Planning sustainable land management: finding a balance between user needs and possibilities

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ABSTRACT

Land use planning aims at improved sustainable use and management of resources. This would imply that those who use and manage the resources are the key players in the planning process. Thus planning for sustainable land management can only be relevant and successful when all stakeholders are involved—hence the development and/or use of more participatory approaches to land use planning. The cross-fertilization between participatory methodologies, which have been developed rapidly since the 1980s, and more technical natural resource surveys is starting to form a basis for participatory land use planning. Improved use and management of resources implies identifying land use problems, conflicts over use, exploitation and underutilization. Better management through solving conflicts and reaching agreements between different user groups is one possible solution to resource use problems. This paper draws on experiences gained in Kenya in land use planning in arid and semi-arid Lands (ASAL), where different approaches to resource use planning are used at district level and local level. In these areas, one crucial issue remains the balance between internal knowledge and decision making and external information and motivating changes through policies, programmes, subsidies, etc. In other words: where do top-down and bottom-up meet—if they meet at all? Many recent changes in resource use in these areas are much faster than the internal system of change can cope with. Many external factors, such as changing land policies (from communal to individual ownership), in-migration from more densely populated areas, the establishment of national parks, etc, have also contributed to these changes. Increasing population, the individualization of land and the sale of land also contribute tremendously to the existing resource use problems. New directions for resource use need to be developed in close consultation with resource users, but these require external expertise at times. However, the two crucial concerns are: How can a planning process be developed in which resource users play a key role? and how can new strategies for sustainable resource use be developed and promoted?

Most developing countries in sub-Saharan Africa are faced with a dilemma of limited essential physical resources, such as land, water, nutrients and energy, and the lack of appropriate technologies necessary for increasing food production. This situation is exacerbated by high population growth rates, poverty and land degradation. Agriculture is the mainstay of the economy of these countries and only sustainable agriculture is likely to provide the long-term benefits required to achieve development and poverty alleviation. Proper planning and management of the available resources is necessary to ensure maintenance of their production potential, quality and diversity.

Land use planning aims at improved sustainable use and management of resources. This would imply that those who use and manage the resources are the key players in the planning process. Thus planning for sustainable land management can only be relevant and successful if all stakeholders are involved—hence the development and/or use of more participatory approaches to land use planning.

Sustainability of land management has to be seen in the context of what is socially, culturally, economically and politically acceptable, and ecologically viable. While considering user needs for planning sustainable land management, it is important to bear in mind that land users have varied and personal reasons for choosing a particular land use. The land management and technology levels also vary widely among land users, depending on their perceptions of what is profitable and most suitable for them.

Different planning methods for sustainable land use have been applied, but methodologies are still in the process of development. This paper draws on experiences gained in Kenya in land use planning in the arid and semi-arid land (ASAL) areas, where different approaches to resource use planning are used at district and local levels. It focuses on the need to find a balance between individual user needs and those of the community, taking into consideration the prevailing biophysical, socio-economic and socio-cultural conditions of the areas concerned.

WHAT DO WE UNDERSTAND BY SUSTAINABLE LAND MANAGEMENT?

Smyth and Dumanski [13] defined sustainable land management as follows:

"Sustainable land management combines technologies, policies and activities aimed at integrating socioeconomic principles with environmental concerns so as to simultaneously:

- maintain or enhance production/services
- reduce the level of production risk
- protect the potential of natural resources and prevent degradation of soil and water quality
- be economically viable
- be socially acceptable."

We would, however, like to add the following:

- it may not always be possible to maintain or enhance production; in some cases there may be a need to choose options that have a lower productivity
- degradation of vegetation resources and biodiversity in flora and fauna should also be prevented.

Sustainable land management, improved technologies and improved economic performance are central to achieving the goals of sustainable agriculture. The objective of sustainable land management is to harmonize the complementary goals of providing environmental, economic and social opportunities for the benefit of present and future generations, while maintaining and

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enhancing the quality of the land resources [2, 13]. There is need to combine gains in productivity with stability over time. However, productivity and stability are often seen as irreconcilable goals, involving a conflict between short- and long-term interests. Sustainable agriculture demands that consideration be given to achieving both goals simultaneously. Hence the need for planning for sustainable land management.

