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Report of the Secretary-General

Addendum

Changing consumption patterns*

(Chapter 4 of Agenda 21)

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INTRODUCTION

1. This report reviews progress made in the implementation of the objectives set out in chapter 4 of Agenda 21 (Changing consumption and production patterns),¹ taking into account the decisions taken by the Commission on Sustainable Development on this subject at its second, third and fourth sessions. The issue of consumption and production patterns in the context of sustainable development first received full recognition at the United Nations Conference on Environment and Development in 1992. Chapter 4 of Agenda 21 addresses many issues at the heart of environment and development policy-making. They include product policy, new concepts of economic growth and prosperity, efficient use of natural resources, reducing emissions and waste, environmentally sound pricing, and technology.

Box 1. Changing consumption and production patterns, since the United Nations Conference on Environment and Development, as seen at other United Nations conferences

Population and Development (Cairo, 1994). Development strategies must realistically reflect the short-, medium-, and long-term implications of, and consequences for, population dynamics and patterns of production and consumption. To achieve sustainable development and a higher quality of life for all people, Governments should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies.

Fourth World Conference on Women (Beijing, 1995). Poverty and environmental degradation are closely related. While poverty results in certain kinds of environmental stress, the major cause of the continued deterioration in the global environment is unsustainable patterns of consumption and production, particularly in industrialized countries.

Habitat II (Istanbul, June 1996). Consumption patterns in human settlements should be adjusted to the needs of resource protection, with more attention given to strategies for a life-cycle economy. The internal structures of cities should be corrected. Industrialized countries have to recognize that their urban lifestyles, patterns of production and consumption are a major part of the global environmental problem.

World Food Summit (Rome, 1996). Individuals and households have a key role in decisions and actions affecting their food security. They must be enabled and encouraged to participate actively, both individually and collectively, through producers, consumers, and other organizations of civil society.

I. KEY OBJECTIVES

2. Of the five objectives identified in chapter 4, two are directed towards the international community and three are directed towards the development of national policies and strategies to encourage changes in consumption and production patterns.

3. Objectives directed towards the international community are:

(a) To promote patterns of consumption and production that reduce environmental stress and will meet the basic needs of humanity;

(b) To develop a better understanding of the role of consumption and how to bring about more sustainable consumption patterns.

Objectives directed more towards the national level are:

(a) To promote efficiency in production processes and reduce wasteful consumption in the process of economic growth, taking into account the development needs of developing countries;

(b) To develop a domestic policy framework that will encourage a shift to more sustainable patterns of production and consumption;

(c) To reinforce both values that encourage sustainable consumption and production patterns and policies that encourage the transfer of environmentally sound technologies to developing countries.

Box 2. The unsustainable pattern of consumption and production, particularly in industrialized countries: some trends

Over the past 45 years the global economy has nearly quintupled. Consumption of grain, beef and water has tripled, while paper use has risen six times. The use of fossil fuels has grown fourfold, as have CO₂ emissions.

Since 1950, and reflecting differences in per capita incomes, the richest fifth has doubled its per capita consumption of energy, meat, timber, steel and copper, and quadrupled its car ownership. The per capita consumption of the poorest fifth has hardly increased.

The OECD countries account for 44.7 per cent of global total CO₂ emissions. The emissions continue to increase and reflect the growth in industrialized societies. Increasing numbers of people in developing countries, in particular in several major developing economies, are beginning to approximate consumption patterns similar to the middle-income classes in developed countries. Those consumers roughly total 750 million, almost as many as the 850 million consumers in the industrialized countries.

Sources: Brown, L. R. and others (1996). State of the World 1996 (New York: Norton); Durning, A. T. (1996). This Place on Earth: Home and the Practice of Permaculture (Seattle: Sasquatch Books); Myers, N. (1997). Consumption in relation to population, environment and development. The Environmentalist (In press); United Nations (1996). The World Population Prospects: the 1996 Revision. Annex I: Demographic indicators (to be issued); World Resources Institute, World Resources 1996-97 (New York: Oxford University Press).

