

Land is normally defined as a physical entity in terms of its topography and spatial nature; a broader integrative view also includes natural resources: the soils, minerals, water and biota that the land comprises. These components are organized in ecosystems which provide a variety of services essential to the maintenance of the integrity of life-support systems and the productive capacity of the environment. Land resources are used in ways that take advantage of all these characteristics. Land is a finite resource, while the natural resources it supports can vary over time and according to management conditions and uses. Expanding human requirements and economic activities are placing ever increasing pressures on land resources, creating competition and conflicts and resulting in suboptimal use of both land and land resources. If, in the future, human requirements are to be met in a sustainable manner, it is now essential to resolve these conflicts and move towards more effective and efficient use of land and its natural resources. Integrated physical and land-use planning and management is an eminently practical way to achieve this. By examining all uses of land in an integrated manner, it makes it possible to minimize conflicts, to make the most efficient trade-offs and to link social and economic development with environmental protection and enhancement, thus helping to achieve the objectives of sustainable development. The essence of the integrated approach finds expression in the coordination of the sectoral

planning and management activities concerned with the various aspects of land use and land resources.

The present chapter consists of one programme area, the integrated approach to the planning and management of land resources, which deals with the reorganization and, where necessary, some strengthening of the decision-making structure, including existing policies, planning and management procedures and methods that can assist in putting in place an integrated approach to land resources. It does not deal with the operational aspects of planning and management, which are more appropriately dealt with under the relevant sectoral programmes. Since the programme deals with an important cross-sectoral aspect of decision-making for sustainable development, it is closely related to a number of other programmes that deal with that issue directly.

Integrated approach to the planning and management of land resources

Basis for action Land resources are used for a variety of purposes which interact and may compete with one another; therefore, it is desirable to plan and manage all uses in an integrated manner. Integration should take place at two levels, considering, on the one hand, all environmental, social and economic factors (including, for example, impacts of the various economic and social sectors on the environment and natural resources) and, on the other, all environmental

Harvesting potatoes on recently deforested land in Cameroon. In this hilly territory the topsoil will rapidly be washed away by rain unless soil conservation measures are taken.



Bauxite mines in Western Australia which have been reforested by Alcoa of Australia. The rehabilitation included the construction of waterways to control both the run-off and soil erosion, which might affect the river system.



and resource components together (i.e., air, water, biota, land, geological and natural resources). Integrated consideration facilitates appropriate choices and trade-offs, thus maximizing sustainable productivity and use. Opportunities to allocate land to different uses arise in the course of major settlement or development projects or in a sequential fashion as lands become available on the market. This in turn provides opportunities to support traditional patterns of sustainable land management or to assign protected status for conservation of biological diversity or critical ecological services.

A number of techniques, frameworks and processes can be combined to facilitate an integrated approach. They are the indispensable support for the planning and management process, at the national and local level, ecosystem or area levels and for the development of specific plans of action. Many of its elements are already in place but need to be more widely applied, further developed and strengthened. This programme area is concerned primarily with providing a framework that will coordinate decision-making; the content and operational functions are therefore not included here but are dealt with in the relevant sectoral programmes of Agenda 21.

Objectives The broad objective is to facilitate allocation of land to the uses that provide the greatest sustainable benefits and to promote the transition to a sustainable and integrated management of land resources. In doing so, environmental, social and economic issues should be taken into consideration. Protected areas, private property rights, the rights of indigenous people and their communities and other local communities and the economic role of women in agriculture and rural development, among other issues, should be taken into account. In more specific terms, the objectives are as follows:

- a** To review and develop policies to support the best possible use of land and the sustainable management of land resources, by not later than 1996;
- b** To improve and strengthen planning, management and evaluation systems for land and land resources, by not later than 2000;
- c** To strengthen institutions and coordinating mechanisms for land and land resources, by not later than 1998;
- d** To create mechanisms to facilitate the active involvement and participation of all concerned, particularly communities and people at the local level, in decision-making on land use and management, by not later than 1996.

Management-related activities

A Developing supportive policies and policy instruments

Governments at the appropriate level, with the support of regional and international organizations, should ensure that policies and policy instruments support the best possible land use and sustainable management of land resources. Particular attention should be given to the role of agricultural land. To do this, they should:

- a** Develop integrated goal-setting and policy formulation at the national, regional and local levels that takes into account environmental, social, demographic and economic issues;
- b** Develop policies that encourage sustainable land use and management of land resources and take the land resource base, demographic issues and the interests of the local population into account;
- c** Review the regulatory framework, including laws, regulations and enforcement procedures, in order to identify improvements needed to support sustainable land use and management of land resources and restricts the transfer of productive arable land to other uses;
- d** Apply economic instruments and develop institutional mechanisms and incentives to encourage the best possible land use and sustainable management of land resources;
- e** Encourage the principle of delegating policy-making to the lowest level of public authority consistent with effective action and a locally driven approach.

B Strengthening planning and management systems

Governments at the appropriate level, with the support of regional and international organizations, should review and, if appropriate, revise planning and management systems to facilitate an integrated approach. To do this, they should:

- a** Adopt planning and management systems that facilitate the integration of environmental components such as air, water, land and other natural resources, using landscape ecological planning (LANDEP) or other approaches that focus on, for example, an ecosystem or a watershed;
- b** Adopt strategic frameworks that allow the integration of both developmental and environmental goals; examples of these frameworks include sustainable livelihood systems, rural development, the World Conservation Strategy/Caring for the Earth, primary environmental care (PEC) and others;
- c** Establish a general framework for land-use and physical planning within which specialized and more detailed sectoral plans (e.g., for protected areas, agriculture, forests, human settlements, rural development) can be developed; establish intersectoral consultative bodies to streamline project planning and implementation;
- d** Strengthen management systems for land and natural resources by including appropriate traditional and indigenous methods; examples of these practices include pastoralism, Hema reserves (traditional Islamic land reserves) and terraced agriculture;
- e** Examine and, if necessary, establish innovative and flexible approaches to programme funding;
- f** Compile detailed land capability inventories to guide sustainable land resources allocation, management and use at the national and local levels.

C Promoting application of appropriate tools for planning and management

Governments at the appropriate level, with the support of national and international organizations, should promote the improvement, further development and widespread application of planning and management tools that facilitate an integrated and sustainable approach to land and resources. To do this, they should:

- a** Adopt improved systems for the interpretation and integrated analysis of data on land use and land resources;
- b** Systematically apply techniques and procedures for assessing the environmental, social and economic

impacts, risks, costs and benefits of specific actions;

C Analyse and test methods to include land and ecosystem functions and land resources values in national accounts.

D *Raising awareness*

Governments at the appropriate level, in collaboration with national institutions and interest groups and with the support of regional and international organizations, should launch awareness-raising campaigns to alert and educate people on the importance of integrated land and land resources management and the role that individuals and social groups can play in it.

This should be accompanied by provision of the means to adopt improved practices for land use and sustainable management.

E *Promoting public participation*

Governments at the appropriate level, in collaboration with national organizations and with the support of regional and international organizations, should establish innovative procedures, programmes, projects and services that facilitate and encourage the active participation of those affected in the decision-making and implementation process, especially of groups that have, hitherto, often been excluded, such as women, youth, indigenous people and their communities and other local communities.

Financing and cost evaluation Sources of funds and concessional financing \$50 million from the international community on grant or concessional terms.