DEVELOPMENT OF PLANNING APPROACHES FOR SUSTAINABLE LAND MANAGEMENT

Planning is considered as an attempt, on the basis of available knowledge and insight, to lead the course of events in some desired direction. In this process, data are systematically collected and analyzed, alternative proposals for action are discussed, and those alternatives most likely to achieve the specified objectives are worked out [12, 5, 9]. Planning is carried out at various levels and has both spatial and time aspects.

Over the past several decades, different approaches have been used in an attempt to tackle the problems of increasing production needs, poverty and environmental degradation in developing countries. In the '60s, a "production-centered" approach was used, where advanced technologies were applied and farmers were used as agents of economic production. This was gradually replaced by the rural development strategies of the '70s, which aimed at meeting the basic needs of the rural population. This approach, however, neglected the institutional dimensions for development, and there was little or no participation by the people. This culminated in unsustainable programmes.

The failures and successes of past development programmes have shown that the participation of beneficiaries in project design, implementation, operation, maintenance and monitoring is essential to reach the target group and respond appropriately to their needs. The split between "planners" and "users" had often led to theoretical planning exercises that bore no relationship to what was actually happening on the ground. As a result, during the '80s "people-centered" approaches to development were created, which called for people's initiatives and was based on the social, physical and economic resources under their control. In the '90s, approaches that create opportunities for the people to decide their own destiny and make their own choices have been, and are still being emphasized.

If we look at the planning of natural resource use in particular, several trends can be identified. From the beginning of this century, natural resource inventories (*eg*, soil surveys, forest inventories, vegetation mapping, wildlife resources, agroclimatic mapping, present land use surveys) have provided the basic information for land use planning,. According to a review of the use of natural resource surveys in developing countries, the information gathered is often not used because:

- it is not understood by "non-technical" staff, or even by local technical staff who are unfamiliar with the classification systems used
- the information is not particularly relevant for local decision makers [1].

In the 1930s, land capability classification was introduced to classify land according to the degree of its limitations for sustained use and the soil conservation measures necessary [11]. In the 1970s, FAO developed land evaluation as a method to evaluate land for a specific land use type (LUT) that was relevant to local conditions in terms of the physical environment and social acceptability [3, 4]. It is, however, important to bear in mind that land users have varied and personal reasons for choosing a particular land use. The land management and technology levels also vary widely among users, depending on their perceptions of what is profitable and most suitable for them. Physical suitability is usually just one of the many aspects taken into account. Another weakness is that land evaluation considers the land as a blank drawing sheet, whereas in almost all cases there is already "present land use".

Land use planning places more emphasis on the process than on the outcome of a blueprint plan. Methodologies of land use planning have not yet been well developed, despite FAO's attempt to issue guidelines for land use planning [6, 7, 8]. It is recognized that land users as well as policy makers need to be sufficiently motivated for change. As a result, the need for a more participatory approach to land use planning, based on the premise that the land users will be the final decision makers and implementers of land use changes, is now generally accepted. The cross-fertilization between participatory methodologies, which have been rapidly developed since the 1980s, and more technical natural resource surveys is starting to form a basis for participatory land use planning. However, experiences with participatory approaches in land use planning and examples of successful land use planning are still very scarce.

KEY ROLE OF RESOURCE USERS

Improved sustainable use and management of resources implies that those who use and manage the resources should take part in the planning process. Thus land use planning can only be relevant and successful when all crucial stakeholders are involved. This requires a thorough understanding of the land/resource users (stakeholders) and an understanding of the decision-making processes in resource use. This focus on users implies that user needs, user priorities, their constraints and possibilities need to be considered in planning.

It is often possible to identify two distinctly different groups of stakeholders: insiders (the resource users) and outsiders (*eg*, governmental and non-governmental organizations and the private sector). Resource users can include agriculturists, settlers, pastoralists, mixed farmers, pastoralists coming from elsewhere to graze their livestock, etc. These two groups have different roles, mandates and resources. In short, the resource users of the area plan for, manage and use the natural resources in the area. They are the main decision makers. The outside agencies advise, facilitate and assist the resource users, ideally resulting in improved use and management. It will also be their task to safeguard the needs of the wider community and future generations.

Communication and negotiation between inside and outside stakeholders often takes place through representatives of resource users and other stakeholders. In identifying suitable discussion/negotiation partners, it will be important to consider the following:

- which institution is most likely to be able to represent the resource users, and does this institution represent all users or are certain groups excluded
- what kind of forum will be most suitable for decision making in this particular area, and what are the local decision-making, control and management processes in respect to natural resources
- whether the same institution will be involved in planning, implementing and monitoring land use improvements
- what is the present situation with regard to control over and access to the different natural resources
- what are the present strengths and roles of traditional institutions.