II. PROGRESS ACHIEVED

A. International efforts to promote patterns of consumption and production that reduce environmental stress and will meet the basic needs of humanity

4. Several international agreements which have been reached or in the context of which further progress has been made since the Conference and which entail changing consumption and production patterns now cover such issues as phasing out ozone-depleting substances, stabilizing and eventually reducing greenhouse-gas emissions, prohibiting the exportation of hazardous waste, reducing emissions of land-based sources of marine pollution, phasing out lead in

gasoline, and managing international fisheries. Progress has also been made in advancing discussions on sustainable forest management. Each of these areas is extensively discussed in reports on other chapters of Agenda 21.

Box 3. The international work programme on changing
production and consumption patterns

At its session in 1995, the Commission on Sustainable Development agreed on an international work programme on the issue of changing production and consumption patterns. The work programme builds on the elements of the Action Programme adopted at the Oslo Ministerial Roundtable Conference on Sustainable Production and Consumption (6-10 February, Oslo). It has five main elements and is in its first year of implementation. The elements are:

(a) Identifying the policy implications of projected trends in consumption and production patterns;

(b) Assessing the impact on developing countries, especially the least developed countries and small island developing States, of changes in consumption and production in developed countries;

(c) Evaluating the effectiveness of policy measures intended to change consumption and production patterns, such as command-and-control, economic and social instruments, governmental procurement policies and guidelines;

(d) Eliciting time-bound voluntary commitments from countries to make measurable progress on those sustainable development goals that have an especially high priority at the national level;

(e) Revising the guidelines for consumer protection.

B. Developing a better understanding of the role of consumption
and how to bring about more sustainable consumption patterns

5. The issue of changing consumption and production patterns has figured prominently on the international policy-making agenda. Some countries, such as Australia, Brazil, the Netherlands, Norway and the Republic of Korea have fulfilled a leadership role in facilitating and developing the international debate on the issue. International organizations (e.g., the Organisation for Economic Cooperation and Development (OECD), the United Nations Environment Programme (UNEP)), business and industry groups (e.g., World Business Council for Sustainable Development (WBCSD)), the academic community and many non-governmental organizations have been active in taking up specific tasks and responsibilities and have been instrumental for the progress achieved.

6. Several United Nations agencies and other international organizations, Governments, non-governmental organizations and academics have initiated activities on the identification of indicators for sustainability, the "greening" of current gross domestic product (GDP) as a measure of progress, genuine savings indicators, measures of environmental debt, and the further operationalization of concepts such as eco-space, ecological footprints, and ecological rucksacks. Many of these approaches and tools have contributed to policy-making over the past five years, in particular with regard to the integration of environment and development in socio-economic policy (chapter 8 of Agenda 21) and as improved information in decision-making processes (chapter 40 of Agenda 21). The work on changing consumption and production

patterns over the past five years has resulted in a consensus that the most promising and cost-effective policy strategies are those that aim at cost internalization and improved efficiency in resource and energy use.

7. Significant progress has also been achieved in increasing an understanding of the nature of environmental problems and the interlinkages between economic and environmental policy-making, at the sectoral level, *inter alia*. Good examples are the studies on the transport and energy sectors, in the context of the Framework Convention on Climate Change, by OECD and the International Atomic Energy Agency (IAEA), the recent study on the sustainable paper cycle,² the first comprehensive life-cycle analysis of a large industrial sector, by the International Institute for Environment and Development (IIED), and the report on comprehensive assessment of freshwater resources,³ prepared for the Commission at its fifth session.

8. A focus on changing consumption and production patterns is especially useful for integrating environmental and economic factors, for focusing on the demand side as well as the supply side of the economy, and for highlighting the need for policy measures that affect the behaviour of a large number of producers and consumers. It is recognized that measures which internalize environmental costs are important for changing behaviour. But those measures need to be accompanied by others that facilitate or magnify the responses. Thus, a list of policy options would include regulatory instruments, economic incentives and disincentives, social incentives and disincentives, facilities and infrastructure, information and education, and technology development and diffusion.

