

UNIT-V

Land Capability classification

Land capability is one aspect of land classification. For the determination of land capability, the usefulness of land for agriculture, forest and tourism is assessed solely on the basis of physical environmental factors. In other words, in land capability classification, the texture, structure of soil, aspect of slope, terrain, temperature, rainfall, runoff and water availability are taken into consideration.

The All India Soil and Land Use Survey Organization, in 1970, has identified eight different land use capability classes as given below:

Land Suitable for Cultivation

Class I: Very good cultivable land with no specific difficulty in farming

Class II: Good cultivable land which needs protection from erosion or floods, drainage improvement and conservation of irrigation water.

Class III: Moderately good cultivable land where special attention has to be paid to erosional control, conservation of irrigation water, intensive drainage and protection from floods.

Class IV: Fairly good land suited for occasional or limited cultivation, needs intensive erosional control, intensive drainage and very intensive treatment to overcome soil limitations.

Land not Suitable for Cultivation

Class V: Very well suited for grazing but not for arable farming, needs protection from gullying.

Class VI: Well suited for grazing or forestry but not for arable farming.

Class VII: Fairly well suited for grazing or forestry but not for arable farming.

Class VIII: Suited only for wildlife, recreational facilities and protection of war supplies.

Green Revolution

Green Revolution is a term coined to describe the emergence and diffusion of new seeds (HYV) of cereals. Norman-e-Borlaug is the father of green revolution in the world, while Dr.M.S. Swaminathan is known as the father of green revolution in India.

Salient Features of Green Revolution

(i) High Yielding Varieties seeds promised to produce much greater amounts of grain on a single plant.

(ii) Use of advanced technology, chemical fertilisers, pesticides and well-developed system of irrigation.

- (iii) These steps solved food crisis in India and made India self-sufficient in foodgrains.
- (iv) This led to higher income growth and reduced poverty.
- (v) This led to commercialisation of agriculture. In many areas, Green Revolution is associated with loss of soil fertility due to increased use of chemical fertilisers. Also, continuous use of groundwater for tubewell irrigation has reduced the water level below the ground.

Green Revolution Impacts on Land Use

1. Waterlogging
2. Lowering of water table
3. Decline in soil fertility
4. More incidence of insects-pests and diseases.
5. Environmental pollution
6. Salinity problems
7. Adverse effects on micro-organisms, soil fertility and environment
8. The rice and wheat combination reduced the area under pulses which are leguminous and enriching crops
9. The area under oilseeds and fodder crops also declined.
10. Soil erosion
11. Deforestation etc.

Need for Second Green Revolution

The first green revolution had its own share of prosperity and problems. In the Food Security Atlas by the M.S. Swaminathan Research Foundation, Chennai, it was pointed out in 2004. The Punjab which is India's granary today will become food insecure in 15-20 years from now, if the present unsustainable land and water use practices continue. The International Food Policy Research Institute, Washington, opined, with the rising demand for food in the coming decades, India will depend on the rainfed areas to help increase supply. In fact, the overall production of the cereal and non-cereal crops has reached almost the plateau stage.

The growth rate of agricultural sector is only about two percent. Looking at the growing demand of agricultural produce, there is an urgent need for undertaking agriculture to a higher trajectory of four percent annual growth rate. In order to achieve these objectives, various government have undertaken important steps towards agricultural reforms. These reforms aim at efficient use of resources and conservation of soil, water and ecology on a sustainable basis, and in holistic framework. The main Objectives of the second green revolution are:

- i) To raise agricultural productivity to promote food security
- ii) More emphasis on bio-technology
- iii) To promote sustainable agriculture
- iv) To become self-sufficient in staple food, pulses, oil seeds, and industrial raw material
- v) To increase the per capita income of the farmers and to raise their standard of living.

