

Chapter 1. Concepts and definitions of basic terminologies in land use planning

1.1. Definition of land, land use and land use planning

1.1.1. Land

Land is among the most important assets for people around the world. And it is defined as an ultimate resource, without it life cannot exist and sustain.

Land is an area of the earth's surface, the characteristics of which embrace all reasonably stable, or predictably cyclic, attributes of the biosphere vertically above and below this area, including those of:

- ✓ the atmosphere;
- ✓ the soil;
- ✓ the underlying geology and associated landforms;
- ✓ the hydrology;
- ✓ the plant populations;
- ✓ the animal populations;
- ✓ the microbiological populations; and
- ✓ the results of past and present human activity, ...

E.g. terracing, water storage or drainage structures, roads, buildings, etc

The idea is that land has a *geographic extent* and is described by *all the characteristics that might influence land use*. It is clear from this definition that 'soil' is one part of 'land'. It is also clear that a land map would be more useful than just a soil map.

Land has two unique characteristics that distinguishes it from other types of property;

- ✓ First, land is immovable, so it cannot be physically transferred from one person to another.
- ✓ Second, land is permanent; it cannot be increased, decreased, or destroyed as can all other forms of wealth

Characteristics of land

❖ Land is a free gift of nature:

It is not a 'produced' or man-made agent. It follows, therefore, that we have to accept it as it is. No doubt man tries to improve and modify nature. But he cannot completely master it. A poor soil and a bad climate are great handicaps in the way of industrial and commercial prosperity.

❖ Land is limited in area:

Efforts have been made to reclaim land from the sea, and thus add to the total land surface. Yet these efforts have produced only negligible results as compared with the total area already in existence. Some land in Holland has been reclaimed from the sea, but it is after all a small percentage of the total land surface of the world.

❖ Land is permanent:

It is not easy to destroy it. All other factors are destructible, but land cannot be completely destroyed. Even the havoc wrought by an atom bomb can be cured and natural powers restored after some time.

❖ Land lacks mobility:

Land cannot be moved bodily from one place to another. It lacks geographical mobility. But it can be put to many alternative uses and is thus mobile from a different point of view

1.1.2. Land Use

Land use is the function or functions that humans apply to the land available to them. The study of land use is the study of how the land is managed, including how the natural is adapted to human needs

Land use is the human use of land. Land use involves the management and modification of natural environment or wilderness into built environment such as settlements and semi-natural habitats such as arable fields, pastures, and managed woods. **Land use** is any kind of permanent or cyclic human intervention to satisfy human needs; for a complex of natural and artificial resources which together are called land. Land use is therefore the application of human control of natural ecosystems, in a relatively systematic manner, in order to derive benefit from it. Man as an inherent part of the ecosystem tries to manipulate it.

Types of Land Uses:

- ✓ Recreational,
- ✓ Transport,
- ✓ Agricultural,
- ✓ Residential &
- ✓ Commercial

1.1.3. Land use planning

Planning is the process of allocating resources, including time, capital, and labor.

Land use planning is a decision-making process that “facilitates the allocation of land to uses that provide the greatest sustainable benefits”. Land-use planning is the systematic assessment of land and water potential, alternatives for land use and economic and social conditions in order to select and adopt the best land-use options. Its purpose is to select and put into practice those land uses that will best meet the needs of the people while safeguarding resources for the future.

Generally, land-use planning is defined as follows

- 1) The process of decision making as to how to put a certain type of land resources for a sustainable, acceptable and economic use(s).
- 2) The systematic assessment of land and water potential, alternatives for land use and economic and social conditions in order to select and adopt the best land use option.
- 3) A comprehensive program of activities for sustaining, intensifying and expanding agricultural production, increasing rural and urban incomes and providing improved agricultural inputs and technology and basic needs.
- 4) **The Land Use Plan** is that component of the Comprehensive Plan that establishes policies on the future use of land.

Pros and Cons of Land-Use Planning

Pros (Advantages)

- resources management (forestry, production systems compatible with resources and agroforestry, pasture management, nature protection and erosion control)
- rural regional development
- community support and village development

- Good land use planning positively impacts the development of urban and rural economy.
- Promote mechanisms to prevent the settlement of populations and the development of socio-economic activities.
- Guides the actions of regional and local governments for the efficient fulfillment of their functions in this area of land use planning.

