting, and given the robustness of our database which comprises over 800 companies, we are able to demonstrate the extent to which the investments in the fund pollute less than a traditional global equity portfolio typically, does. We call this report the Environmental Dividend (figure 6).

To the best of my knowledge, Storebrand's Environmental Value Fund is the first of its kind to have the capability to report, quantitatively, its environmental performance along with its financial performance.

What we see, then, is that some investment managers have developed tools and techniques for incorporating environmental considerations into investment portfolios, but that the large pools of money in pension funds and life insurance rarely seek to utilize these tools and techniques. This is unfortunate because corporate environmentalism and its virtues will not become truly sustainable until capital markets recognize and reward its value-enhancing aspects. What will bring this change about? As I indicate below, reporting requirements initiated by the UK government are one way of making change happen.

Private Sector Innovation and Public Sector Demand Creation

The private sector has created the environmental screening products. But pension funds have not taken them up, due to their conservatism and other reasons. Two recent developments, one in the UK and the other in Norway, indicate how governments can change this attitude and act as a market catalyst by creating demand pull.

The Norwegian Petroleum Fund was created by the Norway two years ago to manage the surplus

from exploitation of the country's vast oil and gas reserves. It is being put aside to fund future social security pension shortfalls and is invested in its entirety in foreign stock and bond markets. The current government wishes to integrate environmental and, if possible, social values into how these funds are invested. To this it is in the process of creating a $150 million Environment Fund to test the concept. Since the Petroleum Fund will total $30 billion in the year 2000, this test, if positive, has the potential to lead the way.

The UK government is also acting in an innovative fashion. Acting through the Pension Act (1995), it will require that from July, 2000 all private sector occupational pension schemes consider social investment within their Statement of Investment Principles. I believe this will prove to be a watershed event, even though it has received relatively little public notice, even within the UK. A number of the larger UK banks and investment managers are moving to develop environmentally and socially-screened fund products to meet the market need which this legislation is expected to create.[11]

There are three main reasons, under this new requirement, why pension schemes may adopt a social investment policy. First, to reflect an employer's own values on the environment or social concerns. Second, because they see ways in which ethical, social and environmental factors can affect risk or return—as discussed above. Third, to reflect what they understand to be the views of scheme members.

The regulation requires occupational schemes to disclose two things: the extent to which social, environmental or ethical considerations are taken into account, and the policy directing the exercise of rights (including voting rights). Trustees are likely to be given a year in which to produce their ethical statements.[12]

Unlike the private sector, public sector investment is not governed by the Pensions Act (1995) but by secondary legislation and the Superannuation Act (1972). Therefore the Public Sector was not required to publish a SIP on Social, Environmental or Ethical issues. However the Government has gone into consultation (ended on 20th August, 1999) to amend the Superannuation Act (1972) which will require the public sector to fall in line with the private sector on SIPs.

A number of the key councils have already implemented social investment policies. A good example is Nottinghamshire County Council which has just awarded £50 million to a City investment manager for Social Investment Purposes. Many other councils are actively looking to implement a social investment policy, although, at present, only between 15-25 have actually taken steps towards implementation. Most councils are, in the main, waiting to see what happens and are letting others take the first step. In this they are in line with many in the private sector.

The UK Social Investment Forum, which has strong Parliamentary links, has acted as a pioneer in this field and has drawn up guidelines for the creation of a social investment policy for its members which include a number of the key local authorities. These guidelines include provisions to:

- Develop a policy for integrating the ethical, social and environmental dimension into the investment strategy;
- Assess your investment managers on their ability to take social and environmental performance into account in stock selection and to influence companies towards best practice; ensure that they don't act counter to long-term corporate social responsibility. When you consider changing investment managers, include these aspects in your criteria. Ensure that your professional advisers can make informed recommendations on social investment;
- Exercise your voting power to encourage responsible behaviour;
- Review the portfolio for unacceptable stocks and exclude the very worst, or invest just a small percentage of the fund socially and assess the resulting performance;
- Integrate the social investment dimension into your venture capital and property investments as well as your equities and bonds.

From an ethical point of view, it is interesting to note the reasons allowing pension schemes to take social responsibility, environmental and ethical criteria into consideration as well as consistency with employer values, financial reasons, and consistency with employee values. Furthermore, it is worth noting, from an ethical point of view, that the requirement is to consider, not to implement. Permission is given, action is not imposed. One should put oneself in the position of a trustee and consider whether and who to give priority to the explicit and implied best interests of the pension scheme participants. As boards discuss whether and how to consider social investment, they will inevitably discuss various normative claims as regards the fiduciary responsibility of a trustee, of a principal, and of the investment manager as agent.

[11] I am grateful to John Gummer, former Secretary of State and Cabinet Minister of the UK, and currently Member of the European Parliament, for information herein concerning this legislation and its implementation, in conversation and correspondence with the author.

[12] At present less than a handful of company pension schemes consider social investment in their Statement of Investment Principles, and include Sainsbury, Body Shop, and British Coal.

SURMOUNTING BARRIERS TO ENVIRONMENTAL SCREENING AND SOCIALLY RESPONSIBLE INVESTING

I have argued above that environmental screening is sound practice because good environmental performance reduces financial risk and may enhance overall corporate competitiveness. But there are additional difficulties and factors to be considered beyond those already noted.

The investment community has generally resisted environmental and social screening or socially responsible investing (SRI) on ideological, financial, legal, and operational grounds as follows:

- Capital should have only one goal, yield maximization. In this view, propagated for instance by Chicago economist Milton Friedman, SRI conflates capitalism with socialism;
- Fiduciary responsibility means maximizing profit within the extent of the law and acting as a "prudent man" (as interpreted by US law); it does not mean being a good Samaritan. Any considerations that lower returns are inappropriate. (This is what I call the traditional or narrow view of fiduciary responsibility.) SRI means restricting the universe of investment choice which means less diversification with higher risk. Too strict screening leads to too little diversification. That is why SRI generally lowers returns; and
- SRI is at worst impossible to do in practice, because it involves too much subjective value judgment, there are no standards, there is no way of knowing where to draw the line on what is ethical or not. It is impossible to do with index-tracking investment. Even if it were possible, it would require lots of extra time, manpower and other costs, which makes it expensive relative to traditional investment practice.

These seem like rather strong arguments and many people believe them. Are they wrong? I do not want to spend time on the more extreme version of free market capitalism, other than to point out that whatever merits it might have as dogma, it is not true in reality. Companies that act following this prescription end up hurting themselves in public opinion, antagonize suppliers and customers, attract NGO attention and animosity and end up with less profits than if they acted somewhat responsibly, even when it means taking on some additional costs near term. Short-term profits today can mean long-term losses tomorrow, particularly if it means ignoring environmental liabilities. In today's world, the only way a major corporation can make long-term profits is by understanding social forces and working at maintaining a positive reputation, and that is acquired only by behaving as a responsible corporation. The age of legitimacy for the sweat shop is over. The risks and costs of an environmentally and socially ignorant corporate policy are just too high. The socially ignorant corporation antagonizes consumer organizations and consumers, is persecuted by the press, draws the attention of regulators, and misses out on sustainable market opportunities. It becomes its own worst enemy.[13]

However, the second issue, the issue of the fiduciary reservations about SRI, ought to be taken seriously. As shown above, the performance of the Storebrand Environmental Value Fund is within the top quartile among global equity funds. Other similarly constructed funds, like KLD's US funds, also perform in line with or better than the indices. But it is also the case that quite a few SRI funds do not perform well.[14] The real question is to understand why. I suggest the reason they do not perform well is not because they do SRI screening per se but rather because they either fail at tying SRI screening in with good portfolio construction and good stock-picking or have SRI screens that are too restrictive. We are just at the start of developing cleverly engineered SRI funds. That does not mean the category is flawed, just that some of the early experiments were not as well-designed as others. It is too early to expect broad empirical competitive performance from the SRI category, and it is likely the category will, in the next 5 years, evolve to average returns in line with traditional equity fund average returns. In the meantime, investors in SRI funds will have to very carefully consider the nature of the screen and the quality of portfolio construction and stock picking. But if they are willing to do so, they will find and be rewarded by funds that meet their financial targets even taking into account the additional charge for the cost of doing SRI work. The moral benefit of doing well while investing for good comes as an important added value.

In practice, on a cost-benefit basis, it is possible for investors who do their homework to invest in SRI portfolios without undue risk of losing money as compared to average fund performance.

What about the third issue, the question of the subjectivity of SRI evaluations? Does not the indeterminacy of ethical debate and the difficulty of knowing where to draw the line vitiate the attempt? Subjectiv-

[13] Brent Spar, Terminator Gene, and Shell in Nigeria are symptomatic of the harm that can be done by pressure groups to corporations who fail to understand the social psychology surrounding their actions.

[14] See comparison table in *Tomorrow Magazine*, No. 4 Volume 9 July-August 1999, p. 17, which shows that among the top ten US SRI funds in terms of size, eight did worse than the S&P 500, while two did better.

ity ought not be seen as the decisive issue here, because as investment analysts we are not afraid to make subjective judgments about the quality of a company's management, the competitiveness of its products or the likelihood of it being taken over at a premium. We know full well that beyond the financial reports, which after all communicate the past and not the company's future, we make stock picking decisions often based on our informed subjective assessments. In this sense, making informed subjective assessments about a company's labour relations, its community affairs programs, its minority employment and promotion practices, its subcontractor criteria, its potential environmental liabilities, the legitimacy of its dialogue process with NGOs, the way it tackles corruption, and the like, these judgments are subjective in the same sense and as valid.

So let us focus on what is really at issue, whether it is appropriate for a pension fund or other institutional investor who acts on behalf of the owners of money (the employee or the citizen in the case of a pension fund, the long-term saver in the case of an insurance company or mutual fund) to pay attention to the interests of the owner in a wider perspective. In other words, is it appropriate to include considerations of value to owners beyond the attainment of a market return on investment?

In the case of long-term savings and pension funds, the interests of owners could, without too much imagination, be understood to include their social and environmental interests in addition to their purely financial interests, insofar as the purpose of money is instrumental rather than an end in itself and if and when the process of creation of wealth is contradictory to the eventual enjoyment of such wealth. This point of view is captured by two rather commonsensical rhetorical questions: what good is money if it causes harm to its owners? What good are competitive returns in collective investment instruments like insurance policies and pension annuities if the underlying companies do things that significantly deteriorate public health or degrades the quality of life of the public?[15]

Money is an instrumental. It is simply a means of exchange to acquire things or experiences that fulfil needs or satisfy psychological wants, including aesthetic pleasure. In this sense, money is the medium for acquiring those aspects of quality of life that can be bought. (As we all know, there are many aspects of quality of life that are literally without price or purchase.) How absurd then to accept that your money is invested in something that decreases your own quality of life.

Going beyond the aspects of quality of life that are self-centred, one can furthermore include among the interests of owners some of their broadly-held values, such as the belief that poor children should not be forced into slave labour or the belief that companies should really work for environmentally sustainable products and production processes. I do not see that it becomes necessary to include all possible issues under this rubric, because for an investment policy to be socially responsible should not mean that it must pay attention to all public concerns, but it should sensitively and pragmatically reflect those social values that most owners actively care about.

Who is to determine whether the pension fund or insurance company has picked the right values to attend to? Why some issues and not others? The beauty of the market system is that it is very sensitive to feedback from customers. In that sense it is very democratic. Given the chance, customers would decide which pension fund best satisfied their sense of values, and would use this as an element in choosing a provider. The success of the Coop Bank in the UK shows that people actually do take ethics into account in choice of bank when given the option and when the offer is marketed well. In the future, providers could supply various options of SRI, just as they today provide various options of coverage for life or health insurance. Another way of adding quality to the process is to have an advisory board that is able to help the investment manager make informed judgments and design a representative SRI offer. These are some suggestions how the interests of owners can be responded to. And, as explained above, it need not imply any systematic sacrifice of financial performance if it is done right.

Reforming Fiduciary Responsibility

This leads us to the matter of fiduciary responsibility. I believe that the concept of fiduciary responsibility needs to be reformed, particularly with a view to update how it is reflected in US and UK investment law, because investment managers tend to believe that their fiduciary responsibility to seek prudent returns is antithetical to attending to social and environmental considerations. In what follows, I argue this is fundamentally wrong. It needs to be made right by expanding fiduciary legislation to include sustainable development criteria within the concept of prudent money management.

Fiduciary responsibility is a concept which covers the duties of care, honesty and professionalism that investment managers should obey. In the US, fiduciary duties are legal duties of investment managers (IM) as agents and owners can seek recourse and compensation when an investment manager fails to

[15] Even though I do not believe it is necessary to go so far in practice, this argument could be taken further to say that it is reasonable and prudent to accept some degree of sacrifice in financial performance in exchange for better health and quality of life.

perform his fiduciary obligation.[16]

IMs thus have a fiduciary duty to their investor, to protect their money from harm, to manage it prudently, and to do so consistent with generally accepted principles that put their investors' monetary interests ahead of their own. In the investment community, the prevailing view is that as long as IMs pursue yield maximization within defined financial risk parameters, and operate within legal and regulatory boundaries, they are discharging their fiduciary responsibilities well (Elton and Gruber,1991; Copeland, 1994).

This explains why IMs typically make decisions solely on financial criteria, and do not pay attention to environmental risk when evaluating portfolio risk, nor do they usually attend to broader welfare interests of their principals. If we give credence to the larger interests of owners, an expanded interpretation of fiduciary prudence merits consideration. Public policies already incorporate the precautionary principle in industrial production (substance and emission controls) and in product and packaging requirements (EU packaging and recycling laws). But environmental precaution is not built into investment management and this is a principal reason why capital flows have not really moved in the direction of sustainable development. While OECD nations have subscribed to the precautionary principle, they have not taken real steps to operationalize it in the functioning of their capital markets.

In the eighties, US. labour unions became aware how their own pension funds were investing in projects that were directly contrary to their own interests. For example, they found themselves financing projects like the non-union construction of the National Right to Work Committee headquarters, a notorious anti-union lobbying organization. Congressional Hearings documented how pension funds were actively investing in firms with poor records in occupational safety and health, or that failed to meet equal employment opportunity guidelines. As a response to this, labour union pension funds began to implement positive screening programs whose purpose was to create portfolios that protect their members' broad welfare interests while also providing a prudent return. Housing loans, health care delivery services, new industries that may create new jobs, and projects that employ union labour are examples of positive screening. However, during the Reagan administration, officials in the Labour Department responsible for ERISA pension plan supervision, discouraged such investments on the grounds that they might compromise their investment performance.

It becomes clear that there is a contradiction between a fiduciary being expected to attend to the best interests of owners but only being able to focus on narrow traditional financial return criteria. Something is amiss. I submit that pension fund laws and fiduciary statutes define the interests of owners too narrowly and thereby create a situation in which the broader quality of life interests of owners are being compromised. These laws were formulated before society understood the urgency of sustainable development, before UNEP was created, before the precautionary principle was introduced into international treatises, and at a time when the prevailing ideology about corporate purpose was Friedman's formulation. Times have changed and it is time for pension fund law and fiduciary law to adjust.

Hence, reforming fiduciary law to also include the non-economic interests of the investor is one way of speeding up the process of moving towards sustainable finance. In addition, the EU ought to enact laws like the UK's, making it compulsory for pension funds to state their policy on SRI, thereby encouraging rather than impeding them from doing so. If this occurred on a pan-European basis, it would have real impact on capital markets. I would also suggest that the European Commission could explore how the broader social interests which are reflected in EU environmental and social legislation can be accommodated in European regulations concerning pension fund investments and the duties of fiduciaries.

Another way forward is for government-controlled funds to be mandated to place a portion of their assets in portfolios that develop SRI investing, as Norway is in the process of doing by creating an Environment Fund portfolio within the Petroleum Fund.

The evolution of society's actions from pollution abatement towards Sustainable Development can be summarized by figure 7.

We have been describing how public awareness of environmental problems led to environmental laws which created command and control regulations but also liability mechanisms. Liability made risks real for companies, and it also created opportunities. All this made for corporate environmentalism. We are now at the point of making the further business link from corporate environmentalism to sustainable finance. Sustainable finance will mean not only that investors will get rid of some stocks they would otherwise hold but also that they will overweight others which are eco-efficient and gain competitive advantages through good social practices and image. Looking forward, one way to speed up the process is to create demand through SRI reporting legislation, as in the UK, and to apply SRI to government-controlled funds, as in the Norwegian Petroleum Fund.

[16] For instance, refer to the prudent-investor rule established in the Harvard College vs. Amory-verdict. For a general discussion of fiduciary prudence, see Kinder, Lydenberg and Domini (1993).

Figure 7

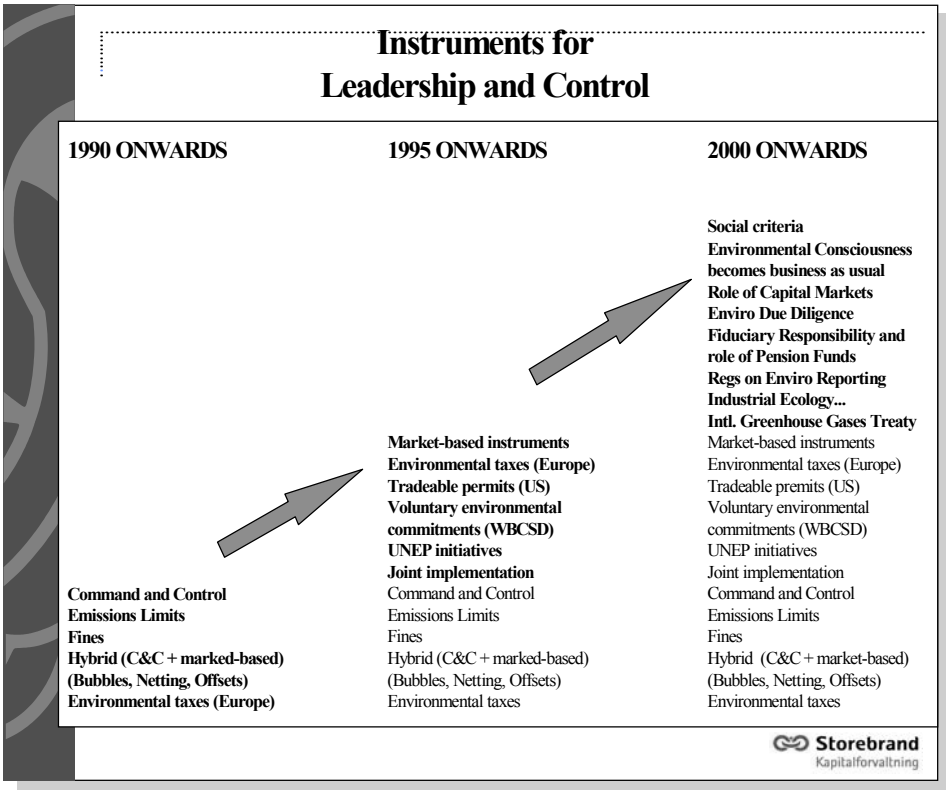
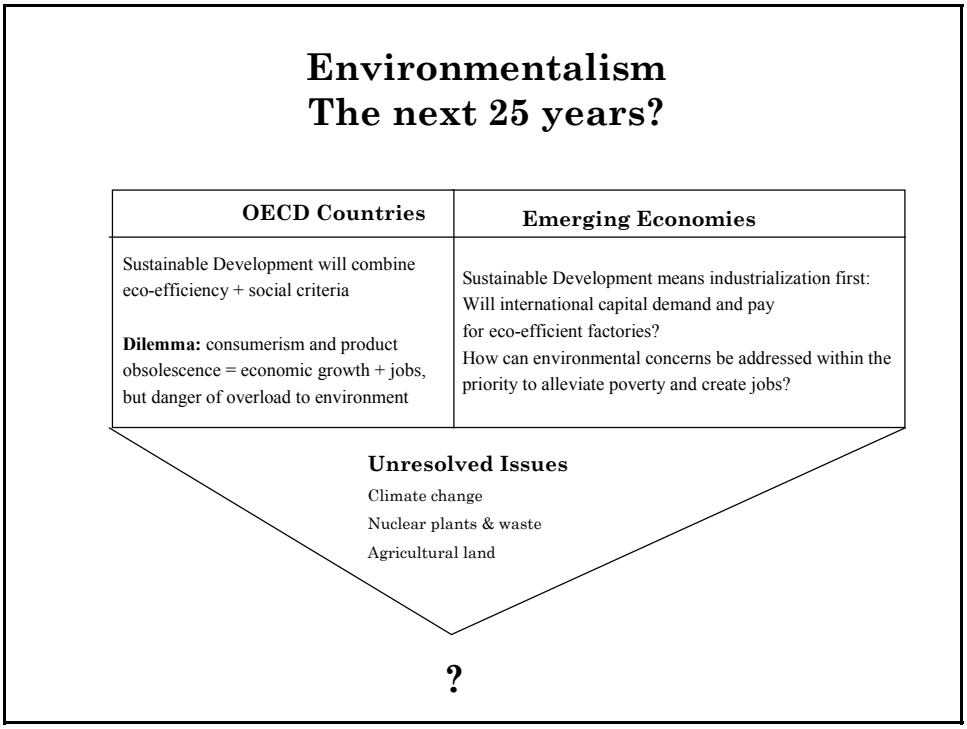


Figure 8



SUSTAINABLE FINANCE AND THE DEVELOPING WORLD

As indicated above, in developed countries we are just beginning to see the outlines of a virtuous circle, connecting public concerns, environmental legislation, corporate environmentalism and financial markets. Also, among the leading companies and in the WBCSD there is a growing recognition that social criteria have to be increasingly taken into account along with eco-efficiency criteria (figure 8). For instance, the concept of the triple bottom line (profits, environment, social concerns) is frequently invoked in planning documents and speeches by business leaders from Shell, DuPont, British Petroleum.