Box 4. Cost internalization in the production of
Malaysian palm oil

Organic wastes from the mills of the crude palm oil industry used to be the worst source of water pollution in Malaysia. Since 1977 effluent control in the industry has been carried out through a licensing system stipulating effluent discharge standards for each licence holder. Standards have been made stricter over time. Licence fees for high-effluent discharge plants, emitting above standard, were more costly than the flat-rate fees for plants emitting below standard - e.g., for biochemical oxygen demand (bod) loads. Both the Government and industry developed pollution-abatement technologies and stimulated their dissemination. The Palm Oil Research Institute of Malaysia was established. This mix of regulatory, economic and social instruments resulted in a decrease in pollution of 99 per cent (bod loads) over a period of seven years.

Source: Khalid, A. R. (1995). "Internalisation of environmental externalities: the Malaysian experience", paper presented at the UNCTAD Expert Group Meeting on Internalization of Environmental Externalities, Geneva, 13-14 February 1995.

9. Methods to achieve greater resource and energy efficiency in production processes have been further developed by business and industry. Eco-efficiency and the related concept of industrial ecology, which aims to close the production cycle for polluting substances by using them as inputs in other industries, have become common in discussions on sound environmental management. Research by the academic community and non-governmental organizations has demonstrated that increases in efficiency by a factor of 4 can be achieved with currently available technology and knowledge. Efficiency improvements by a

factor of 10 by the year 2025 might be necessary in order to achieve a minimally satisfactory degree of environmental sustainability.

10. It has also been recognized and emphasized over the years that cost internalization and eco-efficiency approaches are most effectively and efficiently implemented in combination with specific time-bound targets and objectives.

Box 5. Practising eco-efficiency

Xerox has adopted a new system of product stewardship. Copy cartridges that were disposable when first introduced are now being replaced by cartridges that are taken apart and have their components recycled. This form of product stewardship introduces "life cycle" concepts and makes manufacturers, along with suppliers and consumers, responsible participants in the cradle-to-grave cycle of products.

In 1995 Sony introduced "Green TVs" which contain recyclable materials, disassembly characteristics, plastics that are reduced in both type and variety, and halogen-free flame retardant materials. As a result the weight and cost of the television sets have been significantly reduced, while use of hazardous substances during production has been eliminated.

Dow Chemicals implemented energy savings and waste-reduction measures which yielded a rate of return, on a relatively small investment, averaging over 200 per cent per year.

Sources: Fussler, C. (1996). Driving Eco-Innovation: A Breakthrough Discipline for Innovation and Sustainability (London, Pitman); Lovins, A. B. (1996). Megawatts: twelve transitions, eight improvements and one distraction. Energy Policy, vol. 24, No. 4.

11. It is now also recognized that differences in levels of per capita resource use among and within countries primarily reflect disparities in per capita incomes and are thus linked to national policies and international cooperation intended to accelerate economic growth and combat poverty, especially in developing countries, underlining the importance of developed countries fulfilling their commitments to official development assistance (ODA). To the extent that such policies succeed in causing per capita incomes gradually to converge over time, per capita resource use would tend to increase at both the country and world levels and associated environmental problems, to worsen. Achieving or maintaining environmental sustainability will thus require all countries in line with their own national priorities progressively to adopt more sustainable consumption and production patterns.

12. A reorientation of governmental policy-making and the fact that environment and development policy-making on changing consumption patterns is gradually shifting to implementation and a more action-oriented approach have directly resulted in the recognition of the need for a stronger role for actors such as business and industry, trade unions, international organizations and non-governmental organizations. Increasingly, responsibilities have been defined for the major actors, such as local authorities, business, trade unions and national Governments.