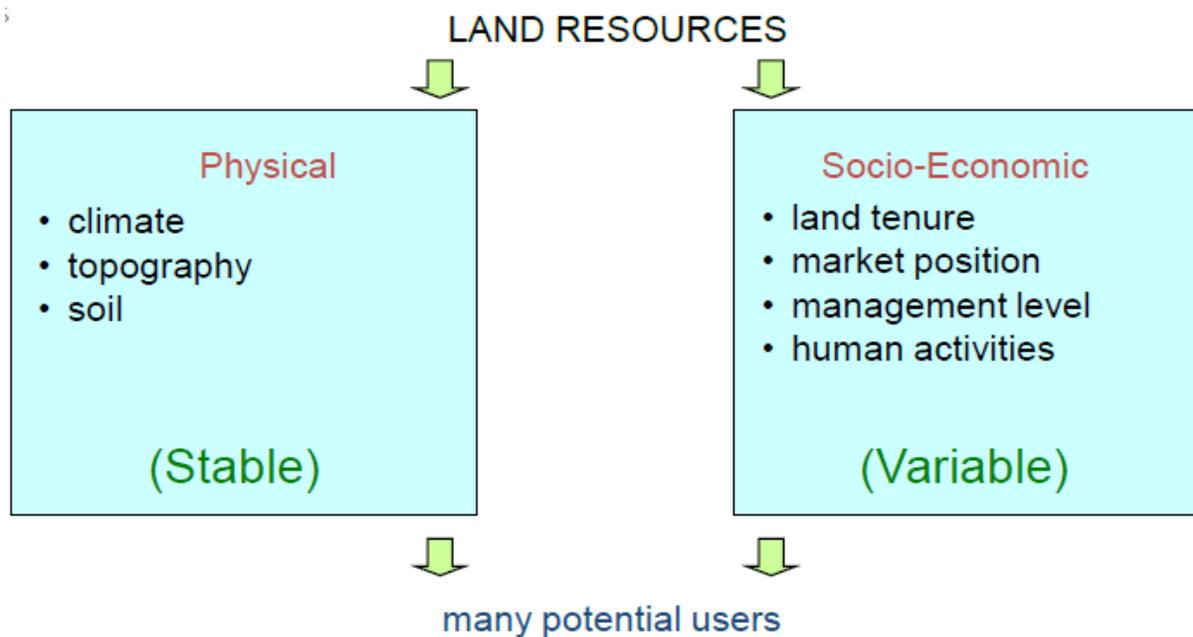
Cons (Disadvantages)

- ❖ The cost of land use planning is usually high.
- ❖ Land use planning is often plagued by bureaucracy and administrative bottlenecks.
- ❖ Land use planning takes a lot of time

1.2. Land resource and people

Land resources consist of two main categories:

1. **Natural land resources** without any effort made through human activities
2. Land resources created including the **product of human activities**



Land is an essential natural resource, both for the survival and prosperity of humanity, and for the maintenance of all terrestrial ecosystems. Over millennia, people have become progressively more aggressive in exploiting land resources for their own ends. The limits on these resources are finite while human demands on them are not. Increased demand and pressure on land

resources enhance the declining crop production, increasing land degradation and competition for land. So, the land utilization for various purposes plays a significant role in controlling the existing economic as well as agro-environmental system.