The question, then, as regards the developing world is: will we evolve from "modernization and development" to sustainable development following the same evolutionary pattern as in developed countries? In the first part of this paper I have described how in developed economies it is has taken us thirty years of attitudinal and institutional change to get where we are today, from grass roots public awareness to environmental legislation, environmental liability, and, finally, the beginnings of sustainable investing. Can the world afford another thirty or forty years of the same step-wise evolution and the same pace of change to apply in the developing world? Or is the pace of deforestation, water pollution, urban expansion, air pollution and general resource degradation such that the balance of risks pushes us to accelerate the process and find ways of leapfrogging evolutionary stages?

In the developing world, sustainable development is often understood to mean industrialization first, any kind of industrialization so long as it creates economic growth, alleviates poverty, and creates jobs (figure 8). Will international capital demand and pay for eco-efficient factories? How can environmental concerns be addressed within the priority alleviating poverty and creating jobs with better wages? The challenge of sustainable finance for the developing world is to develop truly innovative solutions.

Is there any way to make this happen, quickly and radically? If there is a way, it will have to engage mechanisms that incorporate eco-efficiency and social criteria into the flows of private capital from developed into emerging markets. In this part of the paper I will first review some of the problems and barriers particular to sustainable finance in underdeveloped markets and then indicate some ideas of how we might move forward in the area of emerging market portfolio investments by insurance companies, mutual funds, and pension funds from developed countries. The ideas I put forth are admittedly very tentative and sketchy but they may prove to be useful because even though there is an abundance of literature on the general issue of finance, globalisation, environment and developing economies, there is practically nothing on the specific issue of how all this relates to portfolio investment and environmental screening in developing countries. I believe the solution involves a coordinated policy approach with the public sector as catalyst, working together with the private sector. The public sector would have to come up with incentives and sovereign risk guarantees, along with awareness-building and coordinated action in the developing world, to motivate environmental screening of first world investment portfolios invested in the developing world. The process of globalisation of capital markets must be harnessed to the cause of sustainable development and not just applied to the goal of GNP growth.

In developed countries, private rather than public sector financial institutions have led the way towards sustainable finance. In the developing world the situation is the mirror image: public sector multilateral financial institutions have been the leaders. The World Bank, the European Bank for Reconstruction and Development (EBRD), the Inter-American Development Bank (IADB), the Nordic Investment Bank (NIB), and the International Finance Corporation (IFC) have all developed and are implementing environmental criteria in their loans or investment projects. They have also established in-house environmental competence and require expert environmental evaluations when and where environmental risk is considered high. The private sector financial institutions are laggards when it comes to the developing world. The process of awareness, recognition, understanding, and response has not yet reached into Latin America, the Middle East, Asia, or Africa. The stock and bond market's attention to Emerging Markets has been fixated on economic growth but has not been accompanied by concurrent attention to growing environmental problems.

Let me, as a start, note some well-documented and interconnected trends on the present state of finance and emerging markets/developing economies: (1) the globalisation of financial markets and the evolution of market-economies in the developing world (such as in Eastern Europe, China and Latin-America); (2) the steady fall of official development assistance (foreign aid) which makes the issue of private foreign investment acute and the most important focus in regard to third world finance and the environment; (3) the enormous amount of capital needed for developing economies to obtain the growth rates predicted by the World Bank; and (4) the catastrophic consequences were this growth to be conducted in accordance with the unsustainable pattern of industrialization pursued until recently in the West.

The world-wide deregulation of national financial markets plays an important role. According to Schmidheiny and Zorraquin (1996), 63 developing countries have liberalized their trade policy since the Uruguay Round of GATT began in 1985, more than 30 liberalized their foreign direct investment regimes

in 1991 alone and over 50 countries have established capital markets in the 1990s (Schmidheiny and Zorraquin, 1996, 31). The flow of capital to the developing world has increased sharply over the last years. Whereas the total financial flow to the developing countries in 1990 formed a mere $83.5 billion, in 1995 it had reached $251.9 billion (Held and others, 1999, 211). And whereas, initially the private share of this flow was largely made up of foreign direct investment, there has recently been a strong growth in foreign portfolio investment and this seems destined to continue in the nearest future.

By far most of the foreign capital needed for the continued economic expansion of developing economies will have to come from the private sector. Since the 1980s the amount of official development assistance (ODA) has steadily fallen to the present level where it constitutes less than 0.3 per cent of the gross national product of OECD member countries, under half of the global target of 0.7 per cent set by United Nations in 1970, (Kaul, 1995, vii). Although the investments of developmental agencies such as the World Bank and first world governments may prove important for the reason that they may "trade" investments for environmental policy reforms (much as the International Monetary Fund and the World Bank do in regard to financial and political reforms in emerging economies), the share amount of capital needed in Asia, Africa and Latin-America suggests that other mechanisms of "greening" must be considered as well. Again, this suggest the need for considering greening of private investments simply because that is where most of the money will come from. Many scholars have argued this point, that since foreign aid is dropping, ways must be found to make sure that private sector capital is not invested in ways that increase pollution, eradicate biodiversity, destroy irreplaceable resources, or undermine the local ability to produce sustainably (Eatwell, 1996; Pearce and Steele, 1996; United Nations, 1997).

According to McKinsey & Co, the developing economies will need to import over $2 trillion in the decade from 1995 to 2005 (Schmidheiny and Zorranquin, 1996, 33). The globalisation of financial markets and the fast integration of emerging markets into this global system makes it possible that this capital can - and will be - raised. The opening up of markets is making it possible and the promises of high profit in the emerging markets makes it attractive to foreign investors. However, it seems imperative that the growth-rates predicted by the World Bank for newly industrialized economies that underpin the promises of high returns, are achieved in a ecologically sustainable manner.

With these trends in mind, it becomes clear that environmentally-screened investment practices have to play an important role in making sure the capital needed in the developing world is employed in eco-efficient ways. It makes little sense from a global point of view to pursue environmental screening in the US and Europe but not in emerging markets. Furthermore, environmental screening of multinationals whose home base and listing is in developed markets will need to focus more and more on how well multinationals apply eco-efficiency criteria in their developing country operations.

The most obvious obstacle to environmental screening in emerging markets is the lack of awareness about the environment as a factor in business and investment decisions. The change in corporations' approach to the environment, noted by Hoffman and others, has by and large not occurred in developing countries. There is little awareness that eco-efficiency can be good for profits (by cost reduction, anticipatory compliance, green image and better employee relations). For most, the environment is considered to be a financial burden, not a potential opportunity. This is partly a matter of information and education, partly a lack of managerial creativity, but also, at times, the lamentable reality of lack of funds or cost of capital to replace old technology with new. The issue is often thought to be caused by a lack of environmental legislation; but I do not believe this is the crux of the problem because countries like Mexico, Argentina and Brazil have rather stringent legislation. To some extent the cause may be lax enforcement of the existing legislation. I am convinced, however, that the necessary leverage is to be found elsewhere. If owners and managers of emerging market companies were really expected to be able to raise foreign capital more successfully if they were able to show and document more enlightened environmental practices, they would probably put energy into doing so. It would then be worth their while. The argument concerning attracting foreign capital is probably more efficacious than the threat of local environmental fines or other regulatory action.

The reason why attracting capital rather than regulatory punitive action is key to any solution is that even given the right awareness, many emerging market companies lack the capital resources to exchange their technology for greener production or service technologies, regardless of the pay-off in the mid-term to longer-run. Corporate and political awareness or regulatory punitive action are in themselves not sufficient if the means of acting for the better are not available. Therefore, if our goal is to quicken the process and leapfrog stages, we should attempt to engineer a solution that creates the willingness and the ability at the same time.

Two things have to happen rather simultaneously to make this happen: one, institutional investors (insurance companies, pension funds, mutual funds) from Netherlands, the UK, Germany, France, the US, and Japan have incentives to search for, screen for and invest in environmental leaders in emerging markets. This can be primed through legislation like the UK legislation described in part II above. Two,

companies (both listed and unlisted) in emerging markets have to be made to understand that one way of making themselves more attractive to foreign capital will be to put in place environmental reporting and develop an environmental action plan that shows eco-efficiency gains through savings and/or new markets. We need to create an investment appetite and at the same time create investment objects that can satisfy this investment appetite.

How could this be made to work? Let me mention by way of illustration an investment fund that Storebrand is exploring to create in partnership with a leading local Brazilian corporate bank (hereinafter referred to as BB). Storebrand and BB are interested in creating an investment fund to attract foreign capital into Brazil for socially responsible/ environmentally responsible investing. The practical difficulties are considerable and deserve to be pointed out, because they indicate why we came up with an approach that is rather different from what we had initially thought about:

- Portfolio investment in Brazil suffers from what Latin Americans call the "golondrina" effect, capital that flies in and out as unpredictably and quickly as a sparrow. What sustainable development needs is patient capital;
- Benchmarking-based stock-picking cannot be done, as the universe of tradable companies is not large enough to allow for "best in class" environmental or SRI comparisons within industries, as, for example, practiced by Storebrand's Environmental Value Fund;
- Investing in green technology companies (recycling, clean energy, waste-to-energy, etc.) may be a viable investment proposition for some investors, but it is too narrow a niche investment proposition for most cross-border institutional investors, particularly given its history of volatility in Europe and the United States;
- Too few publicly-listed Brazilian companies publish environmental reports and very few care or are able to answer environmental questionnaires from SRI investors.

In addition to these practical difficulties in trying to structure an environmental fund for foreign investors out of publicly-listed Brazilian equities, there is the additional consideration that even though investing in the larger listed companies helps create liquidity in local capital markets, which is positive, it is arguably more important to put capital to work in viable smaller to medium-sized unlisted companies with growth potential and to move these companies in the direction of socially responsible and environmentally sound practices as they grow and expand.

Multilateral development agencies and governments can play an important role on this regard by tying their aid, lending and investment funds to environmental policy or institutional reforms, not only to democratic and financial reforms. Furthermore, they can and ought to contribute by making available or stimulating and paying for the local development of environmental planning, consultancy, accounting and reporting services which would help companies plan for and practice corporate environmentalism and then have it become recognized and rewarded by financial markets. Some emerging market countries have recently made environmental reporting a requirement for Initial Public Offerings (IPOs) and for stock market listing.[17] With further encouragement from multilateral agencies, this phenomenon could be extended to more countries.

Given these considerations, Storebrand and BB have decided to cooperate to try, on a best efforts basis, to create a $100 million dollars SRI fund to invest in unlisted private Brazilian companies with annual revenues not exceeding $250 million in which, acting as a responsible owner, we can cause triple-bottom-line practices to take root. Fifty percent of the investment capital would be from Brazilian pension funds and fifty per cent from international institutional investors (e.g. Dutch pension funds, Scandinavian insurance companies, UK pension funds, etc.) who would be acting consciously in line with their SRI policy and their fiduciary responsibility. Storebrand and BB would create a special purpose private equity investment management company in Brazil to select and manage the portfolio of investments. Acting as an active owner, the investment company would ensure that each company invested in would put in place a business-like environmental/SRI action plan as part of its overall business plan. As active owners with board representation and responsibility, the investment company would provide external expertise

[17] Kelly (1999) reports that the UNCTAD/ISAR environmental reporting guidelines: "Thanks to funds from the World Bank and through joining forces with UNEP, and through the Financial Institutions Initiative, the Brazilian National Bank for Economic and Social Development and the Arab Society of Certified Accountants six workshops have so far been held in Thailand, Brazil, and Egypt, Bahrain, Kuala Lumpur and India....In Thailand over 80 high level accounting and financial practitioners attended. The President of the Thai Stock Exchange announced that the exchange would initially adopt the guidelines as part of the listing requirements on a voluntary basis....In Brazil our counterpart was the BNDES which gathered together over 120 specialists from industry, accounting firms and environmental groups. As many of you are aware some Latin CEOs and political leaders see development and environment as tradeoffs. What we tried to show them in the workshop was that through better environmental accounting, this need not be the case. This was welcome news to the audience. We intend to continue our work with the financial institutions of

and SRI talent and give incentive to the management of each company to actively accomplish the stated SRI goals. Since designing and implementing SRI plans for each company invested in would require additional work and costs normally not undertaken by investment companies, Storebrand and BB would seek to obtain grants from development banks for planning, education, facilitation and implementation of the various SRI plans. In addition, Storebrand and BB would make available for coaching sessions, senior executives from their parent companies or from other businesses or organizations with which they have relationships, in order to develop SRI management know-how in Brazil and to publicize the concept. Storebrand would also seek to obtain currency risk guarantees from donor countries for the international institutional investors that would otherwise not be likely to invest without such coverage. In short, this fund will attempt to create a model of responsible ownership, and would seek to engage public sector institutions in support of a private sector model initiative.

This investment fund model would satisfy the need for an SRI investment object for, say, a UK pension fund that needs to practice and show compliance with an SRI policy, and that seeks diversification with low correlation to traditional market indices. Therefore, a new focus of legislators in the EU or the OECD could be to give their institutional investors cause to put SRI/ environmental screening in place for emerging market investments, to provide grants to subsidize the extra costs of doing so, and to provide financial incentives in the form of currency risk coverage (similar to what is available for certain export credits). Correspondingly, a new focus for policymakers and regulators in emerging markets would be to give incentives to local companies to put in place environmental reporting and SR/eco-efficiency action plans. To facilitate the process, the development banks and world development institutions could provide grants or soft loans for consultancy work whose purpose is to help local companies become responsive to what foreign investors look for from an SRI/ES point of view.

Why is this seemingly complicated mechanism needed? In addition to the difficulties enumerated above, in most emerging markets there are few powerful environmental pressure groups and green consumerism is not a driving force. Also, the danger of being exposed in the media as an environmental sinner is less of a threat. This makes it less likely that companies will commit themselves to extra costs to acquire a green image unless they are propelled to do so through the kind of push-pull strategy just outlined. On the pull side, the greening of consumer markets in Germany, Scandinavia, the US, and elsewhere could be tied to the greening of third world companies seeking to gain a growing market share in developed country green consumer markets as a result of their eco-efficiency practices and products—textiles, agriculture products, meat products, components, local energy-efficiency systems, cleaner transportation, energy-efficient cement-making, etc. In an investment world looking for new "investment themes" or "investment stories", the greening of emerging market companies to meet the needs of first world green consumerism could then become an investment theme. (Since themes like The ageing Europe and German Corporate Restructuring are currently in vogue on Wall Street, I can see no reason why The Greening of Emerging Markets could not become a theme within global investing.)

Another angle is that there is considerable public relations benefit to be gained at home by multinationals that not only preach but also seek to practice corporate environmentalism in emerging markets. That public relations benefit can be coupled with the effective investor relations threat of disinvestment by their major pension fund and life insurance shareholders. If firms fail to live up to their global corporate responsibility as global corporations, their shareholders with an SRI policy will need to react. Thus, the well-publicized examples of good or bad by major multinationals operating in emerging markets can serve as a proxy for the lack of local environmentalist pressure groups.

CONCLUSIONS AND POLICY OPTIONS

In summary, based on experience with sustainable finance to date in developed markets, the following policy options would seem to hold promise for both developed and emerging markets. The common thread is that public sector actions would serve as a catalyst to unleash and direct private sector commercial initiatives. Once established, these initiatives would become self-regenerating—the market's invisible hand and the government's visible hand working together to:

Brazil since they seem to be ahead of the profession and the stock exchange in realising the importance of environmental accounting for making their credit decisions... In Kuala Lumpur in July the President of the Stock Exchange undertook to create an environmental reporting award (alongside the corporate financial reporting award) and together with the Institute of Chartered Accountants to introduce the guideline as a listing requirement...In India later that month the Institute of Chartered Accountants of India introduced the guideline as a recommended procedure to their 95,000 members and added it to the curriculum of their 2,355,000 students....In summary the guideline is gaining acceptance; the current European Union discussion paper on environmental accounting follows the same procedure, and this will be issued as a guidance note in the short term."

- Introduce liability legislation in emerging markets similar to legislation in developed markets that makes lenders and investors co-responsible for certain environmental harms.
- Promote environmental and socially responsible screening of the investment portfolios of the insurance companies and pension funds of developed nations. Create demand by requiring public sector pension funds to adopt screening in a step-wise fashion. Create demand by instituting reporting requirements concerning SRI policy and practices by pension funds and insurance companies.
- Reform fiduciary legislation to define sustainable development criteria as compatible with prudent money management.
- Provide incentives for the propagation of SRI funds in emerging markets, by making available grants for SRI consultants, for SRI R&D, for the extra costs of implementing SRI action programs in portfolio investments, and direct regional development banks and multilateral financial institutions to co-sponsor SRI funds with private sector funds managers.

Institutional investors in the EU must become motivated to screen companies or at least to demand information on how the companies they are investing in are doing environmentally, or, they must become motivated to become responsible owners. Whether they become responsible investors as a result of being pressured by their stakeholders or by their governments or by international treatises or by their own conception of corporate citizenship is less important than that they do it.

The complexities and difficulties of achieving global environmental agreements are well documented. But recent progress in Bonn in the process of reaching international agreement on greenhouse gas emissions (particularly after the negotiations in Kyoto and Buenos Aires) seems to show that collective rationality is driving political compromises and winning over the will to maximize self-interested free-riding benefits for individual countries. Perhaps this new political attitude will mark progress on environmental matters in the next millennium. The best practical prescription for policymakers and business may be to act as if it indeed will, and to do one's part to help it happen. If this means leapfrogging the evolution of environmentalism as we know it and appropriating the process of globalisation for environmental and social ends, so much the better.■

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INNOVATIVE FINANCIAL MECHANISMS FOR SUSTAINABLE SECTOR FINANCING

Theodore Panayotou[*]

EXECUTIVE SUMMARY

A growing financing gap and the building up of unmet demands for improved quality of service and expanded coverage forced governments and public utilities to seek private capital, at home and abroad, through both debt and equity participation by the private sector. At the same time, technological progress and institutional innovations made possible wide private sector participation, ranging from management contracts through concessions to full-fledged privatization of energy, water and sanitation utilities and state-owned public transport companies.

During this time, the financial markets also evolved in conducive directions by developing new and innovative financing instruments that made possible the tapping of new sources of financing—insurance, pension funds and a variety of other institutional investors. The emergence of new forms of credit guarantees, the availability of instruments to finance private and municipal projects without sovereign guarantees, and the proliferation of new modalities for private-public sector partnerships opened up opportunities for resource mobilization and risk sharing which were not available to most developing countries a decade ago.

While these innovative financing mechanisms have accessed new, previously inaccessible sources of funds for sector investments and, in combination with a more realistic pricing of services, have enhanced the financial sustainability of sectors such as power, water, sanitation, and transport, they have not necessarily enhanced environmental sustainability. Furthermore, despite the obvious similarities in the innovative financing instruments in these four sectors, there are also significant differences arising from both different sectoral features and historical reasons.

This paper explores innovative instruments for sector financing, focusing particularly on energy, transport, water, sanitation, and forestry. It identifies the similarities and differences between different sectors, analyzes their implications for sustainable development and the potential for replicability in other sectors.

INTRODUCTION

TRADITIONALLY governments have been the primary source of financial resources for investments in sectors such as energy, public transport, water, sanitation and forestry. The first four of these sectors were considered natural monopolies—the service was provided by a state enterprise, usually at a subsidized price, and the state contributed and/or mobilized the financial resources for investment in maintenance and supply expansion. A second reason why state control and public provision was thought to be the appropriate model was the public good feature of clean water and sanitation in terms of public health, as well as the environmental externalities of energy and water resource development and use. A similar rationale was employed in asserting state ownership over tropical forests and in providing for their management and conservation.

The experience with the traditional model of public provision and financing has been disappointing in terms of quality of service, coverage and costs. Furthermore, the traditional sources of financing dried up as public utilities piled up larger and larger deficits due to poor cost recovery, governments faced increasingly tight fiscal constraints and official development assistance (ODA) failed to keep up with expanding needs. A growing financing gap and the build-up of unmet demands for improved quality of service and expanded coverage forced governments and public utilities to seek private capital, at home and abroad, through both debt and equity participation by the private sector. At the same time, technological progress and institutional innovations made possible wide private sector participation, ranging

* Theodore Panayotou is Institute Fellow and Director, International Environment Program, Harvard Institute for International Development, United States.

from management contracts through concessions to full-fledged privatization of energy, water and sanitation utilities and state-owned public transport companies.