White Revolution

The programme adopted to increase the production of milk is known as white revolution in India. It occurred in India in 1970, when the National Dairy Development Board (NDDB) was established to organise the dairy development through the co-operative societies. Prof. Varghese Kuerin was the father of white revolution in India. The dairy development programme through co-operative societies was first established in the state of Gujarat. The co-operative societies were most successful in the Anand district of Gujarat. The co-operative societies are owned and managed by the milk producers. These co-operatives apart from financial help, also provide consultancy. The increase in milk production has also been termed as Operation Flood.

Objectives

1. Procurement, transportation, storage of milk at the chilling plants
2. To provide cattle feed
3. The production of wide varieties of milk products and their marketing management
4. Provides superior breeds of cattle, health service, veterinary treatment, and artificial insemination facilities
5. To provide extension service.

Blue Revolution

This is the programme to increase the production of fish and marine products. The blue revolution started in India was in 1970 during the fifth five year plan when the central government sponsored the Fish Farmers Development Agency (FFDA). The blue revolution has brought improvement in aquaculture by adopting new techniques of fish breeding, fish rearing, fish marketing and fish export.

Crop Calendar

The Crop Calendar is a tool that provides timely information about seeds to promote local crop production. It contains information on planting, sowing and harvesting periods of locally adapted crops in specific agro-ecological zones. It also provides information on the sowing rates of seed and planting material and the main agricultural practices.

This tool supports farmers and agriculture extensionists across the world in taking appropriate decisions on crops and their sowing period, respecting the agro-ecological dimension. It also provides a solid base for emergency planning of the rehabilitation of farming systems after disasters.

Agricultural Regions of India

Dr. Randhawa classified the Indian agricultural regions into six zones:

1. The Temperate Himalayan Region
2. Northern Dry (or Wheat) Region
3. Eastern Wet (or Rice) Region
4. Western Wet (or Malabar) Region
5. Southern (or Millet) Region
6. The Coastal Region (or Spices and Plantation Crop Region)

Food Security

Food security is a measure of the availability of food and individuals' ability to access it. Food security, as defined by the United Nations' Committee on World Food Security, means that all people, at all times, have physical, social and economic access to sufficient, safe, and nutritious food that meets their food preferences and dietary needs for an active and healthy life.

Drought and conflict are the main factors that have exacerbated the problem of food production, distribution and access. High rates of population growth and poverty have also played a part, within an already difficult environment of fragile ecosystems. The following are measures to be taken for achieving food security for growing population through higher food production.

- a. Education and literacy
- b. Crop diversification
- c. Tackling climate change
- d. Integrated water management
- e. Integrated nutrient management
- f. Improved varieties
- g. Improved technology adoption
- h. Awareness on population growth

- i. Focus on small farmers
- j. Agricultural research education

Agricultural Policy of India

Agricultural policy of a country is mostly designed by the Government for raising agricultural production and productivity and also for raising the level of income and standard of living of farmers within a definite time frame. This policy is formulated for all round and comprehensive development of the agricultural sector.

In India, the main objectives of agricultural policy are to remove the major problems of agricultural sector related to improper and inefficient uses of natural resources, predominance of low-value agriculture, poor cost-benefit ratio of the sectoral activities and insignificant progress of cooperative farming and other self-help institutions. The following are some of the important objectives of India's agricultural policy:

- (i) Raising the Productivity of Inputs:
- (ii) Raising value added per hectare
- (iii) Protecting the interest of poor farmers
- (iv) Modernizing agricultural sectors
- (v) Checking environmental degradation
- (vi) Removing bureaucratic obstacles
- (vii) Agricultural research and training etc.

Recent Problems in Agriculture in India

Indian agriculture is plagued by several problems; some of them are natural and some others are man-made.

1. Small and fragmented land-holdings
2. Poor quality seeds
3. Application of manures, fertilizers and biocides
4. Irrigation
5. Lack of mechanisation
6. Soil erosion
7. Agricultural marketing
8. Inadequate storage facilities
9. Inadequate transport
10. Scarcity of capital