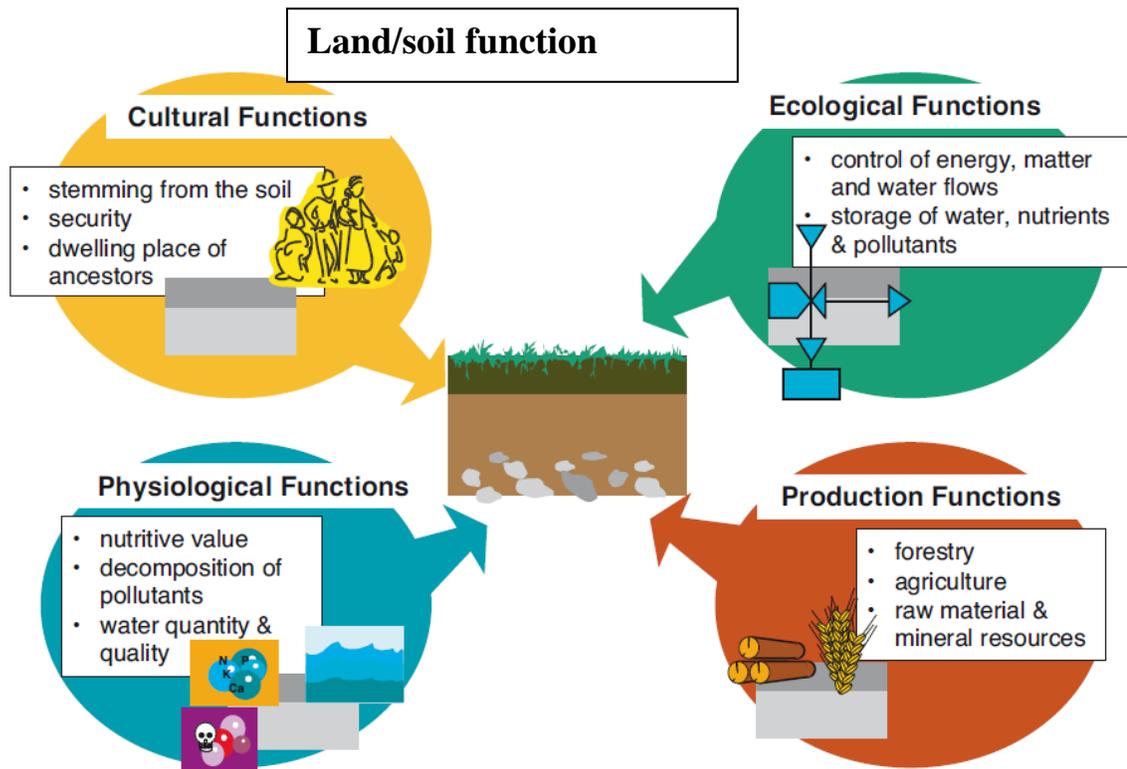
1.3. Function of land and land ownership (the basic relationship)

Land has different **functions** that can change over time. Different people may prefer different functions and consider the role of land differently.

The various *functions* of land are:

- Land is the basis for many life support systems, through **production of biomass** that provides food, fodder, fiber, fuel, timber and other biotic materials for human use, either directly or through animal husbandry including aquaculture and inland and coastal fishery (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 ground (the *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 of the sun, and of the global hydrological cycle (the *climate regulative* function);
- Land **regulates the storage and flow of surface and groundwater** resources, and influences their quality (the *hydrologic* function);
- Land is a **storehouse of raw materials and minerals** for human use (the *storage* function);
- 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* function);
- Land is a medium to **store and protect the evidence of the cultural history of humankind, and 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 animals** between discrete areas of natural ecosystems (*connective space* function) etc.



Land use goes hand in hand with **land ownership**. Different functions and uses of land can imply different owners and/or users. A change in land use can, therefore, result in the displacement of current users. This is the case when a huge area is zoned as commercial farm land. Previously used and often owned by the local population, the land is now leased to strangers (national or foreign investors).

The collection of different land tenure systems is another reason why land use and land ownership are closely linked. Due to legal pluralism and the poor recognition of local land rights, different individuals or groups can claim ownership or use rights over the same piece of land. Accordingly, investigation of property needs to be a central part of situation analysis, discussion and decision-making of future uses.

- ❑ **Ownership** means the right to enjoy the use of something, the ability to dispose it and to benefit from the rights associated with it

Existing forms of ownership (property regimes):

- **State property:** The property rights are held by some authority in the public sector but can partly be transferred to individuals (e.g. by leaseholds or concessions);
- **Private property:** The property rights are held by an individual or legal body but can partly be restricted by the state;
- **Communal property:** The property rights are held by the community. Members can use the commons independently based on strict rules and procedures. Non-members are excluded;
- **Open Access:** Property rights are not assigned. Access is unregulated. Today, open access does not exist anymore. But there is a lot of state land that is treated as open access due to the absence of rules or their lacking application.