At the same time, the financial markets evolved in conducive directions by developing new and innovative financing instruments that made possible the tapping of new sources of financing, such as insurance and pension funds and a variety of other institutional investors. The emergence of new forms of credit guarantees, the availability of instruments to finance private and municipal projects without sovereign guarantees, the proliferation of new modalities for private-public sector partnerships, such as build-own-operate (BOO), build-operate-transfer (BOT), build-own-lease-transfer (BOLT), and build-own-operate-transfer (BOOT), and joint ownership, opened up opportunities for resource mobilization and risk-sharing which were not available to most developing countries a decade ago. At the same time, institutional changes in developing countries, such as decentralization of government and devolution of taxing power to local governments and municipalities, created the opportunity for sub-national entities to access the global capital market without the need for sovereign guarantees from the central government (for example, through the issuing of municipal bonds or the floating of shares of municipal utilities on domestic and international stock markets).

While these innovative financing mechanisms have accessed new, previously inaccessible sources of funds for sector investments and, in combination with a more realistic pricing of services, have enhanced the financial sustainability of sectors such as power, water, sanitation, transport and forestry, they have not necessarily enhanced environmental sustainability. Furthermore, despite the obvious similarities in the innovative financing instruments in these five sectors, there are also significant differences. The differences become more pronounced when we consider the fifth case, the financing of the forest sector, which is an equally important part of sustainable development. Because of pervasive externalities, many of a global nature, forest-sector financing presents particular challenges but can also potentially benefit from international environmental conventions and new market developments.

The purpose of this paper is to explore innovative instruments for sector financing, focusing particularly on energy, transport, water, sanitation, and forestry, to identify their similarities and differences and to analyze their implications for sustainable development and their replicability in other sectors.

ENERGY SECTOR FINANCING

The capital requirements of the energy sector are daunting. In the mid-1990s, annual investments in energy supply worldwide reached $400 billion in 1990 dollars. By 2020, the capital requirements of the sector are expected to reach $750 billion per annum with about 50 per cent going for power development (WEC, 1995). It would be virtually impossible to generate the needed capital from conventional sources and methods of financing, especially in developing countries. Indeed, the sources and methods of financing energy sector development have changed dramatically during the 1990s and the trend is expected to continue and accelerate.

The conventional sources of financing energy projects have been: (a) the utility's retained earnings from revenues; (b) supplementary government contributions; and (c) for developing countries, multilateral and bilateral agencies in the form of ODA. To a limited extent, some funds were also mobilized from local and international commercial banks. All external borrowing was mobilized by governments under government guarantee and the funds, being in foreign currency, were used to pay for imported capital equipment and technology. In contrast, domestically generated funds were in local currency and were used to pay for the local costs of energy development.

While the sources of funding still include domestic and foreign banks and multilateral and bilateral agencies, there are now many more actors (for example, insurance and pension funds) in the domestic and international capital markets. With the introduction of new facilities, the direct participation in funds, and the development of bond markets, the role of domestic commercial banks has been reduced considerably. In contrast, the role of international commercial banks in energy sector financing remains strong, despite the emergence of the international bond market as another major source of energy sector financing. Another major development is the introduction of new facilities by multilateral and bilateral agencies that finance private projects without sovereign guarantees from host governments.

In the meantime, the relative roles of the utility's retained earnings and the government's supplementary contributions (capital subsidies) have diminished as a result of regulated (low) utility tariffs and tight fiscal constraints. Consumer subsidies have not only led to low retained earnings but also to poor credit ratings and difficulties in raising capital from commercial sources. At the same time, ODA, far from being able to fill the gap, has diminished steadily from over $70 billion in the mid 1980s to under $60 billion in the late 1990s. During the 1980s, multilateral banks and bilateral agencies invested $8 billion per year in the power sector of developing countries; in the 1990s their contribution was lower absolutely (even in nominal terms) and relatively insignificant by comparison both to the need and the role of other sources, especially foreign direct investment.

Two fundamental questions may be raised here: Will these financing changes continue into the future, or are they temporary responses to capital and fiscal

constraints? Are there, or will there be, similar changes in the financing of other sectors, such as transportation, water and sanitation? To answer these questions, we must examine the causes behind these dramatic changes: the restructuring of the energy sector and the evolution of financial markets.

Concerns about economies of scale and protection of consumers from "natural monopolies" in the 1950s and 1960s and concerns about the security of energy supply in the 1970s resulted in governments around the world either assuming ownership of energy utilities or introducing stringent regulations, including control of energy price increases. With energy prices kept low, utilities could no longer mobilize sufficient funds to finance supply expansion, and inevitably the government assumed responsibility for providing a major share of the needed expansion capital or mobilizing it with government guarantees. By the late 1980s, the combination of cash-strapped energy utilities, fiscally constrained governments, and a lagging supply capacity expansion behind rapidly growing demand (stimulated by falling real energy prices and rising incomes) convinced governments that the old system was no longer tenable or sustainable. In response, governments around the world began privatizing state energy utilities or letting them take responsibility for their own financing and economic viability while utilities which were already private but highly regulated were, at least partially, deregulated. These changes have three consequences for financing energy sector investments: (a) the government is no longer responsible for providing or mobilizing funds for capital investments; (b) the energy utilities are free to seek financing in domestic and foreign capital markets, but to do so they must convince investors that the financial risks are acceptable and expected returns are comparable to those from other investments; and (c) energy prices – gradually freed to reflect the full cost of supply – become the ultimate source of financing of investments in supply expansion.

As a result of these changes, power companies have shifted their sources of financing from public to private sources and from bank loans to the bond market. Competition in power supply was introduced through the emergence of independent power projects (IPPs) that are non-utilities, such as industrial firms that construct new power plants to provide electricity to their own establishments and sell the additional output to the grid or directly to customers, with the power companies providing the transmission and distribution services.

The new and innovative methods of financing draw funds from a much wider range of sources than conventional financing. In terms of debt finance, most of the capital comes from institutional investors such as insurance and pension funds and the domestic and foreign bond market. In terms of equity, most of the financing comes from floating shares of public utilities on domestic and international stock markets and from resources mobilized by IPPs and independent co-generators. Another feature that accompanies the move to private sector power is the increasing reliance on foreign resources, which may increase risk exposure if energy prices are not raised to cover the full supply cost. This has been the case with many countries in Latin America. In contrast, in Japan and other East Asian countries, high energy prices ensure that both capital and operating costs are covered, a key feature of sustainable financing. China is the single largest actor in the demand for energy sector financing pursued through the establishment of power development funds (in partnership with private investors and multilateral banks), issuance of corporate bonds, floating of public power plant assets in international stock markets, and foreign investment in BOT power projects. While the range of sources and methods of financing of power sector development has multiplied with the emergence of innovative mechanisms, the bottom line remains the same for all private investments: long-term user charges must be high enough to cover capital and operating costs. A combination of deregulation of electricity prices and introduction of competition through IPPs ensures that capital and operating costs are minimized and prices are raised to cover them fully. This combination ensures both access to innovative financing mechanisms to resolve cash flow problems and the overall financial sustainability of the energy sector.

However, the new financing mechanisms for the power sector are not without problems with regard to environmental sustainability. Deregulation and privatization means the government surrenders control over the fuel mix: the new financial incentives favour thermal power over hydro and nuclear, and within thermal, conventional coal over imported gas and clean coal technologies. This has to do with the capital intensity and long construction time of nuclear, hydro and importing facilities for natural gas versus the modest up-front investments of conventional coal and oil fired plants.

The financial incentives to investors favouring conventional thermal power and low energy prices for consumers (as a result of competition) favouring increased energy consumption may increase the environmental impacts of energy use at a time when there is a heightened concern about the health effects and climate change risks of fossil fuel combustion. To prevent this from happening and to ensure environmental sustainability along with financial sustainability, environmental costs must be fully internalized into energy prices and the financing and bidding process must be designed to encourage private bidders to take into account the environmental benefits of natural gas and of renewable energy.

Another factor that affects sustainable energy is scale. Many of the most promising technologies for advancing sustainable development (for example, so-

lar, wind-power, biogas, geothermal and energy efficiency improvements) require investments in small-scale energy production systems and technology upgrading, which are not well served by existing capital markets that provide large quantities of capital on the scale required for conventional power sector development. Furthermore, consumers tend to choose less energy-efficient technologies because they involve lower initial investment compared to more efficient – but initially more costly – sustainable energy technologies. This problem may be solved through innovative financing mechanisms that convert the capital cost into operating costs which are aligned with the stream of benefits accruing to the user. Microfinancing is another innovative instrument whereby households and small businesses are given access to loans for small investments under flexible lending and repayment conditions (for example, India, Bangladesh, Indonesia). Yet another innovative instrument is the aggregation of small investments into an umbrella energy service company, which finances end-use efficiency improvements in exchange for a share of the resulting energy savings (Reddy and others, 1997).

WATER SECTOR FINANCING

The capital requirements for water supply and sanitation in developing countries have reached $35 billion (in 1990 dollars) per annum and are expected to double by the year 2025. Financial resources of this order of magnitude are far beyond the capacity of cash-strapped public water utilities or fiscally-constrained governments to provide. A combination of technical, financial, institutional and environmental problems of public water utilities has resulted in unreliable service, unsatisfied consumers, poor cost recovery, financially insolvent systems, unnecessary environmental damage and unacceptable health hazards. An assessment of public water supply and sanitation by Idelovitch and Ringskog (1995) identified the following problems (which are shared to varying degrees by other public services such as power, telephone and transport):

- Low-quality service and inadequate coverage (50-75 per cent for water, 30-50 per cent for sanitation); inability to cope with expanding population; the intermittent, low pressure water supply is mirrored in the power sector by frequent brownouts and a variable electric current;
- Inefficient operational practices and poor maintenance resulting in large water losses, unaccounted-for water and power losses as high as 40-50 per cent, compared to 10-20 per cent for well-managed systems;
- Excessive and wasteful use: for example, water consumption may reach 500-600 litres per capita, which is twice the norm in metered and well-managed water supply systems; this is largely the result of water pricing, non-marginal cost pricing, and lack of metering. In the energy sector, underpricing leads to energy intensities (energy use per unit of GDP) that are two to three times the norm for full-cost priced energy;
- Poor cost recovery and financial problems arising from underpricing, limited consumption, metering, irregular meter reading and billing not based on actual consumption. Water and electricity tariffs typically do not reflect the incremental costs of future supplies, which results in inadequate funds for expansion. Poor maintenance resulting from poor cost recovery results in a vicious circle of falling revenues and deteriorating service;
- High labour costs and low labour productivity because of excess staff, generous benefits and lost skills. For example, public water companies often employ 5-10 employees per 1,000 water connections compared with only two to three employees per 1,000 connections for efficient water companies;
- Poor management and inability to attract management talent and qualified technical staff due to non-competitive wages, political appointments, high turnover, lack of a disciplined labour force and lack of incentives to attract qualified managerial and technical staff;
- Large and growing state subsidies that benefit mainly the middle class and the wealthy who are large consumers of water and power, while the poor are either not connected or are too small as users to benefit as much from untargeted subsidies;
- Lack of clear regulatory responsibility and conflict of interest between the regulator and operator functions of the public utility. Underperformance or under-compliance is often dealt with by lowering standards rather than by improving operations;
- Public service monopolies are usually among the largest sources of environmental problems, for reasons that range from soft budget constraints and inefficiency to low tariffs and bureaucratic shielding. Water tariffs rarely include environmental costs. For example, water rates do not cover the cost of collecting and treating waste water. Moreover, contamination of shallow aquifers by sewage deposited in septic tanks is often a major problem of urban water supply.

The poor performance and mismanagement characterizing publicly-owned and operated water utilities gave the impetus for considering private sector participation. A second and equally important catalyst has been the increasing needs of urban water supply and sanitation and the inability of the public sector to mobilize the needed resources. Declining ODA, unsustainable levels of budget deficits and ex-

ternal debts, and the need to maintain fiscal discipline to control inflation and spur economic growth have convinced governments to seek private sector resources.

Private Sector Participation

The promise of the private sector lies in (a) improved management and higher efficiency and (b) increased access to private capital for maintenance and expansion. The two are related since greater efficiency results in cost savings and greater availability of funds for investment; improved management results in easier access to private capital; and investment of private capital constitutes an added incentive for operational efficiency.

While the potential benefits from private sector participation are clear, the obstacles are often formidable. Infrastructure investments tend to be capital intensive and lumpy and have long gestation and even longer payback periods. In water and sanitation, the ratio of investment in fixed assets to annual tariff revenues is 10 to 1. This means that private financing is contingent upon the existence of long-term capital markets and the guarantees and rewards offered for high perceived risks. These private sector risks are many and varied: demand for the services provided may turn out to be lower than expected; tariffs may be too low and not permitted to adjust to reflect costs; the condition of infrastructure may turn out to be worse, delays of construction longer, and costs higher than anticipated. Other risks include the financial risk of currency devaluation, legal risks in dispute resolution, and the political risk of asset appropriation. As a result of one or more of these risks, the private contractor may be unable to recover costs and earn a reasonable profit. Indeed, how these risks are quantified and mitigated turns out to be the key to private sector participation in infrastructure projects. The principle is that whoever controls a particular risk best should assume it and be compensated for it.

The public sector that invites private sector participation in areas that have been traditionally reserved for the state also faces risks: procured services may be substandard or costs may turn out to be higher than those charged by the public utility. There are also political risks arising from public opposition, especially by labour unions. Water supply, sanitation, and power (as well as other utilities) are natural monopolies; it is uneconomic to duplicate the water and sewage pipes or the power lines in city streets and therefore competition is difficult to achieve. Moreover, regulation is necessary to protect against monopolistic practices. Regulation is also necessary to control externalities related to public health and the environment; as the social benefits exceed private benefits, investments must be promoted above what is privately profitable.

Options for Private Sector Participation

There is a wide spectrum of options for private sector participation in infrastructure and public service provisions that vary in the respective roles of the public and private sectors as they concern ownership, management financing, risk sharing, duration and contractual management with the users (see Annex I). These options may be classified into two groups:

- those that retain public ownership of the assets while contracting out management, operation, and even investment, and
- those that involve at least partial or temporary private ownership of assets.

The first group includes service contracts, management contracts, lease arrangements, and concessions. The second group includes BOOT, and its variations, BOT and BOO; reverse BOOT (whereby the public entity builds the infrastructure and progressively transfers it to the private sector); joint ownership or mixed companies; and outright sale or divestiture.

All options promote to differing degrees commercial viability, operational efficiency, increased competition, improved cost recovery and performance-based compensation (in most cases). The wide range of options allows flexibility and the potential to move from less risky arrangements without private sector investment to riskier arrangements involving a progressively larger share of private investment as credibility and confidence among the parties grow. As BOOT contracts involve gradual transition to the public authority or to the private contractor, they constitute a useful transitional mechanism for countries without prior private sector involvement. Joint public-private ownership is a risk-sharing arrangement that helps attract private sector involvement. For an innovative and fairly successful private sector concession in water supply and sanitation with important lessons for other countries, see Annex II.

Sub-national Government Borrowing for Infrastructure Development Projects

A number of new financing instruments have been developed in recent years for urban infrastructure projects, particularly water and sewage systems, based on the security provided by intergovernmental transfers, taxing authority and user fees. An interesting instrument for securing bank loans, known as the "tax revenue intercept", emerged in Latin America. For example, provinces in Argentina used their share of tax revenues from federal income and value-added taxes, collected by the federal government and distributed to them through the National Bank, as security for loans from private and state-owned banks. Lenders, whether local or international, have a first

lien on the tax revenues of the province. If the borrowing province (or municipality with provincial guarantees) defaults on their debt service payment, the creditor can activate the "intercept" mechanism by requesting the national bank to pay the debt service directly to the creditors account at the bank out of the province's tax revenues.

The concept of tax revenue intercept has been employed in Mexico to secure financing of concessional waste water treatment plants through a credit line established at the state development bank, BANOBRAS. The concessionaire can draw on this credit line in case the municipality fails to pay for the treated water. Indeed, during the financial crisis, Mexico used this mechanism to secure payments for waste water treated by the concessionaires.

In Colombia, another version of the intercept concept works through the Findeter program (Financiere de Desarollo Territorial, S.A). The revenues from water tariffs or waste water treatment charges are escrowed at the creditor bank, which in turn endorses this lien to Findeter, a "second tier" lender that provides, through first tier banks, loans with long maturities to municipalities investing in infrastructure projects, such as water supply and sanitation. If the municipality defaults on its payment, Findeter has a double recourse: the bank is liable to Findeter even if the municipality defaults; but if the bank defaults too, Findeter can still collect directly from the municipality since it has the first lien on revenues.

Government, states, provinces and municipalities increasingly have direct access to international markets for water/sewer system development and other infrastructure projects. Table 1 provides examples of bond offerings that were issued by public and private entities in emerging markets in 1993-1995. However, most of these issues were by sovereign borrowers, state enterprises and private companies. Only better-known Argentine and Chinese provinces and Brazilian states have directly floated bonds in international markets. A few large cities have also been able to issue foreign currency denominated bonds in Eurobond markets: in 1994 Prague issued $250 million in five-year fixed rate notes with a "BBB" investment grade rating; in 1996, Rio de Janeiro issued a $125 million in three-year fixed-rate notes with a "B" non-investment grade rating. Both issues were well received by international investors and other cities followed suit. Rapidly evolving sources of local infrastructure finance in domestic credit markets are general obligation bonds, secured by the tax collection powers of local governments, and revenue bonds, secured by user fees. But the full development of these financing mechanisms would require: (1) predictable fiscal relations between local and central governments; (2) autonomous public utilities with secure recurrent income through reliable services to customers and rational pricing policies; (3) transparent city budgets, credible accounting systems, and independent audits; and (4) well specified creditors rights and seniority of claims over municipal assets. Furthermore, credit rating and bond insurance would further stimulate the development of municipal bond markets for urban infrastructure development in developing countries. A credit rating by a recognized rating agency would provide to potential investors information on the local government's ability to service debt from its tax and other revenues and its credit track record. Bond insurance, while not a substitute for the creditworthiness of municipal bonds, would help increase their marketability, or reduce their cost.

From Municipal Development Funds to Infrastructure Banks

Water supply, sewage treatment systems and similar local infrastructure investments require debt financing from both domestic and international markets. In response, some developing country governments established "municipal development funds" to channel municipal credit. Such funds are, in effect, substitutes for government grants or vehicles for borrowing at home and abroad with sovereign guarantees from the central government and lending to municipalities through local banks. As such, they do not constitute new and innovative sources and mechanisms for financing infrastructure, but simply different vehicles for the same funding.

According to El Daher (1997, 4), a "challenge would be to move this concept further along commercial principles and assess the feasibility of establishing 'infrastructure banks' that could issue 'market-based' long-term debt (neither guaranteed nor subsidized by the government) for viable, revenue-generating infrastructure investments." Such infrastructure banks, analogous to the US "State Revolving Funds" with a built-in diversification portfolio, would be able to provide more security and credit quality, offer bond insurance and be open to smaller borrowers (El Daher, 1997).

Financing Instruments Specific to Water and Sanitation

Water and sanitation investments exhibit similar financing problems as many other local infrastructure projects, which have been addressed either through increased access of state companies and municipal governments to the local and foreign capital markets or through concessions and privatization. Regardless of how the overall financing is arranged, three micro-financing issues are also confronted. First, while low-income water users are usually willing to pay the water tariffs, they may face capital constraints in paying the connection charges. Second, full-cost pricing may be considered "unaffordable" for low-income users and the government may wish to supply water to them below cost. Third, while most

Table 1. Bond Offerings by Emerging Markets (1993-1995)

Country	*No. of issues*	*Amount in $ billion*
Mexico	103	20.0
Argentina	106	15.2
Thailand	78	7.1
Indonesia	39	4.5
China	23	4.0
Brazil	155	13.8
Philippines	28	3.2

Source: Darche (1997)

users are willing to pay the full cost of water supply, they are not willing to pay the full cost of sanitation and sewage treatment. Unless these three issues are resolved, the sustainable financing of the water sector cannot be ensured.

The connection financing problem is usually solved by amortizing into monthly payments and including it into the monthly water bills. For example, in Bolivia concerns that lump-sum connection fees might discourage households from connecting to public water supply prompted the regulators to allow the concessionaire, Aguas de Illimani (AdI), some flexibility in pricing its services. While the "conversion contract sets maximum tariffs and connection fees for water and sewer service, it does not prevent the company from lowering prices or offering financing schemes to increase demand for in-house water and sewer concessions" (Komives, 1998). AdI gave households the option of paying a reduced connection fee in exchange for supplying labour for the connection. Eighty per cent of the households receiving connections avail themselves of this option. At the same time, AdI offered low-income water users a 3-5 year financing plan to pay their connection fees, and for people in remote areas it offered a subsidized interest rate (8 per cent, compared to the normal 12 per cent). The innovation here that ensures that sustainable financing can be attained despite long financing periods and subsidized interest is that these are not mandated by the concession contract but encouraged by the pricing flexibility that the contract allows.