C. Promoting efficiency in production processes and reducing wasteful consumption in the process of economic growth, taking into account the development needs of developing countries

13. The combination of consumer and technology-driven changes in economic structures, the effects of national environmental policies, and the spreading of environmental awareness have resulted in measurable - although inadequate - progress in the achievement of this objective. In most developed countries and for this grouping as a whole, material and energy intensity of production and the carbon intensity of energy have continued to decline. As a result, the rate of growth of emissions of CO₂ has slowed, although absolute amounts continue to increase. Emissions of ozone-depleting substances, and releases of lead are falling; emissions of SO₂ and the release of hazardous wastes to environmental media and of pollutants to freshwater are also falling, although they are still considered far too high. The volume of municipal wastes discharged to landfills continues to increase, although its rate of growth has been dramatically reduced. The growth rates of certain emissions associated primarily with the transport sector, such as NO_x, and VOC have also slowed greatly, and the absolute volumes appear to have nearly stabilized. They are still, however, far too high compared to their environmental and health costs. An increasing number of developing countries and economies in transition have made progress in respect of this objective. Indeed, in some of them, because of technological leap-frogging, annual pollution levels and resource intensity in some sectors are lower than they were in industrial countries at a similar level of development. (More extensive appraisals on all of these issues are to be found in concise reports on other chapters of Agenda 21).

14. Increased efficiency in production has been achieved through various policy tools and measures. Much policy-making has focused on products. There have been two important aspects in product policy: first, the further shift towards demand management strategies by Governments, accompanied by the enhanced power of the consumer to support or avoid products on environmental grounds, taking into account their production and process methods; and secondly, the growth in interest for new and innovative instruments related to producer responsibility. Among other things, these approaches require producers to supply adequate information in response to consumer demands and to make provision for the maintenance and/or final disposal of the product. In this regard the ISO 14000 series and the Eco-management and Audit System (EMAS) certification processes for environmental management systems are stimulating more sustainable production processes.

15. Policy development is increasingly benefiting from life-cycle analysis. The integrated life-cycle analysis approach emphasizes that resource production and consumption is a multistage process, with each stage associated with certain types of environmental degradation. Each stage should be regarded as an integral part of a whole interrelated process, with changes at one stage yielding effects at other stages. For instance, establishing manufacturers' responsibility for some aspects of disposal at the end of product life-cycles may influence design of the product and packaging material, thus integrating waste avoidance into the production process. Examples of such policies in European countries include the packaging legislation pioneered in Germany, take-back requirements, and deposit/refund schemes, such as the deposit to be paid when buying a new car (implemented in the Netherlands) and refunded once the car is at the end of its life-span.

D. Developing a domestic policy framework that will encourage a shift to more sustainable patterns

of production and consumption

16. Since the Conference, the policy framework has been further developed both in terms of content and process. Studies and workshops have been undertaken by several countries interested in defining and scoping the debate on consumption and production patterns. Among the most instrumental in making progress with regard to the development of a policy framework were the two Oslo Ministerial Roundtables on sustainable production and consumption. In addition, OECD, for example, initiated a discussion on the available and most relevant concepts and strategies for policy development.

17. Also since the Conference, most countries have set up national commissions on sustainable development or national round tables to discuss national policies intended to achieve more sustainable development. These commissions often function as a platform, involving major stakeholders in society, providing input in national decision-making processes on environment and development policy-making. The commissions often report on progress to their Governments, the Commission or the Earth Council.⁴

E. Reinforcing both values that encourage sustainable consumption and production patterns and policies that encourage the transfer of environmentally sound technologies to developing countries

18. Shifts in the values on which consumers and producers base decisions can be widely observed. The continuing rise in the application of eco-labels illustrates a growing demand for products that are environmentally sound and safe for human health and safety. Consumers, especially in the developed countries, are demanding more environmentally friendly and "fairly" produced products from developing countries.

19. Initiatives from many environmental non-governmental organizations are targeted at influencing the behaviour of consumers in their daily lives. The Sustainable Europe campaign, through a continuing process of preparing reports on sustainability for the European countries, is informing consumers and producers about the impacts of their lifestyles and about the changes that are needed in order to make consumption patterns more sustainable.

20. Citizen participation programmes such as the eco-team programme of the non-governmental organization Global Action Plan (GAP) are increasingly being adopted at the community level and have a significant impact on changing individuals' lifestyles towards more sustainable patterns.

