



AGRICULTURAL LAND USE PLANNING FOR INTEGRATED FARM PLANNING AND SUSTAINABLE AGRICULTURE: A CONCEPT

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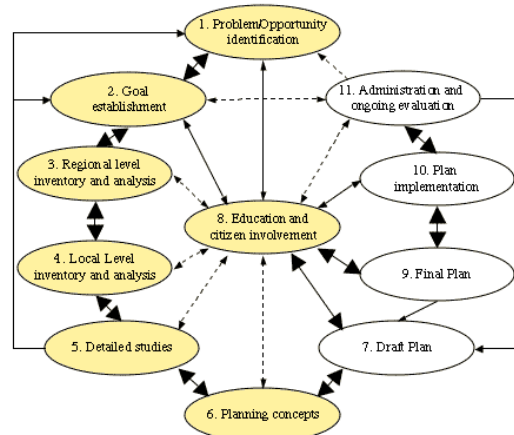
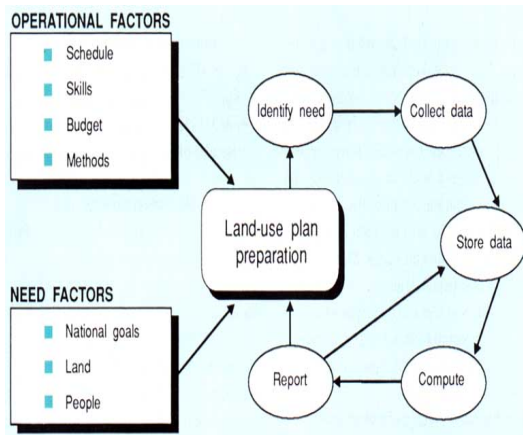
Land use planning consists right input, right amount on right time for better utilization of available resources of the area. Successful land use planning also requires the social health in terms of environmental security. Agricultural farms are suffered with various types of production constraints like soil salinity and sodicity, low fertility, poor soil and water quality, floods, cyclones, heat waves, sea water intrusion and decreasing factor productivity. Land use planning is the reflection of people's priority of spatial requirements and land base production processes, in relation to local Institution, culture and natural adjustments with local specific situation.

Introduction

Agricultural land use planning is the systematic assessment of land and water potential, present and potential land use and social and economic conditions, for the purpose of selecting agricultural land uses which are most beneficial to farmers, without degrading the environment. Agricultural land use planning also considers land uses which are not strictly agricultural, for the purpose of finding alternative to farming in areas with low agricultural potential, to solve or avoid conflicts between agricultural use and non-agricultural use, or to describe or promote multiple use of the land.

For the land use planning, suitability of various forms of land use, both present and potential of farm, should be evaluated. The evaluation will focus on present land use and on possible alternatives. In addition to the physical suitability of the land for certain types of land use, socio-economic factors are also considered. An attempt should make to find the most suitable land use and type of management for various land users and farmer groups with different resources. In the case of ranged crop production and animal production a gross margin analysis should be included for a few production systems. For other major types of land use this is not possible or meaningful, because of highly variable production too many unknown variables (irrigated cropping) or the noncommercial nature of the land use type (wildlife, residential).

Currently, however, land-use is often based on shortsighted and individual goals; policies that may not encourage sustainable use; and expediency rather than research. This module introduces basic concepts and steps of effective, macro-level planning. It emphasizes that land-use planning is a multi-faceted exercise that works best when taking into account: • present trends; • options for possible future scenarios; • needs, interests, and capacities of all



stakeholders; and • meshing local and national interests

Objectives

- The main objectives of the land use plan are the improvement of the standard of living of the rural population of the agricultural district through increased land productivity and the preservation of the natural resource base through appropriate and sustainable land use.

- To provide planners, agricultural extension staff and community leaders with sound recommendations concerning improved and sustainable agricultural production in the area. The recommendations will be specific for the various agro-ecological zones in the area as well as for the various farmer groups with different resources and different priorities.
- Evaluation of soil and site characteristics using survey data for existing and alternative land uses.
- Socio-economic characterization of the land users and land use planning for future

Methodology

Inventory of land resources:

- **Topography, basemap** - A basemap need to produce with information from topographic maps (Dept. of Surveys and Lands, 1973-1990), satellite imagery and fieldwork. The existing topographic maps are mainly based on aerial photography and had to be updated with information from recent satellite imagery and extensive fieldwork.
- **Climate** - Climatic data should be collected from state agriculture office, supplemented with recent data from the Department of Meteorological Services.
- **Soils** - Soil information is mostly based on the soil map of the Soil Survey Section of the Land Utilization Division and the Revised General Soil Legend
- **Present land use** - Information on present land use at reconnaissance level can obtained through field work, interpretation of satellite imagery, interviews with Agricultural Demonstrators and other specialists, and literature.
- **Socio-economic information** - Population data may derive from publications of the Central Statistics Office, population and housing census.

Major outputs

Major outputs of the land use planning exercise will be

- An inventory of land resources (soils, landforms, vegetation, climate and water), including.
- An inventory of present land use, including a map, land suitability evaluation for rainfed cropping, irrigated farming, livestock (grazing), and game ranching.
- An inventory and analysis of population, farming systems and socio-economic conditions
- A summary and analysis of constraints and conflicts related to present land use.
- Possible solutions for existing conflicts and possible measures to combat mis-management of land resources.
- Advice concerning improved farming (crops and livestock), specified for various groups of farmers (farmers with various levels of resources and skills) and various agro ecological zone.
- A map showing recommended land use.

Features

- Discusses the impending impacts of climate change and variability issues that have that direct bearing on agricultural land use and rural development.
- Outlines doable technologies that are land-based activities for effective agro-technology transfer strategies and approaches.
- Considers the huge investments necessary for the effective planning methodologies and approaches.
- Describes how land use planning activities are likely to improve nutrition and food security and enhance the livelihoods of the small and marginal farmers.
- Discusses the use and reliability of information technology tools, legal frameworks, and much more that are needed to adopt appropriate policies.

Summary and conclusions

Land represents an important resource for the economic life of a majority of people in the world. The way people handle and use land resources impacts their social and economic well-being as well as the sustained quality of land resources. Land use planning is also integral to water resources development and management for agriculture, industry, drinking water, and power generation. This valuable work brings to the forefront the state of practice of land use planning in India, highlighting governmental programs and research with wide-ranging chapters on important topics. Covering various agro-ecosystem, including irrigated, rainfed, coastal, semi-arid, arid (dry lands), and hill and mountain (temperate) regions, this volume discusses a variety of issues related to sustainable agriculture and rural development.

References

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