Issues of social security or affordability of water services are often dealt with through block pricing and cross-subsidization. For example, in the Bolivian case above, two cross-subsidies are provided for in the conversion contract: (a) industrial, commercial and government users subsidize domestic connection, and (b) a lower tariff applies to low volume users and a higher tariff applies to high volume users. Most households use less than 30 cubic meters per month and pay a tariff well below the marginal cost of supply. This tariff structure may actually have perverse financial incentives inducing the concessionaire to service first industrial and commercial users and to leave poor residential areas for later. On the other hand, the need for political support for privatization and the desire to maintain access to other lucrative opportunities may counter these perverse incentives.

The water users' documented unwillingness to pay for off-site sanitation and sewage treatment has created financing problems for sewer-related investments which have been resolved by unifying the water and sewer tariff. By bundling an unprofitable service with a profitable one, it is possible to ensure sustainable financing of both. However, where all households pay for sewer services but not all households are connected to the sewer network, the unified water and sewer tariff creates a perverse incentive for the concessionaire to not expand the sewer service since expansion imposes additional cost but brings in no additional revenues (Komives, 1998).

Yet another instrument that is used in the water sector (and occasionally in the electricity sector) in order to ensure the financial sustainability of the provider is exclusivity of service or prohibition on free entry. The rationale for such a prohibition that limits competition and is out of line with recommended policy toward other sectors has to do with three concerns: (a) difficulty in attracting private capital; (b) inefficient duplication of facilities; and (c) possible adverse impacts on safety and environmental quality. A study by Ehrhart and Burdon (1999) argues that exclusivity is only justified for countries with low administrative capacity and high risk, where mechanisms to hedge risk are difficult to obtain as an instrument for encouraging private sector participation. The only other case where exclusivity may be justified is where safety and environmental concerns are of great importance or there is a risk of overpumping of aquifers and/or pollution of aquatic environments; in such cases policy makers may use exclusivity to prevent competitive pressures that could lead companies to cut corners in terms of safety or environmental protection.

In all other cases, free entry must be encouraged. In particular, where monopoly water utilities provide low quality service at high cost and investment funds are lacking, free entry would provide alternative solutions, as the cases of Pakistan's Orangi Pilot Project and Paraguay's *aquateros* demonstrate. After years of inaction by the municipal utility in 1980, a charitable group developed a low-cost approach to pipe-sanitation in the Orangi settlement in Karachi. With low costs and high expected benefits in terms of health improvements and property value appreciation, households and neighbourhoods mobilized the funds among themselves and financed the construction of pour-flush latrines and sewage lines covering half the settlement by 1993. In Paraguay, 300-400 water vendors (*aquateros*) have been supplying quality piped water to areas not served by public supply, with the added financing incentive of allowing payment of connection fees by instalment (Ehrhart and Burton, 1999). In Bolivia, Aguas de Illimani – despite its contractual exclusivity of water service provision – has permitted water delivery by truck to some areas and even initiated a similar service for households without access to public supply and, with the regulator's permission, delayed the metering or removal of communal standposts.

TRANSPORT INFRASTRUCTURE FINANCING

The annual capital requirements for transport infrastructure developments are expected to more than double over the next 25 years, from $23 billion (in 1990 dollars) today to over $50 billion in the year 2025. Not only is existing transport infrastructure inadequate, but it is poorly maintained and public transport services are generally of low quality and financially unsustainable without state subsidies. In an effort to improve maintenance, quality of service and financial sustainability, a number of innovative financing mechanisms have been used in recent years. We will illustrate these new approaches with two examples: (a) Africa's road maintenance initiative; and (b) Rio de Janeiro's urban transport sector reform.

The Sub-Saharan Africa Transport Programme

According to the World Bank (1998), almost one-third of Africa's $150 billion road system has been lost to disrepair, while half the region's paved roads and 70 per cent of the unpaved roads are in fair to poor condition. Lack of funding has not been the cause of poor maintenance; institutional and policy weakness have. State-owned public road maintenance companies used their large and under-used capital stock to ensure employment rather than road maintenance *per se*.

In 1987, a group of African transport ministers launched the Sub-Saharan Africa Transport Program, with major emphasis on road maintenance. The root causes of the poor maintenance were identified to be institutional rather than technical or financial. Existing institutional arrangements were too weak to manage and finance road maintenance, despite the availability of financial resources (Heggie 1994). Africa's road maintenance initiative had two components: (a) it brought together policy-makers and transport users to better understand the problem; and (b) the institutional weaknesses arising from maintenance being part of the general civil service were addressed by establishing institutional and financial autonomy for road agencies. Institutional autonomy was needed in order to have a more flexible employment policy and a more focused mandate on road maintenance. Financial autonomy was needed to ensure reliable financing. Despite the public-good aspect of roads and the inability of maintenance companies to recover costs through user charges, financial autonomy would enable the structuring of vehicle and fuel taxes to "closely approximate 'prices' for road construction and maintenance." (World Bank, 1998, 114).

Despite the usual arguments against earmarking, several countries established "road funds" for earmarking taxes and fees for road maintenance. According to the World Bank, this arrangement has several benefits: (a) it improves tax collection, as road users are more willing to pay taxes when they know they are used to improve roads; (b) it ensures a steady flow of funding and a sustainable financing source; and (c) it results in a more efficient use of funds as road users sit along with government officials on the boards of these funds. Increasingly, road maintenance is outsourced from private sector companies, thereby introducing an element of competition in road maintenance that helps to contain costs.

The Rio de Janeiro Urban Transport Sector Reform

Rio de Janeiro's public transport system received large subsidies — $350 million per year (or 10 per cent of state revenues) — and carried 67 per cent of the 13 million person trips made daily in the metropolitan region. The lack of integration between the metro and the rail network discouraged more rail trips and encouraged the use of more buses and cars, resulting in heavy congestion and waste of commuters' time. Commuters from low-income areas spent on average 2.5-4 hours on crowded buses and a fourth of their personal income on transit fares (Rebelo, 1999). Finally, congestion and poor maintenance contributed to air quality problems and frequent road accidents.

To address these issues and to improve the supply of urban transport services, the Rio de Janeiro State Government, under the leadership of the State Secretary of Planning, introduced a reform program aim-

ing, among other objectives, to (a) improve financial management, (b) recover cost through tariffs, (c) target subsidies for the poor, and (d) increase private sector participation in both investments and operations. The reformers' expectation was to eventually eliminate subsidies to all public transport except rail. In the meanwhile, a new financing mechanism – a surcharge on the vehicle ownership tax – would provide the needed revenues for the operating subsidy and the capital for expansion.

By 1998, Rio de Janeiro's urban transport system was fully privatized. Concessions for the metro, rail (Flumitrens) and ferry service (COPVERG) were awarded through competitive bidding, and other smaller state enterprises related to transport were sold or liquidated. The Rio de Janeiro urban transport reform holds some important lessons for sustainable sector financing. First, even systems that suffer from large losses and require huge state subsidies can attract private sector interest and yield a positive and substantial concession fee in a public bidding. Contrary to the results of consultant studies and the experience of Buenos Aires, the State of Rio de Janeiro was able to privatize its urban transport system without operating subsidies.

The privatization of Rio de Janeiro's urban transport system is considered a successful example of new and innovative financing mechanisms of sustainable development. Financially burdensome and environmentally damaging subsidies of $355 million (or $400 per resident actually using the service) given to public transport companies were eliminated. Private capital, both domestic and foreign, for rehabilitating trains and the overall transport infrastructure was injected into the sector. There are already signs that the service is improving and the demand for the service has increased, at least for the metro and ferry transport. Improvements in the train service are underway. Congestion and pollution problems are expected to ease as the improved public transport services, combined with increased taxation of private vehicle ownership and use, induce more commuters to shift from private driving and buses to an improved, integrated and expanded public transport system.

FOREST SECTOR FINANCING

Forest sector financing needs arise with regard to (a) national forest conservation; (b) reforestation and afforestation; (c) sustainable timber management, and (d) sustainable forest management. (The terminology employed in this section is mainly from Pearce, Putz and Varclay, 1999). In all these areas there are interesting financing issues for two main reasons. First, there is a temporal separation between investments and returns, which creates serious cash flow problems as well as uncertainty. Second, not all benefits are captured by the investor. Many benefits are in the form of positive externalities or public goods, local or global, that accrue to distant beneficiaries that were not part of the investment decision and do not share in the costs. Financing investments with a long lag (decades) between investment and returns, and/or only partial capture of the benefits (due to non-exclusivity) creates a serious financing challenge for private investors, financial institutions and developing country governments. Of course, such financing problems do not arise with conventional logging of mature forests because, indeed, unless one is concerned with sustainable timber management, neither of the two problems identified above arises. To the contrary, conventional logging liquidates large quantities of natural capital that have accumulated over the past decades without any investment by the concessionaire and ignores any external cost imposed on others.

Sustainable timber management (STM) and natural forest conservation (NFC) are the two polar extremes of forestry sector financing. While STM faces only the temporal separation between investment costs and returns, NFC faces only the externality problem, the spatial and "institutional" separation between investment costs and returns. Both problems involve valuation, internalization and capture. Distant returns can be captured through longer-term concessions that encompass the next harvesting cycle. This does not guarantee sustainable timber management, since the present value of future returns may fall short of investment costs (which include both forgone current harvest revenues in cases of selective logging and management costs). However, long-term concessions ensure that the returns for future harvests are considered, valued and, if worthwhile, can be captured by the concessionaire/investor. If the present value of future harvests does not justify current investment costs, STM collapses to conventional "extractive" logging. Various studies (most notably Sedjo 1994) have shown that sustainable timber management at any reasonable discount rate is at best a "marginal" investment. For example, clear cutting and abandonment of a tropical forest concession in Indonesia, which is no investment in any form except protection from encroachment, was found to yield a net present value from future harvests of about $3 per ha in 1988 prices; any investment in forest management other than protection would yield negative returns. STM could be more profitable if either discount rates are lower or timber prices are expected to rise over time and/or timber volumes grow faster.

Most projections of timber price growth do not exceed 1 per cent per annum (for example, Brook 1996; Sohngen and others, 1997; Panayotou and Ashton 1992). Estimates of annual timber growth range from 1 to 3 cubic meters per ha or a 1-3 per cent growth rate. If we take 2 per cent as the average volume growth rate for STM (see Rice 1998) and 1 per cent as the annual price increase, STM would only be justi-

fied at real discount rates well below 5 per cent. Yet researchers such as Whittington and MacRae (1996) found long term discount rates in developing countries to hover above 10 per cent and to reach as high as 30 per cent per annum. Under these circumstances, STM would not be profitable and hence financially not viable, unless somehow (for example, through reduced import logging and higher seeding densities) volume growth rates are raised significantly and/or discount rates are dramatically reduced. Pearce and others (1999, 6) speculate that "STM could easily result in volume increments of commercial species that are 2-4 times higher than after CL (conventional logging)."

Recognizing the "poor economies" of STM, governments have sought to impose it by dictating selective logging (for example, Indonesia) or requiring the posting of a performance bond by the concessionaires to ensure regeneration and future harvest (for example, Philippines). The results have not been encouraging; indeed, they led to perverse outcomes such as high grading, illegal logging and relogging, and intentional forest fires. We may conclude that unless we go beyond timber to the other products and services of tropical forests and replace STM by sustainable forest management (SFM), sustainability will remain elusive and more the exception than the rule. Correspondingly, financing for STM will continue to be scarce or subsidized; but public subsidies make no economic sense unless non-timber services or the externality and public good values of forests are taken into account. We do this by considering first the extreme case of natural forest conservation (NFC), the setting aside of natural forests as protected areas, such as national parks, wildlife sanctuaries and wildlands.

Natural forest conservation involves costs in terms of demarcation and protection from encroachment, which could be enormous for mature forests; there is also the opportunity cost of the land, which in poor developing countries is by far the most important economic asset and source of livelihood. In contrast to its substantial costs, NFC generates no direct returns or cash flows to recoup its investment costs. At face value, NFC investments are not financially viable and are unlikely to attract any private capital, domestic or foreign. They can only be financed by the state from tax revenues or, if borrowing is involved, sovereign guarantee and security against tax revenues would be necessary. But are such investments of scarce public funds by developing countries justified? From an economic perspective, it makes no difference whether such investments are actual outlays for the establishment and protection of conservation areas or simply forgone revenues from non-harvesting and non-conversion to other uses: from a financial perspective, of course, it makes a difference, since only actual outlays need to be financed; but forgone revenues do not, unless the land is privately owned.

Whether the expense of public funds or the creation of national debt for forest conservation investments is justified depends on the magnitude of the benefits generated and to whom they accrue. The benefits of natural forest conservation consist of (a) watershed protection services (water, soil, downstream impacts); (b) micro-climatic benefits; (c) increased resilience to natural disasters and pest outbreaks; (d) recreation and tourism; (e) wildlife and biodiversity protection; (f) carbon sequestration and (g) regional and global climate benefits. None of these benefits are private, only the first three are national, the fourth ranges from local to global and the last three are regional or global. Since all costs for setting up conservation areas are incurred by the country that owns the forests and sets up these areas, and since a great deal of the benefits accrue to non-nationals and the global community and exclusion is not possible, we would expect that natural forest conservation areas would be underfinanced and underprovided, even if the host country fully appreciates the local environmental benefits and can mobilize the resources to invest in them.

Biodiversity conservation and carbon saving or sequestration are global public goods that should be financed by global public revenues. Contributions by international environmental NGOs, some bilateral and multilateral development assistance and the Global Environmental Facility have in recent years served as partial sources of financing of the provision of these public goods, but they have been grossly inadequate relative to the global demands for conservation of tropical forests and biodiversity. (It is not clear whether such demands are effective demands; that is, if they are backed by sufficient willingness to pay to finance the cost of provision).

The world until recently lacked global institutions, global value-capture instruments and financing mechanisms to fund global public goods in general and global environmental services in particular. In recent years, certain innovative instruments have emerged that are of particular relevance to the conservation of natural forests. First, the rapid growth of international ecotourism (faster than conventional tourism) has enabled countries to capture some of the global use value of tropical forest conservation. Second, debt-for-nature swaps have enabled some countries (most notably Costa Rica) to capture part of the global non-use value (option/bequest/existence values) and to generate substantial financial flows for forest conservation. In this case, secondary foreign debt is cancelled or converted into local currency in exchange for a commitment to conserve a certain forest area or use the local currency generated for conservation purposes. Third, bioprospecting contracts have enabled developing countries (such as Madagascar and Costa Rica) to capture part of the global use value of the biodiversity by licensing investors to extract genetic information from their forests in ex-

change for investments in conservation, participation in biotechnology ventures and/or profit sharing arrangements for any products developed based on this information. Fourth, joint implementation and now the Clean Development Mechanism (agreed upon as part of the Kyoto Protocol) provide vehicles for forest conserving/reforesting countries to capture the global climate value of their investments by selling carbon-saving or carbon-sequestration services as offsets to countries that assumed carbon-reduction commitments under the Kyoto Protocol. The Clean Development Mechanism offers the opportunity for private investors to invest in tropical forest conservation (and reforestation) and recoup their investments in the form of marketable carbon offsets.

Thus, an entirely new market has been created and new economic instruments and financing mechanisms have emerged to finance, value and capture global benefits from forest conservation. If a sufficient part of the revenues from carbon offsets, bioprospecting contracts, debt-for-nature swaps and ecotourism find their way to those that pay the cost of forest conservation, conservation would be achieved. This is critically important, as is the maximization of the captured value. For example, countries around the world fail to properly price entrance to national parks and the collected revenues often are not dedicated to park management but flow to the treasury. Surveys in Central America and Southwest Asia (see TDRI, 1996; DeShazo, 1999) have obtained estimates of willingness to pay by foreign visitors to national parks that are 3-5 times (for the existing level of service) and 5-20 times (for improved level of service) the entrance fees currently charged, while the parks remain underfinanced and underprotected. Furthermore, respondents, including non-visitors to national parks, expressed considerable willingness to pay into a trust fund to ensure the protection and continued existence of conservation areas; yet to date there are very few such mechanisms in place for capturing such non-use values and reinvesting them in nature conservation.

We can now consider the two intermediate cases: sustainable forest management (SFM) and reforestation. SFM requires both a longer time horizon (tenure) to internalize future benefits and a broader geographical, institutional and product/service scope to internalize off-site and off-country benefits. This requires simultaneous solutions to two problems. First, what is the optimal combination of timber and non-timber products and local and global environmental services (watershed protection, biodiversity conservation, carbon sequestration) that would maximize the net present value of the forest, recognizing of course both competition and complementarities (synergies or joint products) between different forest products and services? Second, which instruments/ mechanisms can best capture the external (to the management unit) values, whether local or global, and transfer them in part or in full to the management unit (local stakeholder) to ensure sustainable forestry is economically and socially, as well as biologically/environmentally sustainable? While there is no presumption here that multiple use forestry will be superior to dominant use forestry at the stand level, there are many modifications to conventional logging and to sustainable timber management that can increase the net present value of the forest and its sustainability, moving us closer to sustainable forest management. The various instruments discussed under natural forest conservation can be employed to capture many of the external benefits of practicing sustainable forest management. Such a stream of benefits can be used to secure loans or to issue revenue bonds to finance sustainable forest management.

For example, carbon offsets, bioprospecting contracts or debt for nature swaps can be used to induce and finance a shift from conventional logging, which is highly destructive, to reduced impact logging. Any investment costs involved and any forgone profits can be financed through the sale of carbon offsets, local currency from a debt swap, receipts from bioprospecting fees or revenues from watershed protection charges (such as those in effect in Brazil, Indonesia and Costa Rica, among others). Two specific examples will suffice to illustrate the point. In the mid-1990s, New England Power financed a shift from conventional logging to reduced impact logging in Sabah, Malaysia (by agreement with the local logging company), in exchange for "credits" for the carbon saved (about 36 tons per ha at $3-$5 per ton). More recently, Costa Rica has provided $50 per ha per year incentive to landowners willing to keep their land under (natural) forest. The government financed this incentive by selling the environmental services of the forests through a watershed protection charge on benefiting municipalities, and carbon offset sales directly to countries such as Norway at $10 per ton or through certified tradable offsets (CTOs) placed at the Chicago Board of Trade. A fuel tax also contributed part of the cash flow for financing these incentives, which are designed to decline over time, as land owners begin to extract products from the forest on a sustainable basis. This approach provides one “simultaneous solution” to both problems of sustainable forest finance: the intertemporal separation of investment costs and return, and the external-to-the-investor nature of many of the benefits occurring from reforestation or establishment of new forests. However, maximum and full capture of the value of sustainable forestry in all its dimensions and manifestations will have to await the further development and “thickening” of the emerging markets for environmental services as well as the resolution of the institutional and property rights uncertainty that surrounds tropical forests.

DIFFERENCES AND SIMILARITIES BETWEEN SECTORS

In this paper, we have reviewed innovative financing mechanisms for five sectors: energy, transport, water supply, sanitation and sustainable forestry. These sectors have several features in common. First, all five are strategic sectors for sustainable development and have all been identified as such in Agenda 21. This means that in addition to their key role in economic development, they are also of strategic importance to poverty alleviation, equity concerns, environmental protection and ecological sustainability. Second, all five sectors have been identified in Agenda 21 as having serious financing gaps that require both domestic and international resource mobilization. Third, all five sectors were, in the past, major recipients of official development assistance (ODA) from both bilateral and multilateral sources; in recent years, they suffered from declining levels of ODA, with the possible exception of the forest sector. Fourth, all five sectors require large amounts of upfront capital investment but generate returns slowly over a long period of time (power, transport, and water supply) or returns that are much delayed (forestry). This feature creates both a cost recovery problem and a cash flow problem. Fifth, all five sectors involve major externalities, that is, benefits and/or costs that are not internal to the decision maker/investor. This creates both an incentive problem and a cost recovery problem, all of which translate into financing difficulties. Finally, all five sectors have been traditionally "monopolized" by the public sector on account of their natural monopoly features and their public good aspects. In all five sectors, there is an increasing realization of the need and opportunity for private sector participation in both financing and management.

These similarities not withstanding, there are significant differences among these sectors as well. First, power, water, and transport are essentially private goods, whose production and consumption generates certain waste by-products or spillovers (such as air and water pollution, and congestion). The predominantly private nature of power, water and transport services means that individual willingness to pay is potentially high enough to recover costs. Exclusion of those who do not pay is possible and free-riding is less of a problem; therefore there are good prospects for private sector provision and private financing. In contrast, sanitation (including sewage collection and treatment) and sustainable forestry are predominantly public goods with some private good aspects (for example, on-site sanitation and non-timber forest products). The implication is that willingness to pay is low, exclusion of non-payers difficult (and non-advisable), and "free-riding" more the rule than the exception. This means cost recovery is potentially difficult, incentives for private sector provision is limited and, in the absence of a steady flow of revenues, mobilizing financial resources requires public subsidies and/or government guarantees.