21. The Commission on Sustainable Development recognized at its session in 1996 that the role of the media and advertising may have a significant impact on the values of citizens. Additional work needs to be done, however, on how the media and advertising industry can help support changes in current patterns of consumption and make them more sustainable.

22. The Brazil/Norway Workshop on Consumption and Production Patterns (Brasilia, November 1996) concluded, among other things, that the role of advertising and the media is critical; that the international community should apply the resources of the media to induce behavioural changes to avoid waste, inefficient resource use and conspicuous consumption; and that positive messages of how individuals can live in a sustainable manner were required, instead of encouraging ever-rising material consumption or exaggerating the likelihood of environmental disaster.

23. Issues related to the transfer of environmentally sound technologies are discussed in the concise report on chapter 34 of Agenda 21 (E/CN.17/1997/2/Add.24).

III. PROMISING CHANGES

24. The most promising changes and developments can be observed in the increased participation of non-governmental organizations, business, trade unions, local authorities and the academic community in the implementation of Agenda 21 - in particular, the ongoing efforts of the non-governmental organization and academic communities to promote sustainable lifestyles, the business initiatives furthering the development and implementation of eco-efficiency, the pro-active role that local authorities and trade unions play in mobilizing public and stakeholder participation, and the responsibilities taken up by international organizations to facilitate North/South, East/West cooperation and further to promote cleaner production and sustainable consumption patterns.

Box 6. Eco-taxes in Europe

According to a recent report of the European Environment Agency, the continuing use of environmental taxes over the past decade, has accelerated in the past 5-6 years. The report finds that the taxes have been environmentally effective, and seem to have achieved their environmental objectives at reasonable cost. Examples of successful taxes are tax differentials on leaded fuel (e.g., Sweden), taxes on toxic waste (e.g., Germany), and water pollution charges (e.g., Netherlands).

Source: European Environment Agency (1996). Environmental Taxes: Implementation and Environmental Effectiveness. Environmental Issues Series No. 1. Copenhagen.

25. Participants in the GAP eco-team programme, for example, have reduced usage of water, on average, by 25 per cent, fuel use for transport by 16 per cent (with related reductions in CO₂ emissions), and produced 42 per cent less household waste.

26. Governments are increasingly adding demand-side management to policy-making in order to influence actors on the supply side, the producers. In addition, there is an increasing use of mixes of regulatory, economic and social instruments to achieve certain policy objectives.

27. One of the most promising approaches is the use of emission-trading schemes in several countries. Active consideration is now being given to how an international scheme for emission-trading for CO₂ and SO₂ might be implemented.

28. Some key transnational corporations and WBCSD, among others, have made considerable progress in making eco-efficiency operational, reducing the material and energy intensity per unit produced and improving profitability. UNEP, in cooperation with Governments and the business community, has played an important role in exploring viable business strategies for cleaner production and eco-efficiency in developed and developing countries.

29. In the area of enhancing the environmental performance of Governments, international organizations and certain countries have undertaken promising

initiatives over the past several years, e.g., the OECD Council recommendation on improving the environmental performance of government. In many countries, greater priority is being given to governmental purchasing as a component of environmental policy-making.

30. Promising changes can be observed in the environmental programmes developed and implemented by local authorities. Innovative ideas about public participation, community development and making operational local Agenda 21s are being piloted and demonstrated. The International Council for Local Environmental Initiatives (ICLEI) has played a significant role in facilitating these activities at the local level.⁵

31. Product-oriented policies have matured over the past five years, and promising results include consumer information (including eco-labels) on environmentally preferable and "fair trade" products, extended producer responsibility, take-back requirements, the involvement of the retail sector, and continued efforts in the areas of life-cycle management, eco-design, materials substitutions, and enhanced durability. For example, Swedish consumers buy up half of the European Union's imported pesticide-free bananas; Germany's baby food products will soon have entirely organic sources; some 4,000 Mexican farmers are producing organically grown coffee; and some major companies, such as Patagonia, are turning towards organically grown cotton and recycled materials in the production of their clothing. Electric cars (EV1 Saturn (United States) and Tulip-project Citroen (France)) are on the market, waste-streams are being turned into input resources, life-cycle studies are being conducted for specific industries (paper, IIED/WBCSD), and business is increasingly becoming aware of the fact that an environmentally sound image is an essential aspect of solid company practice and a quality check for the products produced.

