What Do We Understand by Land Use Planning:
A state-of-the-art Report

by Wim Sombroek and Helmut Eger

There is a growing awareness that land use planning should not be a sectoral effort, executed unilaterally by government institutions. Instead, it should develop into an interdisciplinary, holistic approach that gives attention to all functions of the land and that actively involves all stakeholders through a participatory process of negotiation platforms, be it on national, province or village level. This new approach is outlined in Chapter 10 of agenda 21, the programme of action for sustainable development agreed by the Governments during the 1992 World Conference on Environment and Development in Rio de Janeiro.

Land use planning is as old as mankind. Failures at conflict resolution over land utilization and land tenure rights abound in the historical records of every empire or religion, intertribal strike and inner-state wars, and the associated land resource degradation were the result. Successful land use planning, its peaceful execution and increasing well being of the people involved, are remembered much less, though they must have been the basis of the prospering of nations.

Present day sources of conflict include the traditional rights of farm communities versus the need of expanding urban and industrial centres, rights of the land and water users rights in upper parts of river catchments versus the need for freshwater supply in downstream areas (for drinking water supply and sanitation, irrigation, river traffic, electric power generation, industrial development); the plight of environmental migrants versus settled population groups, etc.

The need for expansion or intensification of the agricultural land use versus the biodiversity and value of non polluted "natural" landscapes is another hot item. National land use planning institutions have often become entrenched in competing sectoral views of the value and functions of land, with top-down decisions often resulting in disregard or sabotage at the local level if not downright civil strife. Only in recent years awareness has grown that an inter institutional and inter ministerial integrated approach is necessary. Such an approach gives due attention to all potential functions of the land in a long-term perspective of their sustainability, and takes into account the needs and aspirations of all population groups with a stake in the future of the land - all of this against the backdrop of increasing scarcity of land and its often diminishing quality in relation to strongly increasing population in developing countries, and the growth of cities and industrial complexes everywhere.

This new awareness is al-ready reflected in Agenda '21, the inter-governmentally agreed action programme of the 1992 United Nations Conference on Environment and Sustainable Development in Rio de Janeiro, and the ensuing discussions in the UN Commission for Sustainable Development (CSD) created at Rio to monitor progress on the implementation of Agenda '21 at international, national and local levels. The "Land cluster" of that action programme, chapters 10 to 15 inclusive, are of relevance, with Chapter 10, entitled "Integrated Approach to the Planning and Management of Land Resources", serving as an introductory and over-arching one.

Concepts

The aim of land use planning is to create the preconditions to achieve a sustainable, environmentally sound, socially desirable, and economically appropriate form of land use. Such preconditions are best met by a decentralized approach.

Decentralized planning of land use is considered to be an iterative process, based on dialogue amongst all stakeholders, aiming to reach decisions on a sustainable form of land use in rural areas and also to initiate as well as to accompany the respective implementations. Key principles of decentralised land use planning, or "gestion de terroirs" are the appropriateness to the local context, flexibility, transparency, participatory approach, gender specific perspective and interdisciplinarity in the selection of instruments. Land use planning cannot and should not be an end in itself. Thus land use planning cannot be a project type but a tool to be used in a project (see also Arbeitsgruppe 1995).

Concepts and definitions need to be specified on land, the multiple functions of land, land evaluation, zoning, the stakeholders, and participatory planning and decision making (see also FAO 1995).
Land. Land is a delineable area of the earth's terrestrial surface, encompassing all attributes of the biosphere immediately above or below this surface, including those of the near surface climate, the soil and terrain forms, the surface hydrology (including shallow lakes, rivers, marshes and swamps) the terrain forms, the surface sedimentary layers and associated groundwater reserve, the animal populations, the human settlement pattern and physical results of past and present human activity (terracing, water storage or drainage structures, roads, buildings, etc.)

This definition conforms to land system units, landscape-ecological units, or “unite’s de terroir” as buildings blocks of a catchment area or a phytogeographic unit. They are natural land units, as distinct from administrative units of land (territories). Surface and near-surface freshwater resources, in as far as linked to other characteristics of the land, are included.

Multiple functions of land. Thus defined, land has at least nine functions:

- Land is the basis for many life support systems, through the production of biomass that provides food, fodder, fibre, fuel, timber and other biotic materials for human use, either directly or through animal husbandry including aquaculture and inland and coastal fishers (the production function).

- Land is the basis of terrestrial biodiversity by providing the biological habitats and gene reserves for plants, animals and micro organisms, above and below the ground (the ecological, or biotic environmental function).

- Land and its use are a source and sink of greenhouse gases and form a co-determinant of the global energy balance, reflection, absorption and transformation of radiative energy from the sun and the global hydrological cycle (the climate regulation function).

- Land regulates the storage and flow of surface and groundwater resources, and influences their quality (the hydrological function).

- Land as a storehouse of raw materials and minerals for human use (the storage functions).

- Land has a receptive, filtering, buffering and transforming function of hazardous compounds (the waste and pollution control function).