In summary, suitable discussion/negotiation partners (local institutions) should preferably have an adequate level of authority, and need to represent and ensure commitment from different groups of resource users.

CONSIDERING SUSTAINABILITY: TAKING INTO ACCOUNT FUTURE GENERATIONS AND THE WIDER COMMUNITY

The generally accepted definition of sustainability was given by the Bruntland Commission [15]: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their needs."

Sustainable agriculture is defined as the "successful management of resources for agriculture to satisfy changing human needs while managing or enhancing the quality of the environment and conserving natural resources" [14].

Sustainability implies that the longer-term and wider-reaching impact of activities is taken into account. Thus sustainable land management needs to deal with this. This implies that the needs of particular users cannot always be the sole basis for deciding on appropriate solutions; future generations and society in general need to be considered as well.

Sustainability can be achieved through:

- the collective efforts of those immediately responsible for managing resources. This requires a policy environment where local decision makers, including farmers, reap the benefits of good land use decisions but are held responsible for inappropriate land uses.
- good land management in balance with accepted ecologic and economic principles which ensure that agriculture is part of the environmental solution.
- integrating environmental and economic interests.
- agricultural intensification, *ie*, the use of new technologies such as improved high-yielding crop varieties.
- creating opportunities for off-farm income to supplement cash flow on the farm and generate an investment environment for improved land development.

FINDING A BALANCE BETWEEN "INDIVIDUAL USER" AND "WIDER COMMUNITY" NEEDS AND POSSIBILITIES

The focus on participatory methodologies harbours the risk that solutions to resource use problems are sought only from within, through looking at indigenous knowledge and internal management systems. This raises the question: Is external intervention really necessary? Yes, many recent changes in resource use have occurred much faster than the internal system of change and adaptation can cope with. Also the number of external influences has increased and an increasing number of stakeholders are using particular resources (complicating the management of common resources).

For example, many external factors have contributed to the changes in the ASAL areas of Kenya, *eg*, changing land policies (from communal to individual land ownership), the sale of land, increasing population (particularly through in-migration from more densely populated areas), the establishment of national parks, etc.

Improved use and management of resources involves identifying land/resource use issues; conflicts over use, exploitation and underutilization; and finding appropriate "solutions". Possible solutions include:

- better management through solving conflicts and reaching agreement with different user groups
- introducing new technologies to achieve the required change.

Where there is a strong focus on internal knowledge, solutions to resource use problems are often determined by what people know or have heard of. One of the tasks of external agencies is to provide new information/solutions and insight into the long-term consequences of resource use changes. Resource users should also be made aware of the consequences of the proposed solutions, and preferably be given a choice of options.

While planning for sustainable land management, it is important to find a balance between internal knowledge and decision making and external information and motivating changes through policies, programmes, subsidies, etc. Where do top-down and bottom-up meet—if they meet at all? From past experiences, it is clear that new directions for resource use need to be developed in close consultation with resource users, but this also requires external expertise at times. The two crucial concerns that still need to be resolved are: How can a planning process be developed in such a way that resource users play a key role? How can new strategies for sustainable resource use be developed and promoted?

EXAMPLES FROM ASAL AREAS KENYA

RESOURCE USE AS A CENTRAL THEME IN THE ASAL PROGRAMMES

The Netherlands government has been financing several rural development programmes in the arid and semi-arid land (ASAL) areas in Kenya. During an evaluation of these programmes in 1993, it was concluded that land use planning—or rather resource management—should receive greater priority in these areas and that the programmes should start actively developing methods for resource use planning. As a result, several approaches to resource use planning have been developed, with different entry points. Resource use is considered the main source of income for the majority of the inhabitants in these areas, while resource degradation is considered the major threat, with often irreversible consequences for these fragile areas.

SPECIFIC RESOURCES AND RESOURCE USES

In the ASAL areas, the resource uses are quite different from what most planning methodologies have focused on until now, *ie*, sustainable agricultural pro-

duction. In these areas, (semi-)nomadic pastoralism and wildlife conservation are the main resource uses.