A second major difference is that while energy, transport and forestry have significant global commons implications, water and sanitation have only local effects. The release of CO_2 emissions by fossil fuel combustion, whether for the production of power or for transport, and deforestation add to the concentration of greenhouse gases that increase the risk of global warming. This means that the energy mix of power and transport and the land use changes in one country are of concern to other countries and the global community.

On the other hand, investments in renewable energy, more efficient public transport systems, forest conservation and reforestation generate substantial global benefits that are enjoyed free of charge. This means that there *are* global values to energy, transport, and forestry investments and if they can somehow be captured, they can be used to finance these investments. Indeed the Global Environmental Facility and the Clean Development Mechanism can help capture and reinvest part of these global values. Water and sanitation investments do not enjoy the same global interest but ought also to be of concern since they represent an important component of the social dimensions of sustainability.

A third obvious difference between sustainable forestry, especially reforestation, and all other sectors is that investment costs and returns are separated by many years, indeed decades. This requires long-term bridge financing to resolve a very challenging cost flow problem, especially in developing countries where only short term credit is usually available. Instruments for capturing environmental values, such as ecotourism, bio-prospecting, watershed protection charges and carbon offsets, help generate a steady flow of revenues for securing long term loans, as well as mitigating cash-flow shortfalls.

A fourth difference is that foreign equity in economic assets such as power plants, water supply systems, sewage treatment plants and transport systems is more palatable to developing countries than foreign equity in natural resources such as forests and national parks. On the other hand, forests and water supply systems lend themselves more easily to community ownership and management than mass transport systems and power plants.

Another contrast is between the "beneficiary pays" principle, applied in financing sustainable forest management and conservation through innovative instruments, and the "user pays" principle we employ in recovering costs from investments in water, power, and transport. Sanitation presents an interesting challenge for financing since neither the "user pays" nor the "beneficiary pays" principles can be applied directly. In theory, the right approach would have been the "polluter pays" principle, but because of the

large number of households and small businesses involved it is difficult to collect a pollution charge directly from each source, especially since willingness to pay for outside-the-home sanitation is virtually nonexistent. For this reason sanitation is bundled with water (since waste water is roughly proportional to water use), and sanitation charges on water use are collected as part of the water bill. An interesting analogy in the case of sustainable forest management is the bundling of carbon and biodiversity in what has come to be known as "exotic" carbon for sale at a premium in the emerging global carbon markets.

CONCLUSIONS

The last two decades have witnessed the development of many new and innovative financial mechanisms and instruments for sectoral financing, as our review of five sectors (power, water, sanitation, transport and forestry) has demonstrated. However, financing mechanisms, no matter how innovative, are not a substitute for full-cost pricing and sound management; they indeed depend on them. Nor is the attainment of financial sustainability a sufficient condition for environmental sustainability. Indeed, increased private sector participation and the proliferation of international financial market instruments that can be accessed for sector financing might externalize some of the public good aspects of sectoral investments unless supplemental environmental pricing or regulatory instruments are employed. On the other hand, the development of international environmental conventions is beginning to internalize some of the traditional externalities and capture hitherto unaccounted global environmental values.■

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Annex I. Options for Private Sector Participation in Infrastructure and Public Service Provision

Private Sector Participation Option	*Service Contracts*	*Management Contracts*	*Lease Arrangements*	*Concessions*	*Build-Own-Operate-Transfer (BOOT)*	*Reverse BOOT*	*Joint Ownership (mixed companies)*	*Outright Sale or Divestiture*
Financing of investments	Public sector	Public sector	Public sector	Private sector	Private sector	Private sector	Private sector	Private sector
Financing of working capital	Public sector	Public sector	Private sector	Private sector	Private sector	Private sector	Private sector	Private sector
Contractual relation with users	Public sector	Private sector	Private sector	Private sector	Private sector	Private sector	Private and public sectors	Private sector
Duration (years)	1-2	3-5	5-10	20-30	Time needed to retire debt	Time needed to retire debt	Indefinite or fixed	Indefinite
Responsibility for setting rates	Public sector	Public sector	Contract	Contract	Contract	Contract	Public/private	Regulated private
Method of payment	Work done/ unit price	Cost-plus and productivity bonus	Rates price	Rates	Rates	Rates	Rates	Rates
Method of recovering public expenditure	Rates	Rates	User overcharge	Not applicable	Not applicable	Annual fees by private firm	Rates	Sale price
Main objective of PSP	Improve efficiency	Improve efficiency	Improve efficiency	Mobilize private capital	Mobilize capital and efficiency	Improve efficiency	Mobilize capital and efficiency	Mobilize capital and efficiency
Ownership	Public sector	Public sector	Public sector	Public sector	Private then public	Public then private	Private and public	Private sector
Financing	Public sector	Public sector	Public sector	Private sector	Private sector	Public sector	Private and public	Private sector
Management	Public sector	Private sector	Private sector	Private sector	Private sector	Private sector	Private and public	Private sector
Risk	Public sector	Public sector		Private sector	Private sector	Public and private	Private and public	Private sector

Source: Partially based on Idleovich and Ringskog (1995).

ANNEX II

The Buenos Aires Concession for Water Supply and Sanitation

The greater Buenos Aires water supply and sanitation system, operated by a public company (*Obras Sanitarias de la Nacion*, OSN) was plagued through the years by problems common to public water utilities throughout the developing world. Coverage was only 70 per cent for water supply and 58 per cent for sanitation, while only 5 per cent of the waste water received any treatment before dumping into natural water bodies. The service was of poor quality and unreliable. Infrastructure was poorly maintained and unaccounted-for water was as high as 45 per cent of the water produced. Water meters were installed at only 20 per cent of the connections; meter reading and billing were highly irregular and water consumption reached 400-500 litres per capita a day – twice the norm for metered and well-managed systems. The public utility was grossly overstaffed with 8,000 employees, or 8-9 employees per connection compared with 2-3 by efficiently operating systems. At the same time, population growth and urbanization were expanding the demand for additional coverage. The cost of rehabilitation of the deteriorating system and expansion to reach 100 per cent coverage was estimated at several billion dollars over the next 20-30 years, which was clearly beyond the capacity of both the utility and the state to mobilize.

In 1993, the government of Argentina privatised water and sewage services for Greater Buenos Aires as part of a massive privatization programme that began in 1990, with World Bank support, and included virtually all public services and federally-owned enterprises such as electricity, telephone, railways, airlines, roads and ports. The private sector participation option chosen for water and sanitation was a 30-year full concession that allowed the assets to remain under public ownership while the operation, maintenance, rehabilitation, expansion, and waste water treatment were transferred to a private concessionaire. After a successful process of preparation and bidding, the concession was awarded to *Aguas Argentinas*, a consortium of foreign and local firms led by *Lyonnaise de Eaux-Dumez*, that offered a 27 per cent discount to the prevailing public water tariffs. Thus, competition was effective in reducing costs. It also mobilized $4 billion over the life of the contract to meet the performance targets of the concession, which include 100 per cent coverage in water supply and 90 per cent coverage in sanitation by year 30, a reduction in the unaccounted-for water from 45 per cent to 25 per cent, and an increase in sewage treatment from 45 to 93 per cent. Over the first five years alone the concessionaire will invest $1.2 billion, or $240 million a year – 12 times more than the historic annual investment made by the public utility in the last decade. To regulate and control the concession and protect consumers against monopolistic practices, the government established a regulatory agency*, Ente Tripartito de Obras y Servicios Sanitarios* (ETOSS) with participation of the federal, provincial and local government and a budget of $8 million to be financed through a user surcharge of 2.7 per cent of the water and sewage bill collected by the concessionaire. The regulatory agency also enforces water and effluent quality standards based on international norms introduced prior to bidding.

During the first three years of operation, accelerated rehabilitation of the system led to a reduction of water losses from 45 per cent to 25 per cent, and coverage increased by 10 per cent, with no increase in production. The population receiving sewage services increased by 8 per cent. Prices were reduced initially by 27 per cent, but increased by 13.5 per cent in 1994 to further accelerate rehabilitation provided in the contract clause; still, water prices are 17 per cent lower than those charge by the public utility. The staff was reduced by 47 per cent through severance payments by the government and a voluntary retirement program by the concessionaire. Labour productivity rose and new recruitment is now underway as the concessionaire is responding to increasing demand for water and sanitation services. The table in this Annex summarizes these improvements.

Impact of the Greater Buenos Aires Water Concession

Indicator of Performance	*Changes from May 1993 to December 1995*
Increase in production capacity (per cent)	26
Water pipes rehabilitated (kms)	550
Sewers drained (kms)	4,800
Decline in clogged drains (per cent)	97
Meters upgraded and installed	128,500
Staff reduction (per cent)	47
Residents with new water connections	642,000
Residents with new sewer connections	342,000

Source: Aguas Argentinas (1999)

While the overall experience has been clearly positive and the model is now being adopted by other Argentine provinces and other countries in Latin America, there have also been teething problems with regard to negotiations with the labour unions and regulation. Indirect labour costs remain high as the concessionaire continues to provide fringe benefits traditionally available to civil servants. The regulatory agency, staffed with former utility employees, find it difficult to give up the state's day-to-day management role and focus on its regulatory and contract enforcement role.

This successful privatization of the supply and sewage services in Buenos Aires contains many important lessons for private sector participation in water and sanitation throughout the developing world. First, privatization must receive the endorsement of major stakeholders, enjoy political commitment at the highest level, and be part of a comprehensive program of economic reforms. Second, political, technical, legal, commercial and financial risks must be assessed and alleviated through appropriate mechanisms. Third, all available options for private sector participation should be considered and the one best suited to the country's political and cultural conditions, and the sector's features, must be selected; the assets need not be privatized to improve efficiency and attract capital.

Fourth, the regulatory framework and regulatory institution must be established, and the technical and financial feasibility of the concession studied prior to bidding. The regulatory entity must be strong enough to regulate an experienced international concessionaire. Fifth, while adequate preparation and time should be allowed to ensure universal bidding, eligibility should be confined to qualified bidders through a prequalification process. Sixth, sensitive staff reduction issues can be effectively dealt with through attractive retirement packages jointly financed by the government and the concessionaire. A final lesson is that the contract should be realistic and specific to minimize conflicts yet be flexible enough to allow for adjustments to unforeseen or substantially altered circumstances.

Source: Idleovitch and Ringskog (1995); Crampes and Estache (1996).

PROMOTING PRIVATE SECTOR FINANCING OF COMMERCIAL INVESTMENTS IN RENEWABLE ENERGY TECHNOLOGIES

Norbert Wohlgemuth
Jyoti Painuly*

EXECUTIVE SUMMARY

Too much investment is directed towards conventional energy technologies, even where commercially available energy efficient and renewable technologies are technically feasible and economically attractive. The fact that renewable energy technologies (RETs) account for only a modest proportion of the world's commercial energy demand suggests that there are obstacles to their implementation. These obstacles (either financial or non-financial) need to be identified and addressed in order to design innovative policy approaches for the international and domestic sector financing of RETs. It is clear that a strategy to increase the market share of renewable energy should address the full range of obstacles.

Since the use of renewable energy contributes to all dimensions of sustainable development, particularly in developing countries, one of the challenges for energy policy is to ensure that environmentally sound technologies, including RETs, have a fair opportunity to compete for the resources required for the provision of energy services.

The coming together of the renewable energy industry and the financial sector cannot yet be regarded as a marriage made in heaven. There is considerable suspicion and misunderstanding on both sides which permeates all RET sectors, as well as most levels of financial institutions. In order to overcome the "understanding gap" between the worlds of renewable energy and financing, various initiatives have been launched recently to bring these two together. Innovation in financing mechanisms to advance RET projects can be as important as technological breakthroughs.

For renewable energy to make a dent in conventional energy markets, it is necessary that a part of the private sector investment in the conventional energy sector gets diverted to RETs. The profitability investment in RETs thus becomes a key issue.

The paper provides an overview of the barriers RETs face in the market place; it also provides an international review of RETs support mechanisms (including Non-Fossil Fuel Obligation and Renewables Portfolio Standard), and presents examples of successfully implemented RET projects. The paper shows the importance of innovative financial mechanisms to enable RETs to overcome the market barriers, and concludes that to overcome the wide array of barriers, support mechanisms should be designed in a way that is compatible with market forces, and the role of government is crucial in order to provide the right package of incentives for a level playing field for commercial energy production from renewable energy resources, particularly in developing countries.

* Norbert Wohlgemuth, UNEP Collaborating Centre on Envergy & Environment, Denmark

INTRODUCTION

ENERGY is essential for economic and social development. Roughly 90 per cent of the world's commercial energy supplies are provided by fossil fuels whose associated emissions cause local, regional and global environmental problems. Most energy projections show that current and expected future global energy demand patterns are not sustainable. The demand for energy increases more or less in line with the level of economic activity, and projections to 2050 indicate that world energy demand may increase dramatically, with most of this increase taking place in developing countries. These trends show that, in order to satisfy the three dimensions of sustainability (economic, environmental and social) with respect to energy production and consumption, there needs to be a decoupling of economic activity from fossil fuel primary energy consumption and new and renewable energy technologies with low impact on the environment have to play a greater role in the future energy mix to arrive at low-carbon energy systems. At the same time, fossil fuels should be used efficiently, not only in the technical sense, but also in the economice sense respecting inter-generational efficiency.

Too much investment is still directed towards conventional energy technologies, even where commercially available energy-efficient and renewable technologies are technically feasible and economically attractive. The fact that renewable energy accounts for only a modest proportion in meeting the world's commercial energy demand means that their potential is underdeveloped and that there are barriers to their implementation. These financial or non-financial barriers need to be identified and addressed in order to design innovative policy approaches for the international and domestic financing of RETs.

Financial institutions currently evaluate applications that have a RETs component[1] using a traditional framework that does not take into account the full economic and environmental advantages of investments into RETs and view them – often incorrectly – as being too risky, on the basis of outdated or incorrect information. Because banks fail to support RET projects, these technologies are penetrating the market at rates slower than is socially desirable. Benefits, including rural electrification and a reduction of greenhouse gas emissions as mandated by the United Nations Framework Convention on Climate Change (UNFCCC), go unrealised because of a lack of information, the use of inappropriate evaluation framework and the lack of skills on the part of investment officers in lending institutions.

Governments have a central role to play in shaping a business environment that encourages the increasing use of environmentally friendly technologies. But financial innovation by market participants is also required particularly in the case of developing countries.

The partnership between renewable energy industry and the financial sector cannot yet be regarded as a marriage made in heaven. There is considerable suspicion and misunderstanding on both sides in all RET sectors as well as at most levels of financial institutions. Various initiatives have been launched recently in order to overcome the "understanding gap" between the worlds of renewable energy and financing.

IMPORTANCE OF RETS FOR SUSTAINABLE DEVELOPMENT

The provision of energy services can be made cleaner and more efficient, often with considerable cost savings. RETs can, in many cases, play an important role in the attainment of sustainable energy development. Since renewable energy contributes to all dimensions of sustainable development (social, economic and environmental), one of the challenges for energy policy is to ensure that RETs have a fair opportunity to compete with other resources required for the provision of energy services. In many cases, renewable energy is the most economic solution: for example, in providing energy to remote and widely dispersed rural populations that are not connected to the grid, where traditional energy supply is costly and unreliable or, if based on fuelwood, destructive and polluting. Also, there is a growing literature on and documentation of the risk management benefits of RETs.

Renewable energy provides many benefits that support the public interest and enhance economic efficiency, including increased local employment and income, enhanced local tax revenues, a more diversified resource base, avoided fuel supply and price risks, provision of infrastructure and economic flexibility by modular and small technologies, creation of more choice for consumers, contribution to overall system reliability, furtherance of important local and national energy goals, and the potential to eliminate pollution associated with the provision of energy services.

[1] RETs use non-depleting sources of energy, such as the sun or wind, and so are generally more environmentally benign than conventional (fossil fuel based) energy technologies. RETs can provide either electricity or heat; examples include biomass boilers, hydropower generators, solar thermal and wind power plants, and photo-voltaic systems. RETs are supply-side technologies in that they supply energy. Those that generate electricity can either be used on-grid, thereby offsetting energy produced from conventional sources, or off-grid, to provide power in remote locations.

The environmental characteristics of renewable energy systems and the energy security brought about through the increased use of indigenous energy sources are the most common reasons cited for renewable energy promotion, although energy flexibility and diversity issues, economic concerns such as regional development and the export potential of renewable energy technology in emerging markets are also important considerations.[2] In particular, the capacity of renewable energy sources to provide greenhouse-gas free energy is increasingly cited as an important driver for renewable energy use. For example, many industrialised countries explicitly present their plans for renewable energy development in terms of the CO_2 reductions that would result (International Energy Agency, 1997a).

RET benefits can be summarised as follows (International Energy Agency, 1998a):

Environmental benefits include:

- Emissions reduction by displacing fossil fuel. By 2020, depending on the scenario, up to 9,000 Mt of CO_2 emissions could be avoided. This corresponds to 40 per cent of current energy-related CO_2 emissions;
- Improved water quality. In many regions, a shortage of potable water damages human health. Hydroelectric schemes can improve water supplies. Small wind turbines already pump water from underground reservoirs. Growing energy crops (particularly in areas that overproduce) can reduce soil erosion. They require lower levels of agrochemicals. Some energy technologies can be used to treat waste so that it no longer constitutes a pollution threat to water courses, while others offer the prospect of producing water through desalination;
- Reclamation of degraded land and habitat. Growing energy crops on land degraded by previous agricultural practices can help to improve soil conditions and enhance wildlife diversity;
- Abatement of pollution from transport. Road transport contributes to both national emissions of atmospheric pollutants and to local air quality problems, especially in urban areas. Some RETs can reduce urban pollution through the use of alternative fuels (for example, ethanol) or by providing power for electric vehicles;
- The modular and distributed nature of renewables can reduce the need for upgrading electricity distribution systems or for building new line capacity, thereby reducing eyesores, transmission losses and the emissions associated with such losses.

Socio-economic benefits include:

- Diversifying and securing energy supply, thereby promoting price stability;
- Providing job opportunities in rural areas thereby slowing urbanisation;
- Promoting the decentralisation of energy markets, by providing small, modular, rapidly deployable schemes;
- Reducing the dependence of developing economies on fuel imports. When most communities buy energy, they are importing it and exporting money that is not invested in their communities. If that money could be invested locally in renewable technologies, these communities would benefit economically (International Energy Agency, 1999a);
- Accelerating the electrification of rural communities in developing countries.

It is often said that more than two billion people in the world have no access to electricity. At least another half billion people have such limited or unreliable access to electricity that, for all intents and purposes, they do not have access at all. It must be kept in mind that these people live in regions of the world where the population is growing most rapidly. If we are to make a difference in these people's lives, we have to provide them with a connection to the electricity grid or provide them with power sources suitable for off-grid applications, such as renewable electric technologies. When people have no access to electricity, even a small wind turbine or a low wattage photo-voltaic panel combined with battery storage can make a very large difference in their lives. Many examples can be given. Light becomes available at night for children's education. Electricity makes communication possible, and refrigeration available. Lives can be transformed, particularly those of women and children in developing countries, who carry most of the burden associated with fuel gathering and energy use (International Energy Agency, 1999a).

Status of RETs

The technological potential of RETs is enormous. Although limited by climatic and organisational

[2] In many countries, the underlying reasons behind renewable energy promotion may be mixed, that is. encompassing energy, environmental and other objectives. This can complicate the evaluation of such policies, as the costs associated with increased renewable energy use (often borne by public energy budgets) bring benefits in energy and non-energy sectors. For example, increasing farmers' income via subsidies for biofuels may help to maintain a country's food production capability, increase regional development, maintain rural employment levels and reduce emissions of CO_2 as well as increasing renewable energy use.

conditions (for example, available amounts of water, wind, biomass, structure of urban development and land use), RETs could theoretically provide a multiple of current world energy requirements (Johansson and others, 1993). Their development is, therefore, an essential ingredient in the realisation of a sustainable energy system.

Several RETs are emerging. These include solar technologies (mainly direct conversion through photo-voltaic (PV) cells, or solar thermal schemes for hot water or power generation), biomass, geothermal resources, small hydro and wind. It can be shown that the cost of most of these technologies have come down significantly over the past 10 years, thus bringing them close to, if not at, commercial viability.[3] Additional features have made them attractive to investors: (i) modularity that renders them more suitable for large than for small-scale applications and more flexible in meeting forecast demand; (ii) short lead times, which reduces risk and financing charges; (iii) potential for market expansion and rapid dissemination, particularly in developing countries, that has attracted private sector interest; and (iv) favourable land-use features (for example, solar plants in desert areas and multiple use of land in windfarms). While these technologies could be seen as promising future alternatives to conventional electricity generation, they were not – and still mostly are not – fully competitive in an unregulated market, and consequently policies were set up to secure fair prices of electricity produced and to support the technologies through various kinds of government support. These systems are sometimes known as "decentralised", "distributed", "localised" or "embedded" systems because they can produce electricity near the consumer (Smeers and Yatchew, 1998).