1.4. Central idea of integrated participatory land use planning

- Integrated participatory land use planning generally aims to introduce or improve a complete spatial planning approach at local level. In cooperation with existing institutions the whole approach from preparation to evaluation is designed, tested, institutionalized and exercised in a number of pilot villages. Land use does not consider production only, but also land functions such as protected areas, land recreation, road-building, waste disposal sites. Land use planning (LUP) is not only practiced when national authorities intervene or as a result of development co-operation projects.

Land use planning is understood as an instrument of the technical co-operation used in the following types of projects:

- resources management (forestry, production systems compatible with resources and agroforestry, pasture management, nature protection and erosion control)
- rural regional development

- community support and village development

1.5. When is land use planning useful?

Two conditions must be met if planning is to be useful:

- the need for changes in land use, or action to prevent some unwanted change, must be accepted by the people involved;
- there must be the political will and ability to put the plan into effect

Where these conditions are not met, and yet problems are pressing, it may be appropriate to mount an awareness campaign or set up demonstration areas with the aim of creating the conditions necessary for effective planning.

1.6. Planning at different levels

Land-use planning can be applied at three broad levels: national, district and local. These are not necessarily sequential but correspond to the levels of government at which decisions about land use are taken. Different kinds of decision are taken at each level, where the methods of planning and kinds of plan also differ. However, at each level there is need for a land-use strategy, policies that indicate planning priorities, projects that tackle these priorities and operational planning to get the work done.

The greater the interaction between the three levels of planning, the better the result of the land use plan. The flow of information should be in both directions. At each successive level of planning, the degree of detail needed increases, and so too should the direct participation of the local people.

1. National level

At the national level, planning is concerned with national goals and the allocation of resources. In many cases, national land-use planning does not involve the actual allocation of land for different uses, but the establishment of priorities for district-level projects.

A national land-use plan may cover:

- **Land-use policy:** balancing the competing demands for land among different sectors of the economy food production, export crops, tourism, wildlife conservation, housing and public amenities, roads, industry;
- **National development plans and budget:** project identification and the allocation of resources for development;
- **Coordination** of sectoral agencies involved in land use; and
- **Legislation** on such subjects as land tenure, forest clearance and water rights.

National goals are complex while policy decisions, legislation and fiscal measures affect many people and wide areas. It is clear that decision-makers cannot possibly be specialists in all facets of land use, so the planners' responsibility is to present the relevant information in terms that the decision-makers can both comprehend and act on.

2. District level

District level refers not necessarily to administrative districts but also to land areas that fall between national and local levels. Development projects are often at this level, where planning first comes to grips with the diversity of the land and its suitability to meet project goals. When planning is initiated nationally, national priorities have to be translated into local plans. Conflicts between national and local interests will have to be resolved. The kinds of issues tackled at this stage include:

- The siting of developments such as new settlements, forest plantations and irrigation schemes;
- The need for improved infrastructure such as water supply, roads and marketing facilities; and
- The development of management guidelines for improved kinds of land use on each type of land.

3. Local level

The local planning unit may be the village, a group of villages or a small water catchment. At this level, it is easiest to fit the plan to the people, making use of local people's knowledge and

contributions. Where planning is initiated at the district level, the program of work to implement changes in land use or management has to be carried out locally. Alternatively, this may be the first level of planning, with its priorities drawn up by the local people. Local-level planning is about getting things done on particular areas of land - what shall be done where and when, and who will be responsible.

Examples are:

- the layout of drainage, irrigation and soil conservation works;
- the design of infrastructure - road alignment and the siting of crop marketing, fertilizer distribution, milk collection or veterinary facilities;
- The siting of specific crops on suitable land.

Requests at the local level, e.g. for suitable areas to introduce tobacco or coffee, must be met with firm recommendations. For instance, "this land is suitable, this is not; these management practices are needed; it will cost so much and the expected returns are so much".

Planning at different levels require information in different scales and levels of generalization. Much of this information may be found on maps. The most suitable map scale for **national planning** is one by which the whole country fits on to one map sheet, which may call for a scale from 1:5 million to 1:1million or larger. **District planning** requires details to be mapped at about 1:50,000, although some information may be summarized at smaller scales, down to 1:250,000.

For **local planning**, maps of between 1:20,000 and 1:5000 are best. Reproductions of air photographs can be used as base maps at the local level, since field workers and experience show that local people can recognize where they are on the photos.