- Land provides the physical basis for human settlements, industrial plants and social activities such as sports and recreation (the living space and recreation function).

- Land is a medium to store and protect the evidence of the cultural history of mankind, and a source of information on past climatic conditions and past land uses (the archive or heritage function).

- Land provides space for the transport of people, inputs and produce and for the movement of plants and animal between discrete areas of natural ecosystems (the connective space function).

Depending on the socioeconomic conditions of individual countries and provinces one or the other of these functions will have more weight in the land use planning process. In areas with high population densities highly productive land, high costs of farm labour and pollution intensive land use practices, the ecological, pollution control and archival functions on the non-built up land areas will tend to be most important (for the creation of set-aside lands, ecological corridors and peri-urban recreational landscapes in northwestern Europe. In developing countries with a strong increase in rural population, the maintenance and improvement of the biotic production function will usually predominate. In both cases, however, the long-term sustainability and safeguarding of all functions will have to be kept in mind.

Land evaluation. After the identification and delineation of land on the basis of comparable biophysical characteristics into natural land units, land evaluation comprises successively:

- assessment of the inherent land qualities of the identified natural land units, their constraints and opportunities,

- identification and characterization of present forms of land cover and land use

- identification of prospective land utilization types or production systems,
• identification of the biophysical and socioeconomic requirements of the identified land utilization types,

• matching of the inherent land requirements of the utilization types under consideration,

• the formulation of recommended land uses - or non-uses in order of decreasing appropriateness, per land unit.

The last step (formulation of recommended land uses) is often the least neutral because it requires a comparison of economically quantifiable land values such as the agricultural production potential, or the effects of infra-structural improvements, against largely non-tangible or non-quantifiable values such as biodiversity or heritage characteristics of the land.

**Zoning.** The land use planning process also involves a spatial zoning of the resources across the natural land units. The zoning concept is used differently in rural agricultural land use planning as compared to peri-urban planning. In the latter case it is the end-product of the process, in the form of prescriptive use; the agreed and legally enforced allocation of peri-urban land for specific use, such as housing, industry, physical infrastructure, recreation, or supply of horticultural produce, accompanied by legal rules on land markets (prescriptive or allocative zoning). In rural planning with an agricultural production and/or environmental protection focus, zoning normally precedes the actual land use planning process. Such agro-ecological or indicative zoning concerns a subdivision of the rural lands on the basis of the physical and biological characteristics and qualities of the various natural land units (climate, soils, terrain forms, land cover and to a degree its water resources) as well as their prevailing socioeconomic conditions. Together, they form the basis for the delineation of land Resource Management Domains (RMD), i.e. rural areas, where both agro-ecological and socioeconomic conditions are so similar that one can expect that development or conservation oriented "intervention packages" can be successfully transferred from one site to another.

**Stakeholders.** Who are the stakeholders in the land use planning of a particular area? The stakeholders, or interested parties, are individuals, communities, or government entities that have a traditional, current, or future right to co-decide on the use of the land in a planning exercise. They include:

• *Regional intergovernmental cooperation entities,* such as the Amazon Cooperation Treaty system. They are for example intended to ensure a harmonious conservation and development, an international river basin or a phytogeographic region.

• *National or federal governments.* They have strategic interests such as physical security over the land by ensuring natural human occupation of the whole or their sovereign territory, promotion of commodities for export or internal food security, energy development; settlement of excess population from other parts of the country; control of precious mineral extraction, or drug production and trafficking.

• *State or provincial governments,* as well as district or municipal authorities. They have a direct responsibility for the well-being of the human population within their administrative boundaries; they may either want to stimulate or to dissuade human settlements in rural areas (e.g. produce versus ecotourism), but in general will need to raise revenues for part of their administrative functions.

• *Non-governmental organisations (NGOs),* promoting one or more specific goals. They may be public-interest organizations, such as the green movements that care about the maintenance of ecological or historical values; business-interest NGOs, such as associations of mining companies, energy-generation institutions or the fertilizer industry; NGOs of scientific interest that study the long ten- effects of land cover and land-use changes; grass root NGOs that strive for socially-equitable sustainable development of their own local community or environmental conservation areas, and religion-inspired NGOs that are concerned about spiritual and social well-being of rural or peri-urban population groups or the conservation of holy places.

• *Individual title deed or concession holders* of large tracts of the land, using it for productive or conservational purposes, for hunting or plain capital investment.

• *Long-existing rural communities,* with communal or individual ownership of land that is or should be sufficient in size to ensure a basic livelihood for men, women and offspring.

• *Landless people and autonomous groups of migrants* that seek to eke out a living, permanently or temporarily, on yet unoccupied or under-utilized land (mate and female squatters, forest product gatherers, fishery folk, small-scale miners) or who wish to be hired as labourers in rural or peri-urban enterprises.
- **Urban communities in the area**, or tourists, seeking rural recreational facilities.
- **Traditional (i.e. indigenous) inhabitants of the region**, wishing to conserve their traditional ways of living and land-holding rights, and to use their legalized or claimed territorial rights on their own terms.