PV presents a particular challenge to financial institutions because of the relatively small level of installed capacity at individual sites and its highly distributed nature (Derrick, 1998).

Some of the stand-alone RETs (for example, PV and wind) are becoming more cost-competitive with conventional (diesel) generators and grid extension in many (rural) parts of the developing world. Many developing countries have very low electrification levels. Distributed RETs, therefore, have good potential to provide electrification in these regions, which, in many cases, is a key development issue.

Renewable energy sources currently supply somewhere between 15 per cent and 20 per cent of total world energy demand. It is estimated that in 1990, all renewable energy sources produced nearly 2,900 TWh, accounting for about 24 per cent of the world's total electricity supply (International Energy Agency, 1995). If traditional uses of biomass were also taken into account, then renewables would supply nearly 18 per cent of global energy demand (World Energy Council, 1993). Most of the contribution of renewable technologies to current electricity supply is provided by hydroelectric schemes, a large proportion of which has been in place for a considerable time. However, the importance of the newer technologies is increasing. From a small base in the 1970s, the 'new' renewables (that is, biomass, geothermal, PV, small-scale hydro, solar thermal electric and wind) have grown proportionally more rapidly than any other electricity supply technology (World Energy Council, 1993). Again, most regions of the world have contributed to the exploitation of these new resources.

The International Energy Agency projects that, without new policy initiatives, fossil fuels will account for more than ninety percent of total primary energy demand in 2020 (International Energy Agency, 1998b). Looking even further into the 21st century, the World Bank has estimated that developing countries alone over the next four decades will require five million megawatts of new electricity generating capacity to meet anticipated needs. To put this number into perspective, the world's total installed capacity today is three million megawatts. Thus, even if the World Bank's estimate is too optimistic, essentially the world's installed capacity needs to be doubled during the next forty years. In financial terms, this much new capacity will require approximately five trillion dollars of new investment. While it is true that renewables can anticipate capturing only a fraction of this market, every one percent of that market in developing countries represents approximately $50 billion of investments. If renewables can capture a small share of that market, this represents a potential for several hundred billion dollars of renewable technology sales world-wide and the creation of many new jobs over the next decades.[4]

Major international studies indicate significant

[3] Photo-voltaics, the use of semiconductor materials to convert sunlight directly into electricity, has seen costs come down from approximately US $1 per kilowatt-hour (kWh) in 1980 to 20-30 cents per kWh today. And with increasing scales of manufacturing and increasing emphasis on thin-film devices, it is expected that electricity costs from PV will fall below 10 cents per kilowatt-hour early in the next decade. Current annual world production has reached 150 megawatts peak (MWp), and is growing at more than twenty percent per year. Wind is the fastest growing energy technology in the world today. Today's highly reliable machines provide electricity at under 5 cents per kilowatt-hour at selected sites with above average wind speeds of seven metres per second. The cost of wind power decreased from 15 to 4.6 cents per kWh between 1984 to 1996 in Denmark, and by a factor of five since 1989 in Germany. Similar results were observed in case of Netherlands, UK and US.

[4] A preliminary analysis by Solar International Management,

growth-potential for renewables, particularly in scenarios where environmental constraints are imposed, for example on CO_2 emissions (International Energy Agency, 1997b):

- International Energy Agency: 7.5 per cent to 8.5 per cent annual growth in the commercial use of energy from 'new' renewables to 2010;
- World Energy Council: Business as usual scenario: growth from 18 per cent to 21 per cent of world needs by 2020; Ecologically driven scenario: growth from 18 to 30 per cent of world needs by 2020;
- United Nations: growth to 30 per cent of world needs met by renewables by 2025 and 45 per cent by 2050.

By 2100 the capital stock of the global energy system will turn over at least twice, offering the opportunity to increase the contribution of renewables significantly. World Energy Council/International Institute for Applied Systems Analysis scenarios for global energy consumption indicate a large contribution from renewables by 2050, equivalent to total fossil fuel and nuclear in 1990, and three times this amount by 2100. However, this requires substantial expenditure on research and development (R&D) and support for initial deployment, estimated to be $15 to 20 billion by the World Energy Council.

Barriers to RETs Penetration

RETs have to overcome a number of barriers before they can penetrate the market. In the initial stages of development, technical barriers predominate. Before a technology can become cost-effective, market barriers such as inconsistent pricing structures have to be overcome. Then there are institutional, political and legislative barriers which hinder the market penetration of technologies, including problems arising from a lack of awareness of, and experience with, new technologies and the lack of a suitable institutional and regulatory structure. Finally, there are social and environmental barriers, which result mainly from a lack of experience with planning regulations, which hinder the public acceptance of a technology. It is clear that a strategy which aims to increase the market penetration of renewable energy should address the full spectrum of barriers (OECD, 1997).

The most significant barrier to greater renewable energy use is its cost, despite the cost reductions achieved over recent years (International Energy Agency, 1997a). Other obstacles, particularly for the increased use of renewable electricity, include subsidies and other support for competing conventional fuels (especially coal and nuclear power). The lack of full cost pricing, when determining the cost of competing energy supplies, also hinders the development of renewable energy because the cost of environmental impacts is usually not included in energy prices. Furthermore, the development of competitive markets has not reached the stage when it can provide a market value for the extra diversification and security of supply brought by the introduction of renewables (World Energy Council, 1998). High discount rates and competition on short-term electricity prices, as seen in electricity markets undergoing a change in regulatory framework, may disadvantage projects with high capital costs but low running costs, such as renewable electricity systems, unless governments set up schemes designed to replace and substitute for estimated deficiencies of the market place. In addition to cost-related barriers, non-cost barriers can also inhibit the greater use of renewable energy. This is particularly the case with the imperfect flow of information and the lack of integrated planning procedures and guidelines.

There are numerous causes for imperfections in energy markets which can hinder the socially optimal penetration of RETs:

- Insufficient public information and lack of knowledge and exposure to RETs and concepts. Developers and financiers are often simply unaware of the technical and financial viability of RETs;
- Financial willingness and feasibility. The user may not have the willingness to pay or the ability to afford the additional investment on RETs equipment. An additional difficulty is that conventional credit does not fit well with the specific conditions for investment in RETs. Renewable energy systems are capital-intensive and require larger up-front investments and longer repayment periods than other energy technologies. Investors, therefore, may prefer to invest in energy systems with shorter payback periods, thus lowering their long-term risk exposure, even if those sources of energy are more expensive on a long-term life-cycle basis;
- Chicken and egg situation. The various RETs are not uniformly mature or cost effective. However, most renewables still have a significant way to go before they are competitive with fossil technologies, especially for power generation purposes. This will demand intense further R&D efforts. However, at present many renewables are in a

Inc. indicates that between 1998 and 2010, the global market for PV will require $3.7 billion invested in PV manufacturing facilities, $3.8 billion invested in the distribution channels, and $38 billion in end-user financing. Clearly, the major challenge, by a factor of 10:1, is end-user financing (Eckhart, 1999).

classic chicken and egg situation - financiers and manufacturers are reluctant to invest the capital needed to reduce costs when demand is low and uncertain, but demand stays low because potential economies of scale cannot be realised at low levels of production. RETs need to gain the confidence of developers, customers, planners and financiers (IEA, 1997a);

- Perception of risk—high discount rates. Financial institutions evaluate applications that have a RETs component in the traditional framework that does not take into account full economic and environmental advantages of investments into RETs and view them, often incorrectly, as being too risky, on the basis of outdated or incorrect information;
- Relatively small size of RET projects. Technological constraints usually limit the project size. As a result, projects often have low gross returns, even while the rate of return may be well within market standards of what is considered an attractive investment. Transaction costs of smaller projects are disproportionately high, compared with conventional projects. Transaction costs are relatively inelastic with respect to project size. Consequently, pre-investment costs (including financing, legal and engineering fees and consultants) have a proportionately higher impact on the total costs of RETs projects. Public agencies can make grants to cover the costs associated with establishing collaborative arrangements which, if successful, can be converted into an equity or royalty stake. The resulting financial return can then be redeployed as grants for successive projects. The Rockefeller Foundation has an ambitious programme of this kind aimed at stimulating private-sector investment in renewable energy and energy efficiency[5] enterprises across the developing world. RETs projects typically range from $500,000 to $10 million. This also means that they are often unable to tap the international financial markets or other sources of private capital such as that available from the International Finance Corporation, the arm of the World Bank that is the largest source of direct private-sector financing in the developing world. Except in Sub-Saharan Africa, the IFC does not usually consider projects smaller than $20 million (Schmidheiny and Zorraquín, 1996);
- Energy price distortions. Often energy prices do not reflect the full societal cost of energy. This can be due to subsidies that reduce the market price of energy and a lack of internalisation of external costs caused by pollution or other by-products of energy use. In the early 1990s average electricity tariffs in developing countries were less than US¢ 4 per kilowatt hour (kWh), even though the average cost of supply was around US¢10 per kWh. Such subsidies are harmful in a host of ways (International Energy Agency, 1999b). They constitute a huge financial drain[6] (World Bank, 1996);
- The "free rider" or "public goods" issue. Individual consumers might be unwilling to pay for RETs because their environmental benefits are shared equally by everyone, regardless of who pays;
- Lack of commercial guarantees to enable project financing. Even if long-term contracts are successfully negotiated with developing country public agencies, these agencies are not considered investment-grade without commercial guarantees. In many cases, foreign government agencies are encouraged to privatise and adopt market-based pricing structures at the same time as they are required to provide sovereign guarantees to secure long-term debt from the private sector. As a result, the liability for the project does not shift from the government's balance sheet to private project sponsors. Given the limited amount of exposure any government can credibly assume, RET projects are often unable to compete with other development priorities that receive sovereign guarantees;
- High start-up costs. In particular high start-up costs discourage companies from providing supplies to rural areas. Extending an electricity grid to a remote village can be very expensive, especially if only a few households are to be connected. Until more households join the network, the cost of electricity can reach US¢70 per kWh, seven times the typical cost in an urban area. Even setting up a solar electricity system for a single home can cost between $500 and $1,000, a large sum to spend in one lump. The problem here is not necessarily that people are unwilling to pay. Evidence suggests that people will spend a significant proportion of their incomes on better energy, which

[5] Energy efficiency measures can play an important role and are desirable from economic and environmental points of view; however, these measures alone cannot bring about a reduction in carbon emissions, given the pressures to satisfy unmet energy demand, particularly in developing countries.

[6] It is estimated that government subsidies for conventional energy were of the order $350-400 billion in early 1990s, but decreased to $250-300 billion per year by mid 1990s. The subsidies are both on the production and consumption sides.

improves their quality of life or enables them to become more productive. In Bangladesh even the poorest people are connecting to the grid when the service is available. In rural China, many people without easy access to cooking fuels are investing in efficient stoves and tree planting. The problem is that rural customers often cannot get affordable credit. That makes it difficult for them to pay the high start-up costs of improving their energy supplies. One solution may be to establish a local member-supported bank to make small loans (such as the Grameen Bank in Bangladesh, which lends mainly to women and poor people). Another is to promote companies that lease basic equipment to consumers, communities, and local energy suppliers (World Bank, 1996).

REVIEW OF RETS FINANCING SUPPORT MECHANISMS

Apart from a favourable regulatory environment, financial innovation is also required to promote a shift towards more investment in RETs. Examples of these include investment guarantees, energy service companies, convertible grants, venture capital, sublicensing, leasing and carbon offsets.

Most policies to encourage renewable energy are moving in the following directions (Piscitello and Bogach, 1997):

- Incentives are clearly intended to be temporary measures;
- Performance-based incentives are being used to encourage efficient projects;
- Competition is being explicitly or informally integrated into the implementation of financial incentives, to promote reduced technology and project development costs;
- The size of financial incentives is being targeted to match incremental life-cycle financial costs;
- Incentives are being developed with consideration of the potential for changing market conditions.

Several innovative financing mechanisms have been developed by various organisations to promote RETs. Some of the approaches convert the capital cost into an operating cost for first cost sensitive investors so that payments are aligned with the stream of benefits received. This type of "micro-financing" (Economic Commission for Africa, 1998) can also be achieved through innovative institutional mechanisms such as the Energy Service Company (ESCO). Small investments required to be made by the end users are aggregated through ESCO, which has risk-taking capacity and access to financing. We review some of the innovative financing mechanisms that have helped RETs develop.

International level

The World Bank

- The Asia Alternative Energy Program (ASTAE) was established in 1992 to promote renewable energy and energy efficiency in Asia through the World Bank's power sector lending operations. To support this goal, ASTAE works with both Bank staff and client country decision-makers to incorporate alternative energy options into the design of energy sector strategies and lending operations for all the Bank's client countries in Asia. Since its inception, ASTAE has generated substantial momentum, increasing the lending portfolio for alternative energy projects in Asia from about $2.0 million in financial year 1992 (FY92) to over $1.2 billion (FY93-FY00). These investments will result in over 1.6 gigawatts (GW) of avoided fossil fuel-based capacity through renewable energy capacity additions and energy efficiency demand reductions;
- The Solar Development Corporation (SDC), conceived as a free-standing, commercial enterprise, is being established by the IFC. Its primary objective is the development of viable, private sector business activity in the distribution, retail and financing of off-grid PV applications in developing countries;
- The Prototype Carbon Fund (PCF) has also been launched by the World Bank after the Kyoto Protocol. The fund will buy carbon offsets at a competitive price and ensure that buyers and sellers of off-sets receive a fair share of the value added. The price of the carbon offsets would cover the cost of additional emissions reductions and also include a margin to share the benefits from the offset between the investor and host;
- The IFC's Renewable Energy and Energy Efficiency Fund (REEF) is expected to be the first global fund dedicated to investing in private sector renewable energy and energy efficiency in developing countries. The fund is expected to provide $150-210 million of private and IFC capital for financing on/off-grid projects of less than 50MW;
- The Photo-voltaic Market Transformation Initiative (PVMTI) is a $30 million fund operated by the IFC. This will be used to accelerate the growth of PV markets in India, Kenya, and Morocco by providing leverage to private companies on a competitive basis;
- The Small and Medium Scale Enterprise Program (SME) is a $21 million activity of IFC supported by GEF. It finances biodiversity and/or climate change projects carried out by small and medium scale enterprises in GEF-eligible countries. Contingent, concessional loans are provided to financial intermediaries (FIs). These FIs then finance the SMEs. Two PV projects and one efficiency pro-

ject have been approved to date.

The World Bank has moved from the traditional government and subsidy centred approach to promoting renewable energy to the new, market-oriented approach in which consumer-side financing or fee-based service is the key issue. The Bank's focus is on three models of commercial financing of RETs, that emerged from past experience. (a) The most common dealer model refers to cash or credit-based sales by the RET equipment dealers. For example, more than 100 thousand households use PV systems in Kenya and the systems are sold through existing rural sales points such as general stores. This model is now being pursued by the Bank in the Indonesia World Bank Solar Home Systems Project, although in this case, sales are credit-based that is, first costs are lowered and deferred through a credit mechanism arranged for customers by dealers through the banking system. The average monthly payments with solar systems is less than the monthly costs of conventional energy systems. (b) The concession model depends on regulation by contract and is geared to provide large scale-economies. This is being tried out in Argentina where concessionaires that offer bids with the lowest subsidy to service rural house-holds and community centres will be given franchise rights for rural service territories. The choice of an appropriate cost-effective off-grid technology rests with the concessionaires. Partial financing of the start-up costs will be provided and payment for the services will be made by consumers. The importance of concessions models can also be observed in wind energy resource development, proposed as an instrument to harness wind energy resources concentrated in regions far from electricity markets (as in the US and China). The model can help in achieving economies of mass production and reduce transaction costs by increasing the market size. (c) The World Bank has employed another model, the retailer model, in Sri Lanka and Laos. In this model, a community, organisation, or entrepreneur develops a business plan to serve local demand for electricity and is given a loan. The cost is recovered through a fee-based service arrangement with the community/consumers. This approach may involve significant local involvement (World Bank, 1998).

United Nations Environment Programme

UNEP activities include a programme on Sustainable Production and Consumption. A component of this programme is to reduce the environmental impact of energy utilisation and UNEP encourages environmentally sound energy policies and technologies to achieve this objective. RETs are supported by UNEP through different mechanisms and in partnership with organisations such as GEF, UNDP, the World Bank, other regional and specialised UN agencies, bilateral and multilateral funding agencies, national governments and NGOs.

The UNEP-GEF project "Redirecting Commercial Investment Decisions to Cleaner Technologies – A Technology Transfer Clearinghouse" will influence investment decisions by providing advisory services to private sector clients beyond those borrowers might utilise on their own. By working directly with banks and their clients, it will overcome informational barriers in the financing of energy efficient and renewable energy technologies. Through carefully targeted appraisals of alternative technologies the project will increase loan officers' familiarity with energy efficient/renewable energy technologies investments. Knowledge and perception barriers, once removed, are unlikely to return. This permanent change in the institutional capacities developed through the project will favour replication of its activities by the participating lending institutions after the project ends.

The project will have the following results: additional lending directed at energy efficient and renewable energy technologies; upgrading of skills in loan officers in developing country financial institutions; and reduced emission of greenhouse gases.

United Nations Development Programme

UNDP has an Energy and Atmosphere Programme (EAP), a component of which is focused on energy issues, including the promotion of renewable energy and energy efficiency through such activities as (a) the joint UNDP/World Bank Energy Sector Management Programme (ESMAP); (b) the FINESSE (Financing Energy Services for Small-scale Energy-users) programme; and (c) building linkages with the UNDP-GEF unit on energy efficiency, renewable energy, and greenhouse gas issues. UNDP's involvement in the RETs is also through various agencies and mechanisms such as GEF, UNDP, World Bank, other regional and specialised UN agencies, bilateral and multilateral funding agencies, national governments and NGOs.

The EAP completed the *UNDP Initiative for Sustainable Energy (UNISE)* in 1996 which is based on the fact that traditional approaches to energy make energy a barrier to socio-economic development and are not sustainable. Renewable energy was one of the focus areas in the UNISE. Other global programmes and initiatives related to RETs within the EAP included operationalisation of UNSIE in various countries through different projects, and renewable energy and rural electrification programme to disseminate and commercialise renewable energy to provide rural energy services. Renewable energy issues are also addressed in other programmes as a part of the promotion of sustainable energy policy by UNDP.

Box 1. United Kingdom

In the United Kingdom, the Non-Fossil Fuel Obligation (NFFO) created by the Electricity Act obliges regional electricity companies to buy a certain amount of renewable electricity at a premium price for a specific number of years. The difference between the market and premium price is refunded to the regional electricity companies (RECs) from the Fossil Fuel Levy. The aim of the NFFO is to reach a renewable generation of 1500 megawatts (MW) by the year 2000.

Merits of the NFFO. Though the NFFO was originally established to subsidise the nuclear power industry during the transition to electricity privatisation, it has turned out to be a great boost for renewables. The NFFO demonstrated the ability of a government policy to institute a "market enablement" strategy for developing RE. By setting a goal that 3 per cent (1500 MW) of the nation's electricity should come from renewable sources, long-term capital investments in new technologies became feasible.

The price of electricity from renewables has fallen dramatically, particularly for wind. The fall in the price paid under NFFO contracts has occurred for several reasons. First, the longer duration contracts allow the initial investment to pay off over a longer period of time - crucial for renewable energy technologies since they tend to have high up-front capital costs. Second, there have been significant technology improvements resulting in decreased costs for RE, especially wind turbines (Wiser, 1997). Third, the cost of financing has declined as both investors and developers have gained experience with renewable projects.

Disadvantages of the NFFO. First, the short duration of the first two tranches resulted in a higher price because developers had to cover all the capital costs before 1998, rather than spreading them over the lifetime of the project. Therefore, the premium price paid was very expensive, giving renewable sources a reputation for high cost. Moreover, projects had to be developed as quickly as possible, resulting in some ill-considered projects. As a result of these lessons, the procedures of the third tranche were altered so contracts were set for 15 years, with an additional 5-year transition period before the contract lapsed. Second, the pricing mechanism sometimes favours less efficient systems. For example, waste incineration plants using co-generation of power and heat have been less competitive under the given pricing system, although compared to those producing power alone co-generation is more fuel efficient.

RETs are included in UNDP's regional and country programmes as well; for example, UNDP's Regional Bureau for Asia and the Pacific launched a study with the United Nations Department of Economic and Social Affairs (DESA), on the commercialisation of renewable energy, while Northeast Asia will have a specific sub-regional programme on renewable energy technology. Similarly, at the country level, China has a major programme on sustainable energy, and Viet Nam has a programme on rural renewable energy. EAP also provides technical expertise and services to UNDP country offices on RETs.