Box 7. Eco-labelling

At the United Nations Conference on Environment and Development, eco-labelling was considered primarily in the context of changing consumption patterns. In the period since the Conference, eco-labelling criteria have been of particular interest because of their trade implications. Although eco-labels can improve the quality and transparency of environmental information about some products, they may also serve as disguised protectionist behaviour. The work under way in the International Organisation for Standardization and the World Trade Organization (WTO) may help to minimize such concerns.

Eco-labels are increasingly being used on national and regional levels. The Nordic countries, for example, have had an eco-label, the "Nordic Swan", since 1989. The vast majority of the labels are in different categories of paper products, sometimes enjoying market shares of up to 30 per cent. It was found that over a five-year period of implementation, the labels significantly influenced consumers' purchasing patterns and the production methods of producers participating in the scheme.

Source: Nordic Council of Ministers (1996). The Use of Economic Instruments in Nordic Environmental Policy (Copenhagen: Nordic Publishing House).

32. More attention is being given to environmental considerations in the design of a wide variety of goods, services and infrastructure. Increasingly designers incorporate aspects such as future disposal and recycling into the design of products. Physical planners and architects have shown great innovation in the design of cities, infrastructure, buildings and houses, taking into consideration elements such as quality of life, resource efficiency, accessibility, durability and living environment.

33. Another promising change is the increasing role of the service industry in general. In industrialized countries there is a trend emerging in the substitution of goods for services that are more environmentally friendly. Business and industry are increasingly stressing the service offered with the purchase of a product (see also box 5). The ongoing developments in the area of telecommunications can play an important role in intensifying this trend.

IV. UNFULFILLED EXPECTATIONS

34. The positive developments mentioned in sections II and III have been largely offset by larger volumes of production. Consequently, many natural resource and pollution problems persist or continue to worsen. The car industry has, for example, produced cleaner and more efficient cars; however, the growth in the number of vehicles has offset the positive environmental effects of that development. Similarly, significant results have been achieved in waste reduction, through, in particular, waste prevention programmes, but total volumes of waste produced have been growing in many countries of OECD.

35. A cause for grave concern is rising CO₂ emissions. Governments in industrialized countries have not been able to achieve previous commitments and identified targets. Further, changing relevant consumption and production patterns will need additional efforts and activities in policy-making.

36. In spite of the fact that important results have been achieved in the area of policy integration, many governmental policies in sectors such as

agriculture, economics, finance, trade, communications, tourism, energy and transport do not adequately reflect an appreciation of how they shape consumption and production patterns. Evaluation of policies in terms of effectiveness, efficiency, and equity in these sectors in respect of the objective of sustainable development needs to be strengthened.

37. The call for environmentally sound pricing - efficient cost internalization - was renewed at the Conference, but little progress has been made. Governments shy away from additional eco-taxes and environmental regulations that intend to incorporate the cost of environmental protection into products and services offered in the marketplace. Examples of such policies include carbon taxes, environmental tax reform and subsidy removal, international eco-labelling schemes, standards for products, management, and performance (e.g., ISO, EMAS), and extended producer responsibility and packaging requirements.

38. Developed countries have also failed to provide sufficient finance and technological and other forms of support to enable developing countries to accelerate their own transition towards more sustainable consumption and production patterns.⁶

V. EMERGING PRIORITIES

39. An ongoing priority is the further implementation of the Commission's international work programme on changing consumption and production patterns. The work programme, agreed by the Commission at its third session, is in its first year of implementation. Some of the activities initiated include the identification of a "core-set" of indicators to measure changes in consumption and production patterns, a case study on trade opportunities for developing countries due to changes in consumption and production patterns in industrialized countries, and the development of a database on new and innovative instruments intended to make consumption patterns more sustainable. In addition, the revision of the guidelines for consumer protection is under way, and the Department for Policy Coordination and Sustainable Development of the United Nations Secretariat, in close cooperation with international organizations, non-governmental organizations (in particular, Consumers International), and other major groups, has embarked on the task of preparing additional draft guidelines addressing sustainable consumption.