This listing does not imply an order of importance. It is obvious that at regional and national levels governments will be the key players. At village or district-level planning the existing rural communities and/or original inhabitants should be primarily involved. It is at the latter level too, that equity and security of land tenure, gender issues, the required minimum size of land holding per household, and the intergenerational sustainable use of the local land resources become most salient. Community driven traditional forms of deliberation are then often a sound starting point for solving potential conflicts. At the “meso” level i.e. land use planning for a district/province or (sub) catchment area within a country, the top-down and bottom-up approaches and interests can and should meet on equal terms (Kwakernaak, 1995).

**Participatory planning and negotiated decision making.** This is a process whereby all stakeholders are actively taking part in the land use planning exercise. Participation of all groups concerned does not always imply their physical presence in planning. But it has to be assured that there exists a mechanism which guarantees a certain reliable delegation procedure to be followed. Participation should already start during the evaluation of the land resources for different potential uses, as carried out by specialized government institutions (Brinkman et al 1994). Not only should these institutions cooperate among themselves, but they should also identify the achievable objectives and the prospective land utilization types in consultation with stakeholders. Their data base, evaluations, and recommendations should be accessible to all stakeholders, both in substance and in a form of presentation that can be understood and used by lay-persons. Technical soil and land classification terminology for instance, should be translated into locally known names for different soil and land types: ethno-land classification as a communication means. The institutions' formulation of optional or recommended land uses per natural unit or zone, should serve as a neutral basis for discussions between stakeholders, especially those population groups that will be directly affected. Such discussions require platforms for negotiation and decision making (Roeling, 1994), preferably with an independent chair person as facilitator, that should provide a set of recommended land uses acceptable to all participants. The facilitation should extend to reaching agreement on the type of policies, strategies, legal and financial administrative measures that will be required to assure ground demarcation, inspection and control of adherence to the decisions.

This full-scale participatory approach sounds like a rather utopian theory. Its success in practice depends on the acceptance of an appropriate set of ground rules at the start of the negotiations; a basic willingness of all stakeholders to negotiate and to subordinate narrow private interests, and the skills and patience of the facilitator. It is also a very time-consuming process, with the risk that never, ever, consensus will be reached peacefully and hence no decisions will be taken and successfully executed. It then may require a sudden emergency situation such as the acute hazard or actual occurrence or disastrous flooding of a lower river basin, or a sudden massive influx of people from drought-affected areas or from civil strife elsewhere to push towards a compromise solution. In such cases, governments may even have to forego the whole idea of platforms for negotiation and decision making - taking recourse to over-riding national interests. Full scale democracy and participatory approaches may have to give way in national emergency situations.

Barring this however, governments may wish to develop codes of conduct on natural resources protection and land use planning at various levels, according to the guidelines and suggestions set out in Agenda '21 (see also GACGC, 1995). The elaboration of national codes-of-conduct can benefit from successful experiences at sub-national level on integrated and participatory approaches to land use planning and its implementation.

**General conditions for successful land use planning**

Analysis of case studies yields the following insights:

- Characteristics of successful local and development measures are: simplicity, accessibility to the resource poor majority, low risk and likelihood of rapidly generating significant results. Such successes create an increased demand on land, and this is usually the starting point for land use planning in order to allow for coordinated and concerted action in comparable Resource Management Domains.

- The security of land rights has to be guaranteed. Governments should link the extension of land rights and land use concessions to good land care. Gradual and progressive land reform as part of long term solutions should be reviewed and if necessary initiated.

- Commitment by local politicians, clear identification of issues, an open process and recognition of
mutual dependency are prerequisites for any planning process.

- Implementation is considered as integral part of local land use planning. The paradigm to be followed is: integral planning, sectoral implementation. The implementation of planning requires a sound legislative cadre at national and sub-national levels. Sectoral codes for sustainable land use practices have to be developed as well. Institutional linkages should allow for effective integration of sectoral interests.

- In order to foster the approach of equal rights between woman and men, gender differentiation has to be an integral part of the land use planning methodology, and the active integration of woman in all planning phases should be ensured (see also GTZ 1993).

- The use of traditional know-how about the respective local environmental conditions and its use for land classification purposes increases significantly the acceptance of planning in the rural context. Supporting mechanisms like sharing experiences and networking, and the need to translate science into common sense are increasingly important. Methodologies in this field are being developed especially in the West African Sahelian countries.

- Institutional integration of land use planning is playing an increasingly important role. Conflict management is becoming an essential task of land use planning on any scale. Coordinating mechanisms in planning for rural and urban areas, already introduced in many Latin America countries via the approach of Municipal Planning, need to be further developed (see also Muller, Sanchez, 1995).

- Approaches for scaling up of local land use planning activities are still in an initial, exploratory stage. Delegation of responsibilities and ways of representing all parties concerned on higher levels, as well as specific forms of communication and conflict management need to be developed further, maybe through the formulation of national codes of conduct on land use planning.

**Bibliography**