Joint Initiatives by International Agencies

- The Global Environment Facility (GEF)[7] funds the projects that provide global environmental benefits and local development gains in developing countries. The GEF provides grant financing to mitigate greenhouse gas emissions, and projects covered in this component are targeted at lowering barriers to the success of renewable energy and energy efficiency technologies. The World Bank, UNDP and UNEP are the executing agencies for the GEF projects;
- The Energy Sector Management Assistance Program (ESMAP) is a global technical assistance programme sponsored by UNDP, the World Bank and bilateral donors. Renewable energy projects are an important component of the ESMAP. The programme also features innovative financing mechanism such as the solar PV concession systems for Argentina. ESMAP has also reached to the poorest in Africa through its micro PV lantern demonstration projects;
- The Renewable Energy Partnership (REP) Programme is being proposed by the World Bank and the GEF to provide increased and more flexible Bank and GEF funding to emerging market countries that make serious commitments to renewable energy development. The key to eligibility will lie in making renewables-friendly policies, regulatory changes and other steps to foster renewable energy development.

Kyoto mechanisms

The UNFCCC envisages private and public sector investment by organisations outside of their own countries that reduce greenhouse gas (GHG) emissions in order to offset GHG emissions in their home country.

[7] This facility, reflecting world-wide concern with global environmental degradation, has raised about $ 2 billion to provide incremental funding on a grant basis for projects that have substantial long-term environmental benefits. Four areas of environmental concern are covered by GEF: (i) ozone layer depletion; (ii) ocean water pollution; (iii) loss of biodiversity; and (iv) global climate change. About 40 percent of these funds are allocated for projects that reduce GHG emissions into the atmosphere and, hence, alleviate concerns for global climate change.

Box 2. Renewables Portfolio Standard

Under a Renewables Portfolio Standard (RPS), all retail electricity suppliers are required to obtain a certain minimum percentage of their electricity from renewable energy in the form of "renewable energy credits" (RECs). A REC is a type of tradable credit representing one kWh of electricity generated by renewables. Electricity retailers can obtain RECs in three ways. They can own their own renewable energy generation, and each kWh generated by these plants would represent one REC. They can purchase renewable energy from a separate renewable energy generator, hence obtaining one REC for each kWh of renewable electricity they purchase. Or, they can purchase RECs, without purchasing the actual power, from a broker who facilitates trades between various buyers and sellers (Bernow et al., 1998). RECs are, therefore, certificates of proof that one kWh of electricity has been generated by renewables, and these RECs can be traded independently of the power itself. The basic idea of the RPS is to ensure that a certain minimum percentage of electricity is generated by renewables but to encourage maximum efficiency by allowing the market to determine the most cost-effective solution for each electricity retailer: whether to own renewable generation, purchase renewable electricity, or buy credits, and what type of renewable energy to use (Rader and Norgaard, 1996).

Merits of the RPS. A primary advantage of the RPS as compared to the NFFO is that it does not require the centralised collection and dissemination of funds or require state agencies to make decisions about winners and losers. The market makes all decisions regarding which renewable plants to build, where, and at what price - thus, the market can be expected to deliver these results at the lowest possible cost. There are several ways in which the RPS assures least-cost achievement of a country's renewable energy goals. First, the certainty and stability of the RPS policy will generate long-term contracts and financing for the renewable power industry resulting in lower renewable power costs. Least-cost compliance is encouraged by the flexibility provided to generators, who can compare the cost of owning a renewables facility to the cost of purchasing RECs from others. Finally, since generators will be looking to improve their competitive position in the market, they will try to drive down the cost of renewables, perhaps by lending their own financial resources to a renewables project, by seeking out least-cost renewables applications, or by entering into long-term purchasing commitments. This fosters a "competitive dynamic" that is not achieved with policies that involve direct subsidies to renewable generators without involving the rest of the electricity industry. This is essential in a renewable energy market, because it encourages the direct integration of renewable technologies into the existing generators' portfolios.

Disadvantages of the RPS. First, opponents cite the inability to contain costs as one of the main drawbacks to a RPS policy. As originally conceived, the RPS policy does not have an explicit cost cap, instead the market determines the total cost. Thus, costs could potentially be higher than expected to achieve a desired renewable energy level. Second, the RPS places the burden on the retail electricity suppliers who would be required to actively participate in the renewables (or at least the REC) market. The incremental effects on the electricity would differ by retail supplier - giving an advantage to those facilities with higher pre-existing levels of renewables in their portfolios. Third, some argue that once the minimum level for a RPS is reached than there is little incentive to increase the renewables development.

The new climate change regime also offers an opportunity for RETs as they meet the two basic conditions to be eligible for assistance under the UNFCCC implementing mechanisms: they contribute to global sustainability through GHG mitigation; and they conform to national priorities by leading to development of local capacities and infrastructure. Further, with the Kyoto Protocol,[8] the Parties to the UNFCCC are taking steps towards internalising the external costs of the GHG emissions. While the Kyoto Protocol has not yet proposed any binding emissions limitation commitments for developing nations, flexible instruments such as the Clean Development Mechanism and the possibilities of emissions trading are likely to provide economic incentives for significant emissions abatement in developing countries. The altered competitive dynamics should also prove favourable for RETs (Flavin and Dunn, 1998).

The GEF is examining ways to spur the growth of carbon offset markets and to accelerate foreign investment in sectors offering the opportunity for low-cost GHG mitigation. The project finance is proposed to be linked to carbon emission reductions at the project level. This is also expected to leverage and mobilise private capital into more RET projects.[9]

National level

European Union

The European Union (EU) committed itself to reduce greenhouse gas emissions by 8 per cent by the

[8] Of most interest to RETs is Article 2, subparagraph iv of the Kyoto Protocol: "Research on, and promotion, development and increased use of, new and renewable forms of energy, of carbon dioxide sequestration technologies and of advanced innovative environmentally sound technologies" (UNFCCC, 1997).

[9] http://solstice.crest.org/efficiency/cef.

Table 1: Financial Incentives for Off-Grid Photo-voltaic Systems

	India	*Indonesia*	*Mexico*
Systems being supported	– Solar home systems – Street lighting systems – Decentralised power stations – Solar lanterns – Solar pump sets	Solar home systems.	Solar home systems.
Scale of support	3/92 — 12/96: 4.8 MWp.	200,000 systems (anticipated) under Bank/GEF-assisted project. 10 MWp.	24,000 systems (as of February 1996).
Primary incentives offered	– Subsidies against investment. – Subsidised loans. – 100 per cent accelerated depreciation.	$125 or $75 grant per system sold, depending on location.	Federal and state government subsidies against installed cost (50 and 30 per cent, respectively).
Recipient of incentive	End-user	Suppliers/dealers.	Private companies and non-governmental organisations hired by electric utility to install systems.
Payment of incentive	Central government's Ministry of Non-conventional Energy Sources (MNES).	Global Environment Facility.	Central government's National Solidarity Program (PRONASOL).
Implementation/ conditions for incentive	– Dealers market systems directly to end users. Systems also sold at MNES "showrooms". – State agencies provide subsidies against investment, and monitor implementation including technical performance of systems. – IREDA provides limited annual subsidised loans. – Systems must meet MNES technical specifications. – Subsidies for certain systems limited to designated users.	– Suppliers/dealers receive grant after system is installed. – Solar home systems must meet technical specifications. – Dealers must offer instalment payment plans and a consumer protection package to end-users. – Dealers must provide documentation to a Project Support Group.	– End-users submit application for solar home systems to local government. – Local government forms electrification committee and submits request to PRONASOL. – PRONASOL selects sites on basis of remoteness, distance from grid, and lack of near-term grid connection plans. – Utility contracts with private companies to install solar home systems. – Local governments and participating communities provide 20 per cent of project costs, including in kind resources.

Source: Piscitello, E.S. and V.S. and Bogach, 1997. Financial Incentive for Renewable Energy Development, World Bank Discussion Paper No. 391, p.9.

target period 2008 to 2012, from the base year 1990. One strategy to reach this ambitious goal is to change the energy system towards increased reliance on low carbon fuels, such as natural gas, and by support for renewable energy (European Commission, 1997).

There have been several conferences and meetings in the EU on the financing of RETs. The financing schemes and projects were reviewed by Langniss (1999) under the project "Financing Renewable Energy Systems" (FIRE). The financing schemes in the EU have been categorised as follows:

- Private finance, which is mainly concerned with smaller projects and financing, comes from personal savings or bank loans secured by private assets. A subsidy component is usually present. The financial structure varies across projects in terms of equity, soft loan/debt, and subsidies, but overall, equity and subsidies make up the most significant part of the project costs;

- Corporate finance refers to the case where the investor is a company. The equity component is usually below 50 per cent. In most cases, subsidies are available and companies make use of the subsidy to earn a reasonable rate of return on investment;
- Project finance implies a specific company founded for the purpose of the project. The investors are not generally users of the energy, but sell the energy though contract arrangements (Mills and Taylor, 1994). High cost projects are normally financed through this means. Debt is observed to be a major cost component in this case;
- Participation finance is similar to project finance but the number of investors is large, for example, a co-operative. Involvement of the locals as equity holders is quite common in such projects;
- The third party finance model refers to a contractual arrangement where a third party, other than the energy user, develops, finances and operates the energy system. The energy consumer pays the third party as per the contract to cover costs and a reasonable margin. The project may consider hire purchases, leasing or any other mode for repayment of the investment costs. The ownership of the project may get transferred to the user at the end of the contract.

A variety of incentives were offered in the renewable energy projects reviewed under FIRE. These included investment subsidies, soft loans, energy taxes, tax advantages and higher tariffs for electricity produced through RETs. In Germany, the Electricity Feed Law provides for guaranteed prices for electricity fed to the grid from certain renewables. Hydro power, electricity from biomass, wind and solar electricity are paid guaranteed prices by the utilities. In Italy, distribution companies are obliged to purchase energy from renewables. In the Netherlands, subsidy programmes are being replaced by fiscal measures. Exemption from regulatory energy taxes (REB), and free depreciation of environmental investments for green investment schemes are its features. Spain has a Royal Decree that allows electricity from renewables to be charged at the long-term avoided costs of the distributing utility.

Rate of returns for various RETs in EU countries have been reviewed in FIRE based on various case studies. The impact of various policies such as different energy pricing levels, energy taxes, income taxes and other taxes on the rate of return has been brought out in the study. The wind farm internal rate of return (IRR), for example, varied from a low of about 4 per cent in UK and Sweden to a high of about 20 per cent in Denmark when only the price levels for wind power fed to a grid were considered. However, the IRR after tax was lowest in Sweden (0 per cent) and highest in Netherlands (19 per cent) when tax policies were also considered. This is because tax policies are favourable for RETs in some countries. These include income taxes, treatment of losses (from the project), depreciation allowances, VAT rules, etc. Similar variations were observed in other RETs such as hydropower, PV, solar thermal and biomass. The net present value (NPV) was negative in all the countries for PV and solar thermal applications even after tax policies had been considered.

United States

The approach to financing RETs in the United States has been similar to the EU, although the incentive structure varies across states. In California, which succeeded in promoting renewables, utilities were required to issue 15-30 year power purchase agreements with the option of high fixed prices for the initial 10 years for wind energy between 1983-91. From 1992 onwards, a Federal production tax credit of 1.5 per kWh and a wind investment tax credit of 10 per cent were provided. Other incentives included tax benefits, accelerated depreciation, and so on. As a result of various measures, by the early 1990s about 10 per cent of installed generating capacity was provided by renewable energy. Similar incentives were made available for PV.

Developing Countries

Several developing countries also provided financial incentives to promote renewables. In India, financial incentives for wind energy and PV included accelerated depreciation (100 per cent in the first year), tax holidays, favourable electricity wheeling and banking policies, concessional duties and taxes on equipment and standard buy-back rates for power (Bakthavatsalam, 1999). Off-grid incentives to promote renewables were also provided in several countries. For example, Indonesia offered grants and Mexico offered subsidies against installed costs for solar home systems (table 1).

Non-Governmental Organisations

Several international and national NGOs are involved in promoting renewable energy in various countries. They have developed innovative financing mechanisms to support renewable energy on a sustained basis. Some of the initiatives are covered below:

(a) E&Co's mission is "to promote developing country energy enterprises that create economically self-sustaining energy projects; use environmentally superior technologies; and produce a more equal distribution of energy, especially to the poor". To this end E&Co participates in enterprise development to share risk and leveraging funding from conventional sources. E&Co was conceived by the Rockfeller Foundation to address the barriers in promotion of RETs and energy efficient technologies in developing coun-

tries. E&Co provides small loans, technical assistance, intermediary services and direct investment for (i) innovative implementation of a proven technology; (ii) technology innovations that are high risk by nature but have a potential for innovation in energy production; (iii) promoting new energy delivery techniques in rural areas where end-users of energy have little ability to pay; and (iv) innovative financing (including credit, loan and equity) of energy enterprises to provide cost effective energy services to potential end-users currently without access to such services.

E&Co has financed a variety of renewable energy projects in developing countries; for example, Krishok Bandhu Agro-Systems Limited in Bangladesh was established in 1995 to sell treadle pumps and other manually operated irrigation devices, drinking water pumps, and other agricultural inputs to farmers in Bangladesh. The support was in the form of a loan from E&Co to serve as collateral for a local bank loan. In Bolivia, E&Co provided a loan for the construction phase of the Kanata Hydro Electric Project and a loan to Riberalta Biomass Power Plant at a critical stage when the project was in need of funds due to cost escalations. The loan helped the Cooperativa Eléctrica Riberalta Ltda. (CER), a local Bolivian electricity co-operative and owner of the plant to leverage funds from other sources.

In Viet Nam, E&Co is providing an equity investment to the SELCO-Vietnam, a Solar Electric Light Company that aims to electrify the country's 6-7 million off-grid rural households with solar home systems (SHS). Solar Electric Light Fund (SELF), a United States-based NGO, was provided $ 250,000 in 1994 for a 49 per cent equity share in a Chinese-American joint venture company establishing a PV manufacturing facility, the Gansu Photo-voltaic Company. Support was also provided for an independent technical and economic assessment of this facility's operations. This assessment not only reported that the manufacturing facility was up and running, but also reported an increase in the number of units being produced and sold in the marketplace. The Solar Electric Light Company (SELCO), a solar energy services company that markets small-scale PV power systems in southern India to rural households not serviced by the electric grid, was supported in 1995 by E&Co through an equity investment to provide SELCO with the needed working capital to expand its operations. This equity investment of $50,000 resulted in a 5 per cent E&Co ownership share in the company. E&Co also provided a bank guarantee to allow SELCO to access funds for direct consumer financing. As a result of negotiations with the Indian Renewable Energy Development Agency (IREDA), SELCO has accessed GEF funds for on-lending to end-users. These funds — the first World Bank/GEF funds for solar home systems — have been guaranteed through an E&Co account in a local Indian Bank;

(b) Enersol Associates, Inc. is a non-profit organisation promoting use of solar energy for rural development in developing countries. Enersol has created a solar fund (Fondo Solar) which helped NGOs in the Dominican Republic and Honduras to raise finance for solar energy development. NGOs can secure commercial bank loans in local currency guaranteed with Fondo Solar funds. This familiarised NGO implementers and rural beneficiaries with credit procedures, and also helped the formal banking sector's forays into this area. Enersol has helped develop a local network of independent local enterprises which sell, install, and maintain solar-electric systems in rural communities of the Dominican Republic and Honduras. The entrepreneurs are provided training and technical assistance. The micro-enterprises (about 15) in the Dominican Republic have installed over 6,000 PV systems which provide electricity to rural homes, farms, schools, businesses, community centres and health clinics. The financing of these systems (over $80,000) was arranged by the NGOs. Enersol extended its programme to Honduras in 1992, where 20 such micro-enterprises installed over 2,000 systems with financing through consumer credits;[10]

(c) The Grameen Bank (Village Bank) in Bangladesh is well known for its small-scale rural credit schemes (ECA, 1998). The Bank has now initiated a programme to finance renewable energy in rural areas that constitute 85 per cent of the country's population — most of which is without access to electricity. The Bank has established Grameen Shakti, a not-for-profit rural power company. Grameen Shakti is preparing a financing scheme for development of solar PV systems, wind turbines, and biogas. It will also prepare a strategy for the supply, marketing, sales, and testing of RETs;

(d) Decentralised Energy Systems India Private Limited (DESI Power) is experimenting with the concept of Independent Rural Power Producers (IRPPs) in India. The company plans to enter into joint venture agreements with village communities or local entrepreneurs to set up small power plants of between 100 to 500 kW capacity utilising local renewable energy sources. It will also be open to financing inputs from socially responsible funding sources and ethical/commercial investors elsewhere. The financial structure of the joint venture IRPPs envisaged DESI Power (26 per cent) and the local community (25 per cent) with controlling interest at 51 per cent, leaving the remaining 49 per cent of the equity and loans to be raised from the public and other sources. The pro-

[10] http://www.enersol.org/front.html.

moters have already established one power plant of 100 kW rating which has been in regular operation since 1996. Located in Orchha in Madhya Pradesh, the plant supplies power to a hand-made paper factory and other consumers in the neighbourhood;[11]

(e) The goal of the International Fund for Renewable Energy and Energy Efficiency (IFREE) is to promote the sustainable use of renewable energy and energy efficient technologies in less developed and transition economies. The technologies include commercial application of biomass, geothermal, hydropower, natural gas, PV, solar thermal, wind energy, and energy efficiency technologies. IFREE provides a part of the pre-investment funding to share the risk of project development with private sector companies for commercially financed projects. IFREE has funded several pre-investment studies for renewables such as hydro, solar, wind, geo-thermal and biomass power in developing countries.[12]

Other Initiatives

(a) Polyene Film Industries (PFI), a manufacturer of solar PV water pumps in South India, joined with a local commercial finance company (Nagarjuna Group) to use low cost funds provided by the IREDA and tax incentives offered by the Government of India to make pumping systems affordable to rural farmers. In this scheme, farmers have to pay a one-time upfront payment, which is now affordable. The finance company is able to lower the cost to the farmers because it makes use of tax incentives and low cost funds available from IREDA. On their own, farmers would not have been able to make use of the low cost funds and tax incentives because of the high upfront cost of the system. The low cost funds to IREDA were provided by the World Bank through the Government of India. Winrock international has tied up with IREDA to promote RETs;

(b) Triodos Bank, a Dutch bank, has decided to invest several million guilders in PV technology in developing countries through a new Solar Investment Fund. The objective is to provide solar energy at an affordable cost to rural households and small businesses in developing countries;[13]

(c) SELCO has raised equity funding from Swiss, German, and United States investors. It has also lined up an additional $28 million in debt from various lending institutions and investment funds for consumer finance of solar home systems. SELCO will sell and service solar PV household lighting and power systems on a global scale, focusing on emerging market countries;

(d) Solar Bank TM is an initiative by the finance community that seeks to tap the global capital markets for funds for the PV markets. It is a private institution that acts as a secondary lender to existing local primary financial institutions such as banks, cooperatives, credit unions, electric utilities, energy service companies, micro-enterprise lenders, and others in a position to finance local PV markets. That is, the Solar Bank will purchase PV loans from primary lenders, and will manage the credit risk and interest rate risk on a portfolio basis. Solar Bank will also finance PV projects directly;

(e) Bilateral funding agencies such as USAID, DANIDA, SIDA and GTZ have been promoting RETs in developing countries through various projects. The aim of most of the cases is to address technical, financial, institutional and other barriers through demonstration projects.

CONCLUSIONS

(a) RETs are not being deployed at a sufficiently rapid rate. There is a mismatch between their potential to meet sustainable development goals and the resources being allocated to them;

(b) Renewable energy is generally more expensive than conventional technology, current low energy prices worsen the problem. Subsidies given to fossil fuels and the absence of policies to internalise the social cost of carbon emissions increase this price disadvantage;

(c) RETs need to move away from the traditional aid/grant culture associated with these technologies. Governments need to recognise the important role RETs can play in contributing to sustainable development. The challenge of increasing RETs penetration is to establish organisational, institutional and financial conditions under which a commercial market for these technologies can develop, especially in developing countries;

(d) In the experience of the developers/bankers, the following strategies promoted by governments have been successful. In some developed countries governments have specified that electricity producers need to have a certain progressively increasing proportion of their generation from renewable sources. This provides much needed economies of scale to the renewable equipment manufacturers. To fulfil their commitments, the utilities are forced to invest in these technologies. However, the investment is channelled into the most competitive technology source, thus promoting competition. Hence, while providing economies of scale to these technologies, this strategy also promotes competition. Governments need to give clear long-term signals on their renewable policies (South Africa has a White Paper on their policies). In some of the countries the government pays a higher

[11] http://www.ecouncil.ac.cr/devalt/desi.htm.

[12] http://www.energyhouse.com.