In the semi-humid areas that border the actual ASAL areas, mixed agriculture and livestock farming are prominent. Crop production—especially the production of maize, beans and more recently horticultural crops—is the major income-earner. Sedentary livestock production is also increasing, with zero grazing becoming common. Traditionally, most of these areas, being intricately linked with the ASAL areas, were dry-season grazing areas for nomadic pastoralists. Population growth in these areas is high because of in-migration from the bordering "high potential areas". The general picture is that the cultivated area has expanded and the total livestock population has decreased.

In the semi-arid areas, livestock enterprise development is relatively more important than in the semi-humid areas, but crop production has still increased considerably. Maize is the dominant crop with high crop failure rates. Although drought-escaping crops such as sorghum and millet are more suitable for these areas, these crops are hardly grown—a consequence of market forces and food preferences.

The bulk of the area, with the lowest population densities, consist of the actual arid areas. Semi-nomadic livestock keeping is the main enterprise here. Wildlife is important in these areas, with such associated resource uses as parks, tourism and some forms of wildlife utilization. The latter is a relatively new form of resource use and there is scope for expansion. Small-scale agricultural production takes place in pockets of high-potential areas (*eg*, along rivers (irrigation) and around water pans (bucket irrigation)). This is an important source of income in some areas.

MAIN RESOURCE USE ISSUES/TRENDS AND CHANGES

In the semi-humid and semi-arid areas, shortage of land is the major issue threatening both crop production and livestock production. The result is a reduced cultivation cycle and a reduction in communal grazing areas.

With the loss of pasture lands to agriculture, settlement and wildlife reserves, livestock production is declining in the arid areas. A particularly important bottleneck is the loss of key production areas that serve as dry-season grazing areas. As a result, pastoralists are increasingly dependent on sources outside the livestock sector and sedentarization of pastoralists is on the increase. Degradation of vegetation is particularly serious in the dry-season grazing areas around settlements and water points.

Nomadic pastoralism—with the characteristic mobility for optimal use of water and pasture resources—is recognized as an efficient use of resources in arid areas. New opportunities such as wildlife utilization and tourism are emerging but it is not yet clear if these will provide sufficient sustainable alternatives. Game ranches and ostrich farms are found in some areas, and national parks provide some income through revenue sharing and some employment.

Land degradation is serious in some areas. Degradation of vegetation can be noticed in terms of decreased biodiversity, decreased woody biomass, loss of useful (grazing) species and increased presence of (unpalatable) invader species. The main reasons for degradation are overgrazing and increased population, leading to increased use of woody biomass for cooking, fencing, building materials, etc. Water resources are limited in these areas and the needs/demands are increasing. There is a danger of overutilization and degradation of water resources, in particular through irrigation. Soil degradation is also a serious problem in specific areas.

PLANNING METHODOLOGIES IN DIFFERENT PROGRAMMES

Laikipia

At the start of the district programme in Laikipia, the district was zoned. Specific land use systems of the subdivided ranches in the district were then selected for closer scrutiny. A scenario analysis [10], with predictions for the future, led to strategies for these different land use systems. In general, the programme in Laikipia has focused on a top-down technologic analysis of resource use problems and tries to provide technologic solutions to these problems.

Using on-farm testing, the Applied Research Unit, together with extension staff and land users, develops technologic innovations. Some attention is paid to local institutions, *eg*, through working with women's groups. The programme also links up with higher-level institutions (district and national levels) to bring to the fore major land use issues in the district. Methodology development in land use planning, particularly at local level, is very limited.

Keiyo-Marakwet

In Keiyo-Marakwet, much attention has been paid to methodology development, particularly at local level. This has now, after several years of intensive guidance, resulted in a sound methodology (the transect area approach), an institutional framework at local level (transect area committees) and capacity building at that level. The system at local level is operational. The emphasis on technologic solutions, especially new external options, has been limited until now.

The transect area approach (TAA) addresses interrelated land use issues of the highlands, the escarpment and the valley in a physical and organizational framework of a transect. The planning steps are:

- setting up a basic organization to identify partners
- elaborating the TAA concept
- selecting a transect area
- training divisional staff, local leaders and committees
- collecting data through participatory rural appraisals (PRAs)
- establishing the organizational framework within the TAs
- planning and design (area plans);
- endorsement of workplans
- implementation
- monitoring and evaluation.

The output of the planning process is transect area action plans. These are implemented through the transect area committees.