40. Changing consumption and production patterns is increasingly recognized in the international policy-making arena as an important issue. Since the Conference, the emphasis of international and national efforts has been on increasing understanding and policy development. An emerging priority, also reflected in a Commission decision taken in 1996, is the need for a more action-oriented approach, focused on the implementation of policies. This implies a continued and strengthened cooperation between actors, in developed and developing countries, in particular those with responsibilities for implementation.

41. Some key challenges that can be highlighted for Governments and business and industry are:

(a) To adopt more widely eco-efficiency strategies in developed and developing countries and countries with economies in transition;

(b) To enhance self-regulation, managing the responsibilities and privileges of some of the key actors in the process of sustainability, such as business and industry and regional and local authorities.

42. For Governments, international organizations and non-governmental organizations, it is important:

(a) To assess the most efficient and effective policy instruments and mixes of instruments in order to achieve a higher degree of cost internalization and eco-efficiency;

(b) To increase understanding of the key determining factors in the behaviour of consumers, in particular in the areas of transport and energy;

(c) To further stimulate social and technological innovation;

(d) To pursue the integration of sustainable development in the heart of governmental decision-making;

(e) To assess the scope for environmental tax reform and subsidy removal, in order to remove distorted prices, stimulate development, encourage employment and reduce pollution and resource use;

(f) As consumers themselves, to help shape markets through better understanding of their use of goods and services and incorporating environmental criteria into procurement policies.

43. For business, in cooperation with Governments and non-governmental organizations, it is important:

(a) To find new ways of satisfying consumer requirements at the lowest environmental cost, in particular the further substitution of goods for services;

(b) To put cleaner production and eco-efficiency into operation. Where possible, these strategies should be applied in combination with time-bound targets and objectives.

44. For non-governmental organizations, in cooperation with Governments and business, the goal should be:

(a) To foster North/South and East/West dialogue and international networks on changing consumption and production patterns;

(b) To develop and propose concrete action at all levels of policy-making;

(c) To continue to strengthen education and training on sustainable "consumption values" and lifestyles;

(d) To educate and assist citizens to participate in decision-making on policies intended to change consumption and production patterns.

45. The upcoming period will provide important lessons learned from the implementation of policies. The exchange of examples of best practice should provide a further stimulus for governmental action.

46. The deep-seated nature of many of the issues requires new forms of international cooperation between and among Governments, international organizations and actors in civil society on questions such as resource-pricing, technology, trade, environmental regulation and management systems. The results of the recent bilateral initiative of Norway and Brazil illustrate that there is a commonality of interests between developed and developing countries on many issues related to changing consumption and production patterns.

47. Future discussions in the Commission may be most fruitful in a framework in which approaches to changing policy on consumption and production patterns can be explored within such major economic sectors as energy, transport, forestry, tourism, and agriculture. Such a framework would facilitate the increasing focus on implementation and the need for a more action-oriented approach.

48. Changing consumption and production patterns does not imply a decline in living standards or quality of life. It calls for a reorientation - not merely consuming less, but consuming differently. Following the industrial revolution and the telecommunications revolutions, the third wave of progress in world society will be marked by sustainable consumption patterns that ensure prosperity, improve the quality of life, and provide equitable access to education, health and safety, and a high-quality environment.

Notes

¹ Report of the United Nations Conference on Environment and Development, vol. I, Resolutions Adopted by the Conference (United Nations publication, Sales No. E.93.I.8 and corrigendum), resolution 1, annex II.

² Towards a Sustainable Paper Cycle (London: International Institute for Environment and Development, 1996).

³ E/CN.17/1997/2/Add.17.

⁴ See also E/CN.17/1997/2/Add.7.

⁵ See also E/CN.17/1997/2/Add.22 and 26.

⁶ See E/CN.17/1997/2/Add.1, 23 and 24.