[13] http://solstice.crest.org/efficiency/cef.

price for renewables which has been fixed at different levels for the different technologies, as necessary. Such policies help technology suppliers plan, put effort in research and development and lower the cost of technology. Certain institutions like IREDA (India) have played a very important role in the development of these technologies. These institutions could be replicated in other countries;

(e) Greater private sector involvement is needed in integrating renewable sources into the energy system;

(f) Despite their acknowledged benefits, the economic future for renewables remains uncertain and there are barriers which must be overcome. There is a need to level the playing field by withdrawing subsidies to conventional fossil fuels and by including externalities in energy prices. Governments can also apply legislation, market measures and temporary incentives to encourage investment by the private and financial sectors. Measures which have proved successful should be replicated, where appropriate, in other countries. In order to provide tomorrow's technologies, substantial long-term research and development is needed to decrease costs and negative environmental impacts and to increase the reliability and maintainability of RETs;

(g) A central dimension of financial innovation is public-private sector collaboration;

(h) The key financing issue in developing countries is the availability of capital to RET developers and rural end-users, while the key issues in developed countries involve the cost of money, the ease of obtaining low-cost funds, and institutional complexities that hinder financing and market growth. Several innovative financing mechanisms for RET developers and end users have been devised and tested by the international organisations, governments and NGOs to promote renewable energy, specially in developing countries. Some of the mechanism show potential to increase penetration of RETs in developing countries;

(i) Challenges for policymakers will be to develop market and industry structures that promote technological innovation and to ensure that renewable energy can play a prominent role in the provision of electricity services. Since electricity is essential in any society, achieving sustainable development will require "sustainable electricity".■

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ANNEX I

Fifth Expert Group Meeting on Finance for
Sustainable Development: Testing New Policy Approaches
Nairobi, Kenya, 1 - 4 December 1999

Sponsored by the Governments of the Netherlands, Ireland, and Kenya
Organized by the United Nations Department of Economic and Social Affairs (UNDESA)
Hosted by the United Nations Environment Programme (UNEP)

AGENDA

Wednesday, 1 December 1999

9:00 am Registration

9:30 am Opening Session

Jorge Illueca, Assistant Executive Director, Division of Environmental Conventions, United Nations Environment Programme

The Honourable Chrisanthus Okemo, E.G.H., M.P., Minister for Finance, Government of Kenya

Ron Lander, Head, International Environmental Policy, Instruments and Water Management Division, Environment and Development Department, Ministry of Foreign Affairs, The Netherlands

Dympna Hayes, First Secretary, Permanent Mission of Ireland to the United Nations

JoAnne DiSano, Director, Division for Sustainable Development, United Nations, Department of Economic and Social Affairs

Break following the Opening Session

Session I: Improving the policy framework for sustainable development finance

10:45 am *Chairman's introduction*

Lin See-Yan, Chairman of the Fifth Expert Group Meeting

11:00 am *Taking stock of sustainable development finance in Sub-Saharan Africa since "Rio+5"*

Author: T. Ademola Oyejide, University of Ibadan, Nigeria
Discussant: Theodore Panayotou, Harvard Institute for International Development, Harvard University

12:00 pm Lunch break

Session I (continued)

2:00 pm *Integrating public environmental expenditure management and public finance in transition economies*

Author: Grzegorz Peszko, Organisation for Economic Co-operation and Development
Discussant: Ron Lander, Environment and Development Department, Ministry of Foreign Affairs, Government of the Netherlands

Session II: New policy approaches in international finance

3:30 pm *Reversing the decline of ODA: How effective is the current policy agenda*?

Author: Kazuo Takahashi, International Development Research Institute, Japan
Discussant: Marco Ferroni, World Bank

5:00 pm Close

Thursday 2 December 1997

Session II (continued)

9:00 am *ODA and Sustainable Development in Africa: towards a new strategy*

Author: R. Omotayo Olaniyan, Organisation of African Unity
Discussant: Geoffrey N. Mwau, United Nations Economic Commission for Africa

10:00 am *Debt relief and sustainable development in Sub-Saharan Africa*

Author: Nguyuru H.I. Lipumba, Consultant, Tanzania
Discussant: Augustin Fosu, African Economic Research Consortium, Kenya

11:00 am *Increasing the contribution of FDI and foreign portfolio investment to sustainable development: recent domestic and international policy measures*

Authors: Peter Gray and John Dilyard, Rutgers University, USA
Discussant: Thomas Brewer, Copenhagen Business School, Denmark

12:00 pm Lunch Break

Session II (continued)

2:00 pm *Attracting capital inflows to Africa: essential elements of a policy package*

Authors: Louis Kasekende and Ashok Bhundia, Bank of Uganda
Discussant: Charles Okeahalam, University of the Witwatersrand, South Africa

The impact of regionalization in the African capital markets sector and the mobilization of foreign capital for sustainable development

Author: Nicholas Biekpe, University of Stellenbosch, South Africa
Discussant: Charles Okeahalam, University of the Witwatersrand, South Africa

Session III: New policy approaches in domestic finance

3:30 pm *Advancing subsidy reforms: towards a viable policy package*

Authors: David Pearce with Donata Finck von Finckenstein, CSERGE, University College, London, UK
Discussant: Andre de Moor, Ministry of Economic Affairs, The Netherlands

5:00 pm Close

Friday 3 December 1999

Session III (continued)

9:00 am *Overview and recent experiences with ecological tax reforms in Europe*

Author: Kai Schlegelmilch, Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Germany
Discussant: Grzegorz Peszko, Organisation for Economic Co-operation and Development

10:00pm *Increasing the role of environmental taxes and charges as a policy instrument in developing countries: some conceptual considerations*

Author: Jürgen Backhaus, University of Maastricht, The Netherlands
Discussant: R. Omotayo Olaniyan, Organisation of African Unity

11:00 am *Promoting private sector participation in the financing of sustainable development*

Authors: Anil Markandya with P. Francis, University of Bath, UK
Discussant: Carl Greenidge, Africa, the Caribbean and the Pacific Group States

12:00 pm Lunch Break

Session III (continued)

2:00 pm *The greening of financial markets*

Author: Carlos Joly, Storebrand Investments, Norway
Discussant: Thomas Brewer, Copenhagen Business School, Denmark

Session IV: Innovative mechanisms in sector finance

3:00 pm *Innovative mechanisms for sustainable sector financing*

Author: Theodore Panayotou, Harvard Institute for International Development
Discussant: Eric Chatman, African Development Bank

Promoting private sector financing of commercial investments in renewable energy technologies

Author: Norbert Wohlgemuth and Jyoti Painuly, United Nations Environment Programme Collaborating Centre on Energy and Development, Denmark
Discussant: Eric Chatman, African Development Bank

5:00 pm Close

Saturday 4 December 1999

Closing Session

9:00 am Presentation and discussions of draft Chairman's Summary

12:00 pm Lunch

Closing Session (continued)

2:00 pm Discussion of draft Chairman's Summary

5:00 pm Chairman's Closing Remarks

Background Papers and Documents:

1. UNEP, 1999. *UNEP's financing services initiatives: banking and insurance.*

2. Theodore Panayotou, 1997. "Taking stock of trends in sustainable development financing since Rio," in Juergen Holst, Peter Koudal and Jeffrey Vincent (eds.), *Finance for Sustainable Development: The Road Ahead* (New York: United Nations), 1997.

3. Information note on the United Nations Meeting on "Financing for Development," September 1999.

ANNEX II

FIFTH EXPERT GROUP MEETING ON FINANCIAL ISSUES OF AGENDA 21
FINANCE FOR SUSTAINABLE DEVELOPMENT: TESTING NEW POLICY APPROACHES

LIST OF PARTICIPANTS

THE HON. CHRISANTHUS OKEMO, E.G.H., M.P.
Minister for Finance
Ministry of Finance and Planning
PO Box 30007
Nairobi, Kenya

Tel: (254) 2-221-7492

ADAM ADAWA
First Secretary
Permanent Mission of the Republic of Kenya
to the United Nations
866 UN Plaza, RM 486
New York, NY 10017, USA

Tel: (1) 212-421-4740
Fax: (1) 212-486-1985

ALOYSIUS AJAB AMIN
Associate Professor of Economics
Faculty of Law and Economics
University of Yaounde II
B.P. 14173, Yaounde, Cameroon

Tel/Fax: (237) 31-77-90
Email: rudev@iccnet.cm

J.G. BACKHAUS
Professor, Economics Department
Maastricht University
PO Box 616, 6200 MD
Maastricht, The Netherlands

Tel: (31) 43-388-3636
Fax: (31) 43-325-8440
Email: s.roggen@algec.unimaas.nl

D.K. BERKOH
Head, Multilateral Sector
International Economic Relations Division
Ministry of Finance
PO Box M40, Accra, Ghana

Tel: (233) 21- 663102
Fax: (233) 21-663854/667069

NICHOLAS BIEKPE
Professor, Africa Centre for Investment Analysis
University of Stellenbosch
PO Box 610, Belleville 7535
Capetown, South Africa

Tel: (27) 21-9184-261
Fax: (27) 21-9184-112
Email: nbiekpe@acia.sun.ac.za

INGER-MARIE BØNNESS
Adviser, Royal Ministry of Foreign Affairs
Department of Natural Resources and
Environmental Affairs
Oslo, Norway

Tel: (47) 22-24-36-00
Fax: (47) 22-24-95-80/81
Email: ressurs@ud.dep.telemax.no

THOMAS L. BREWER
Professor
Institute of International Economics and Management
Copenhagen Business School, Nansensgade 19
1366 København K, Denmark

Tel: (45) 38-15-25-18
Fax: (45) 38-15-25-00
Email: tb.int@cbs.dk

ERIC CHATMAN
Manager of the Bank's Special Operations
Treasury Department
African Development Bank
01 BP 1387-Abidjan 01, Cote D'Ivoire

Fax 1: (225) 20-49-13
Fax 2: (225) 205-221
Email: e.chatman@afdb.org

SEOK-YOUNG CHOI
Counsellor
Permanent Mission of the Republic of Korea
to the United Nations
335 East 45th Street
New York, New York 10017, USA

Tel: (1) 212-715-2268
Fax: (1) 212-371-8873
Email: sychoi55@yahoo.com 11

ANDRE DE MOOR
Senior Policy Analyst
Economics Department
Section Environment and Spatial Planning,
A/523, PO Box 20101, 2500 EC
The Hague, The Netherlands

Tel: (31) 70-272-4179
Fax: (31) 70-379-6167/31 (31) 30-272-2483
Email: a.p.g.demoor@minez.nl

TAHIROU DIAO
President
Sahel DEFIS
Chemin de Fontanières 69350
La Mulatière, France

Tel: (33) 4-78-51-48-88
Fax: (33) 4-78-51-48-58
Email: ccd1196@wanadoo.fr

MARCO FERRONI
Senior Advisor
Resource Mobilization and Cofinancing
The World Bank, Room # Q5001,
1818 H Street NW
Washington, DC 20433, USA

Tel: (1) 202-458-2194
Fax: (1) 202-477-3045
Email: mferroni@worldbank.org

AUGUSTIN K. FOSU
Director of Research
African Economic Research Consortium
PO Box 62882, Nairobi, Kenya

Tel: (254) 2-228-057/225-234
Fax: (254) 2-219-308 (254) 2-246-708
Email: aercres@form-net.com

CHRISTOPHER GAKAHU
Programme Specialist
United Nations Development Programme
PO Box 30218, Nairobi, Kenya

Tel: (254) 2-624-457/8
Fax: (254) 2-624-487/88/90
Email: christopher.gakahu@undp.org

SAMUEL G. GICHERE
National Project Coordinator
Capacity 21 "Kendevelu" Project
Ministry of Finance and Planning
PO Box 30005, Nairobi, Kenya

Fax: (254) 2-624-489/90
Email: gichere@nbnet.co.ke

H. PETER GRAY
Professor of Economics
Department of Finance and Economics
Rutgers, The State University of New Jersey
94 Rockefeller Road, Piscataway,
New Jersey 08854, USA

Tel: (1) 732-445-3907 (work)
Fax: (1) 732-445-5647 (work) (1) 201-648-1323 (office)
Email: jeanmgray@juno.com

CARL GREENIDGE
Deputy Secretary General
ACP Group of States Secretariat
451 Avenue Georges Henri
1200 Brussels, Belgium

Tel: (32) 2-743-0612
Fax: (32) 2-733-1472
Email: cbgreenidge@acpsec.org

DYMPNA HAYES
First Secretary
Permanent Mission of Ireland to the United Nations
1, Dag Hammarskjöld Plaza
885 Second Avenue, 19th Floor
New York, New York 10017, USA

Tel: (1) 212-421-6934
Fax: (1) 212- 752-4726
Email: irlun@undp.org

JUERGEN HOLST
Chief, Finance, Industry and Trade Unit
DSD/DESA, United Nations
Two United Nations Plaza, Room DC2-2216
New York, New York 10017, USA

Tel: (1) 212-963-4677
Fax: (1) 212-963-4260
Email: holst@un.org

JORGE ILLUECA
Assistant Executive Director
Division of Environmental Convention
United Nations Environment Programme
PO Box 30552, Nairobi, Kenya

Tel: (254) 2-624011/623494
Fax: (254) 2-624300
Email: jorge.illueca@unep.org

KARIN JOHANSON
Desk Officer
Global Cooperation Department
Ministry of Foreign Affairs
10339, Stockholm, Sweden

Tel: (46) 8-405-34-55
Fax: (46) 8-732-11-76
Email: karin.johanson@foreign.ministry.se

CARLOS JOLY
Senior Vice-President
Storebrand ASA
PO Box 1380 Vika, 0114
Oslo, Norway

Tel: (47) 223-12-931
Fax: (47) 224-496-78
Email: carlos_joly@im.storebrand.no

LOUIS KASEKENDE
Executive Director for Policy and Research
Bank of Uganda
37-43 Kampala Road
PO Box 7120, Kampala, Uganda

Tel: (256) 41-233-933 (256) 41-258-441
Fax: (256) 41-244-322 (256) 41-255-480
Email: louisk@starcom.co.ug

KIM YONG-JIN
Embassy of the Republic of Korea
PO Box 30455, Nairobi, Kenya

Tel: (254) 2-333-581/2
Fax: (254) 2-217-772

KAHUNYURO M. KIMEMIA
Principal Economist
Ministry of Environment and Natural Resources
PO Box 67839, Nairobi, Kenya

Tel: (254) 2-243-869/088
Email: kmkimemia@yahoo.com

RON LANDER
Head, Instruments and Water Management Division
Environment and Development Department
Ministry of Foreign Affairs
2500, The Hague, The Netherlands

Tel: (31) 70-348-4304
Fax: (31) 70- 348-4303
Email: r.lander@dml.minbuza.nl

DONALD LEE
Economic Affairs Officer
Finance, Industry and Trade Unit
DSD/DESA, United Nations
Two United Nations Plaza,Room DC2-2290
New York, New York 10017, USA

Tel: (1) 212-963-8762
Fax: (1) 212- 963-4260
Email: lee27@un.org

LIN SEE-YAN
Chariman and CEO, LIN Associates
Suite 10.02-10.04 Wisma Inal (10th Floor)
241 Jalan Tun Razak
50400 Kuala Lumpur, Malaysia

Tel: (60) 3-987-5862
Fax: (60) 3-987-6935
Email: drlin@pd.jaring.my

NGUYURU LIPUMBA
Chairman, Civic United Front
c/o Georgina V. Mtenga, UNICEF
P.O. Box 4076
Dar es Salaam, Tanzania

Tel: (255) 51-151-603 (255) 51-150-140
Fax: (255) 51-151-603
Email: cuf@twiga.com, gmtenga@unicef.org

ANIL MARKANDYA
Professor, School of Social Science
University of Bath
Claverton Down
Bath BA2 7AY, UK

Tel: (44) 1225-826-954
Fax: (44) 1225-323-423
Email: a.markandya@compuserve.com, hssam@bath.ac.uk

SARAH METCALF
United Nations and Commonwealth Department
Department for International Development
94 Victoria Street
London SW1E SJL, UK

Tel: (44) (0)171-917-6147
Fax: (44) (0)171-917-0194
Email: s_metcalf@dfid.gov.uk

JOHN MUGABE
Executive Director
ICRAF Complex
UN Avenue, Gigiri
PO Box 45917, Nairobi, Kenya

Tel: (254) 2-524-715
Fax: (254) 2-521-001
Email: j.mugabe@cgiar.org

GEOFFREY N. MWAU
Regional Advisor on Economic Policy Analysis
United Nations Economic Commission for Africa
PO Box 3001, Addis Ababa, Ethiopia

Tel: (251) 1-517-200
Fax: (251) 1-514-416
Email: mwau.uneca@un.org

YEVGEN V. MYLOVANOV
General Manager
Main Department for Foreign Credits and Investment
Ukragrofin, 7/9 Kreshchatik Str.
Kiev, Ukraine, 01001

Tel: (380) 44-462-03-64
Fax: (380) 44-462-0363

BARRACK NDEGWA
Ministry of Finance and Planning
P.O. Box 30007, Nairobi, Kenya

Tel: (254) 2-221-749

PACOME NGUINDZA-OKOUYI
Economist, Direction des Institutions Financières
Direction Generales de l'Economie
Libreville, Gabon

Fax: (241) 76-5599
Email: okouyi@internetgabon.com

TON BOON VON OCHSSÉE
Institutional Specialist
Global Environment Facility
1818 H Street N.W. , Washington D.C. USA

Tel: (1) 202-458-8235
Fax: (1) 202-522-3245
Email: tboonvonochssee@worldbank.org

CHARLES C. OKEAHALAM
Donald Gordon Professor of Banking and Finance
Graduate School of Business Administration
University of the Witwatersrand, Johannesburg
PO Box 98, Wits, 2050 South Africa

Tel: (27) 11-082-5017636
Fax: (27) 11-643-2336
Email: okeahalc@zeus.mgmt.wits.ac.za

R. OMOTAYO OLANIYAN
Research Professor in International Economic Relations
Organisation for African Unity
346 E 50th Street, New York, New York, USA,

Tel: (1) 212-319-1835
Fax: (1) 212-319-7135
Email: olaniyan@un.int

ERIC OLSON
Economic Affairs Officer
Finance, Industry and Trade Unit
DSD/DESA, United Nations
Two United Nations Plaza, Room DC2-2286
New York, New York 10017, USA

Tel: (1) 212-963-0013
Fax: (1) 212- 963-4260
Email: olsone@un.org

T.A. OYEJIDE
Professor
Department of Economics
University of Ibadan
Ibadan, Nigeria

Tel: (234) 2-810-1701
Fax: (234) 2-241-2327/810-2535
Email: dpc@ibadan.skannet.com

THEODORE PANAYOTOU
Institute Fellow and Director
Harvard Institute for International Development
One Eliot Street
Cambridge, MA 02138, USA

Tel: (1) 617-495-9173
Fax: (1) 617-496-8040
Email: tpanayot@hiid.harvard.edu

GRZEGORZ PESZKO
Environment Directorate/NMCB
Organisation of Economic Co-operation for Development
2 rue Andre-Pascal
75775 Paris Cedex 16, France

Tel: (33) 1-45-24-19-47
Fax: (33) 1-45-24-96-71
Email: Grzegorz.Peszko@oecd.org

ALIX PETERSON
Assistant
Center for International Development
Harvard University
79 JFK Street, Cambridge, MA 02138, USA

Tel: (1) 617-495-7914
Fax: (1) 617-496-8040
Email: apeterso@ksg.harvard.edu

SUPHAVIT PIAMPHONGSANT
Inspector General
Ministry of Science, Technology, and Environment
RAMA VI Road
Bangkok, 10400, Thailand

Tel: (66) 2-247-9696
Fax: (66) 2-246-8106
Email: supavit@moste.go.th

SURINDER PUNJ
Administrative Assistant
Finance, Industry and Trade Unit
DSD/DESA, United Nations
Two United Nations Plaza, Room DC2-2201,
New York, NY 10017, USA

Tel: (1) 212-963-4704
Fax: (1) 212-963-4260
Email: punj@un.org

JOANA SARANGA
General Manager
International Relations and External Debt
Bank of Mozambique
Maputo, Mozambique

Tel: (258) 1-428150/9
Fax: (258) 1-422575
Email: jds@bancomoc.uem.mz

KAI SCHLEGELMILCH
Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
Abteilung/Division Z II 6
Alexanderplatz 6,
D-10178, Berlin, Germany

Tel: (49) 30-28550-2452
Fax: (49) 30-28550-2349
Email: schlegelmilch.Kai@bmu.de

KAZUO TAKAHASHI
Director
International Development Research Institute
1-6-17 Kudon-Minami, Chiyada-ku,
Tokyo 102-0074, Japan

Tel: (81) 3-5226-0305
Fax: (81) 3-5226-0023
Email: yoshida@fasid.or.jp, takahashi@fasid.or.jp

NORBERT WOHLGEMUTH
Senior Researcher
UNEP Collaborating Centre on Energy and Environment
PO Box 49
4000 Roskilde, Denmark

Tel: (45) 4677-5133/45 4632 2288
Fax: (45) 4632-1999
Email: norbert.wohlgemuth@risoe.dk

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