Kajiado

Land use planning has been introduced at two levels, district and local, each with distinctive goals and activities:

- district level planning: synthesizing information and policies, and prioritizing areas and activities on the basis of this information.

- pilot areas (selected for local level land use planning): participatory planning of land use improvements and enhancing planning capacities of the actual land users.

Initially, much emphasis was placed on getting the participatory land use planning started. Participatory planning processes were developed in three selected pilot areas to achieve the following:

- a better understanding of the needs of the local population, and the potentials and constraints of the area they live in. This information should be fed into the district-level database and can then be extrapolated to similar areas.
- the establishment of an institution (committee or informal group) at the local level, which can respond to the challenges of a changing resource base
- the development of activities leading to improved sustainable land use
- management agreements, whenever required, between competing resource users.

A district-level planning framework is being developed by dividing the district into resource management areas. These are relatively homogeneous areas from a natural resource management perspective, and are described in terms of natural resources and their use, and constraints, opportunities and main strategies. This should provide the external planning framework, considering broader and long-term issues and impacts over a larger area for the wider community.

The two levels (district and local) of planning should complement each other in analysis and action. Through the local-level planning process, user needs are signalled and solutions are sought at that level; an understanding of the resource management areas (district level) leads to a broader understanding of the issues and of the impact on the wider community in the longer term. Local-level planning has focused much on methodology development and capacity building. New technologic options were supposed to be introduced, but as yet this has not happened to any great extent. To date, local-level planning has been too focused on user needs.

CONCLUSIONS

GAP BETWEEN METHODOLOGIES

New options for resource use are required. Not all solutions can be found from within, and circumstances are rapidly changing. But how will appropriate solutions be developed? There is still a gap between external/research-oriented methodologies and internal/-participatory planning methodologies. Researchers need to take a more user-focused analysis into account. Local adaptation of solutions will always be required, given that users have such varied needs and possibilities. Site-specific solutions can only be found if development planners, researchers and extension workers strive to collaborate with resource users and assist them in their efforts to develop the most appropriate technologies and practices for their particular conditions, rather than trying to implement preconceived ideas and methods that have been successful in another context but are ill-adapted to local circumstances.

Circumstances are rapidly changing. One-time solutions are often not sufficient. Users need to be able to build up a capacity to analyze new problems and find solutions. This is the role which participatory planning is adopting, by building capacity among users to analyze, evaluate, decide and implement. However, the danger with participatory planning, and especially with relatively quick methodologies such as PRA, has been that only limited space was available for external analysis and new ideas.

BALANCE BETWEEN INDIVIDUAL USER NEEDS AND WIDER COMMUNITY NEEDS

Experience has shown that there is a need to consider different spatial and temporal dimensions, while analyzing resource use issues and searching for solutions. Individual user needs cannot be considered in isolation, especially in more fragile areas or with types of resource uses that have impacts on larger areas. For example, where resource use depends on resources (livestock and wildlife) moving over larger distances, the impact will be felt in a wider area. There will be a need for a higher-level authority (*eg*, district authorities) to develop "ground rules" or a framework focusing on major issues and how these should be dealt with. Local-level experiences need to feed into this framework. Two aspects are important here:

- analysis at different levels (individual user/user group and larger area; *eg*, in Kajiado, group of irrigation farmers = user group and the whole group ranch = larger area) and recommendations derived from this analysis.
- decision making (who makes decisions, and what type of forum is needed for decision making?).

EXPERIENCES IN NON-AGRICULTURAL AREAS

Much methodology development for land management/land use planning has focused on agricultural production. Less static forms of land use, *eg*, pastoralism and wildlife utilization, which appear to be more suitable for fragile ecosystems such as the ASAL areas in Kenya, require a somewhat different approach. For example, more attention needs to be paid to vegetation resources because differences occur over time-spans longer than seasons.

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RESUME

La planification d'utilisation des terres a pour but l'amélioration de l'utilisation durable et de la gestion des ressources, ce qui supposerait que ceux qui utilisent et gèrent les ressources sont les acteurs principaux dans le procédé de planification. La planification pour une gestion durable des terres ne peut donc être utile et réussie que si les intéressés sont impliqués—de là le développement et/ou l'utilisation d'approches participatives à la planification d'utilisation des terres. La combinaison entre des méthodologies de participation, qui ont été développées rapidement depuis les années 1980, et des études plus techniques de ressources naturelles est en train de former une base pour une planification de participation d'utilisation des terres. Une utilisation améliorée et une gestion de ressources impliquent l'identification des problèmes d'utilisation des terres, des conflits sur cette utilisation, l'exploitation et la sous utilisation. Une meilleure gestion par la résolution des conflits et la conclusion d'accords entre les différents groupes d'utilisateurs est une solution possible aux problèmes d'utilisation de ressources. Cet article relate des expériences de planification d'utilisation des terres faites au Kenya, dans des terres arides et semi arides (ASAL), où différentes approches de planification d'utilisation de ressources sont utilisées au niveau régional et local. Dans ces régions, la question cruciale demeure l'équilibre entre la connaissance interne et la prise de décision et l'information externe et les changements de motivation à travers des politiques, des programmes, des subventions, etc. En d'autres mots: à quel niveau les approches du sommet vers la base et de la base vers le sommet se rencontrent-elles, si toutefois elles se rencontrent? Dans ces régions, beaucoup de changements dans l'utilisation des ressources sont si rapides que le système interne de changement ne peut y faire face. Beaucoup de facteurs externes, tels que les changements de politiques en matière agraire (de la propriété commune à la propriété individuelle), la migration à partir de zones à population plus dense, l'établissement de parcs nationaux, etc, ont aussi contribué à ces changements. Une population croissante, l'individualisation et la vente de la terre contribuent de façon terrible aux problèmes d'utilisation de ressources existantes. Il faut développer de nouvelles directives pour l'utilisation de ressources en consultation étroite avec les utilisateurs, mais celles-ci exigent parfois une expertise extérieure. Cependant les deux points principaux sont: comment un processus de planification dans lequel l'utilisateur de ressources joue un rôle principal peut-il être developpé? et comment de nouvelles stratégies pour une utilisation durable de ressources peuvent-elles être développées et encouragées?

RESUMEN

El planeamiento del uso de las tierras aspira a mejorar el uso y el manejo sostenible de los recursos. Esto implicaría que aquellos que manejan y usan los recursos sean los actores principales en el proceso de planeamiento. Por lo tanto, el planeamiento para el manejo sostenible de las tierras puede ser relevante y exitoso solamente cuando todos los participantes se encuentran involucrados—de ahí la necesidad de desarrollar y/o usar enfoques más participatorios en el planeamiento del uso de las tierras. La combinación entre las metodologías participatorias, las cuales se desarrollaron rápidamente desde los años 1980, y los levantamientos más técnicos de recursos naturales está empezando a formar una base para el planeamiento participatorio del uso de las tierras. El mejoramiento del uso y manejo de los recursos implica identificar los problemas del uso de las tierras, los conflictos sobre el uso, la sobre-explotación y la sub-utilización de las tierras. Un mejor manejo mediante la resolución de conflictos y el alcance de acuerdos entre diferentes grupos de usuarios es una solución posible a los problemas del uso de los recursos. Este artículo está basado en experiencias obtenidas en Kenia en el planeamiento del uso de las tierras en regiones áridas y semi-áridas, donde se usan diferentes enfoques para el planeamiento del uso de los recursos al nivel local y de distrito. En estas áreas, un problema crucial es alcanzar un equilibrio entre el conocimiento y la toma de decisiones por parte de las comunidades locales, de un lado, y la información externa y la motivación de cambios inducida por políticas, programas, subsidios, etc, de otro lado. En otras palabras: donde se encuentran el planeamiento desde arriba y el planeamiento desde abajo—si es que se encuentran? Muchos cambios recientes en el uso de los recursos en estas áreas son tan rápidos que el sistema de cambio interno no puede asimilarlos. Muchos factores externos, como el cambio en políticas de tierras (de la propiedad comunal a la individual), la inmigración desde áreas más densamente pobladas, el establecimiento de parques nacionales, etc, también han contribuido a estos cambios. El crecimiento de la población, la apropiación individual de las tierras y su venta también contribuyen tremendamente a los problemas existentes en el uso de los recursos. Se necesita desarrollar nuevas direcciones para el uso de los recursos en estrecha consultación con los usuarios de los recursos; estos últimos requieren a veces experticia externa. Sin embargo, los dos asuntos cruciales son: como puede desarrollarse un proceso de planeamiento en el cual los usuarios de los recursos tienen un papel importante? y como se puede desarrollar y promover nuevas estrategias para el uso sostenible de los recursos?