

# 3 Chapter



## LAND RESOURCES AND AGRICULTURE

- Land-use records (Reporting area) are maintained by Land Revenue department.
- Land under settlements, roads, canals, industries, shops, etc. is called Land put to **Non-agricultural Uses**.
- Land which is left un-cultivated for one or less than one year is called **Current Fallow**.
- Land which is left uncultivated for more than a year but less than five years is called **Fallow other than Current Fallow**.
- Land which is left un-cultivated for more than five years is called **Culturable Waste-Land**.
- The physical extent of land on which crops are sown and harvested every year is known as net sown area is called **Net Area Sown**.
- The total cultivable land (Net sown area + fallow land + cultivable wasteland) is 58% of reporting area and it has declined in recent years.
- 'aus', 'aman' and 'boro' are the variety of rice seed.
- Arabica, robusta and liberica are the varieties of coffee.
- Jowar is main food crop in semi-arid areas of central and southern India. Leading producer is Maharashtra
- Bajra is a hardy crop sown in hot and dry climatic conditions. Maharashtra, Gujarat.
- Maize is a food as well as fodder crop grown under semi-arid climatic conditions and over inferior soils.
- Pulses are rich sources of proteins. These are legume crops which increase the natural fertility of soils through nitrogen fixation. India is a leading producer of pulses in the world.
- Gujarat, Rajasthan, Tamil Nadu, are the leading producers of groundnut.
- Several oilseeds as rai, sarson, toria and taramira are called rapeseeds.
- The strategy of introduction of high yielding seeds of wheat and rice with irrigation is called **Green Revolution**. Due to it agricultural production increased rapidly in 1960s.
- New high yielding seed varieties of **wheat** came from **Mexico** and **rice** from **Philippines**.
- National Mission for Sustainable Agriculture (NMSA) is to make agriculture more productive, sustainable, remunerative and climate resilient.
- The Government has been promoting organic farming in the country through the scheme such as Paramparagat Krishi Vikas Yojana (PKVY) and Rashtriya Vikas Yojana (RKVY).

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### LAND-USE CHANGES IN INDIA

Q.1 Explain three factors which influence the land use changes in a region.  
Explain three types of changes in an economy which affect land use.

Ans. Three types of changes in an economy which affect land use are:

- a) **The size of the economy:** With increase in the population, GDP, levels of income and available technology the pressure on land increases and marginal lands are brought under use.
- b) **Change in the composition of the economy** With growth in secondary and tertiary sector land use changes from agricultural uses to non-agricultural uses. **For e.g.** In Delhi city the agricultural land is being used for building purposes.

- c) **Decline in agricultural sector:** The pressure on land for agricultural activities continues to be high because large number of people depends on agriculture and it feeds the large population.

Q.2 Name the four land use categories that have registered an increase in their reporting area since 1960-61. Also give one reasons for their increase.

Ans. Three land uses categories have registered an increase. They are -

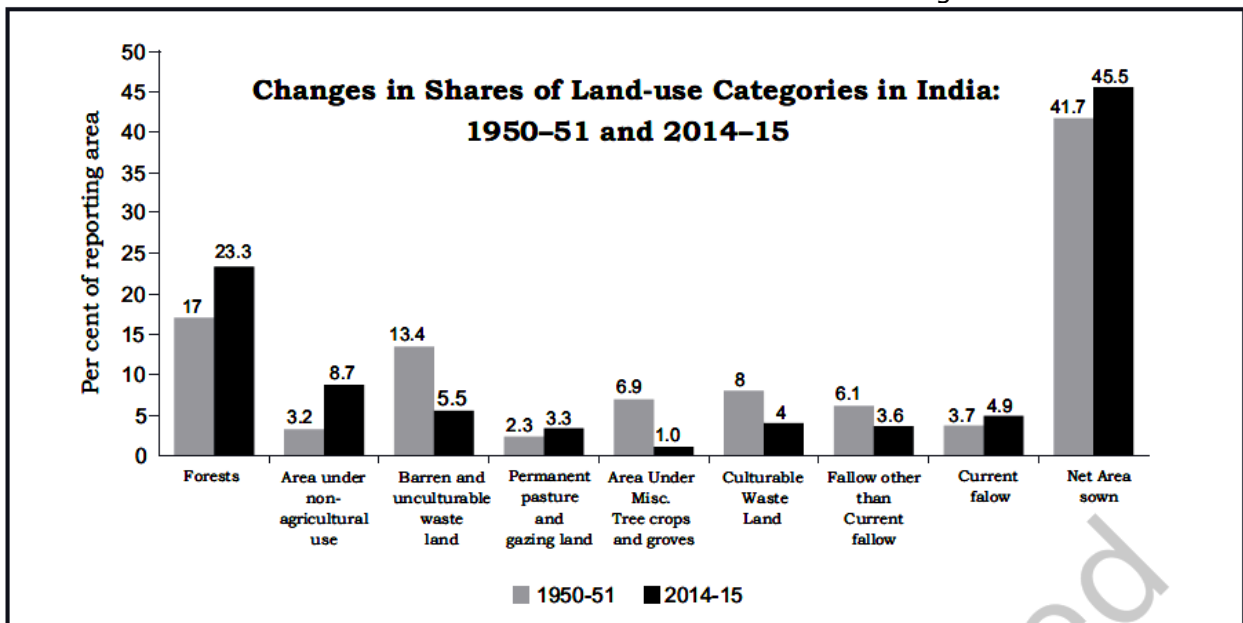
1) **Area under non-agricultural uses:**

- The rate of increase is the highest in case of area under non-agricultural uses.
- This is due to the changing structure of Indian economy. Contribution of Industrial and service sector has increased and expansion of related infrastructural facilities. Area under both urban and rural settlements has increased. Thus, the wastelands and agricultural land are put under non-agricultural uses.

2) **Area under forest:** The increase in the area under forest is due to increase in the demarcated area under forest.

3) **Area under current fallow:** The area under current fallow fluctuates over years, depending on the variability of rainfall and cropping cycles.

4) **Net area sown:** It is a recent phenomenon due to use of culturable waste land for agricultural purpose. Before which it was registering a slow decrease. Most of the decline had occurred due to the increases in area under nonagricultural use.



Q.3 Name four land use categories that have registered a decrease in reporting area since 1960-61. Also give one reasons for their decrease.

Ans. The four categories that have registered a decline are barren and wasteland, culturable wasteland, area under pastures and tree crops and fallow lands. It was due to -

- The wastelands and culturable wastelands have witnessed decline due to increase in the pressure on land from the agricultural and nonagricultural sectors.
- The decline in land under pastures and grazing lands can be explained by pressure from agricultural land. Illegal encroachment due to expansion of cultivation on common pasture lands is largely responsible for this decline.

**COMMON PROPERTY RESOURCES**

Q.4 What are common property resources?

Ans. CPR is owned by the state meant for the use of the community. It is defined as community's natural resource, where every member has the equal right of access and



usage with specified obligations, without anybody having property rights over them. **Examples of CPRs** are Community forests, pasture lands, village water bodies and other public spaces such as 'Chopaal'.

Q.5 Mention the advantages of CPR in rural areas/society.

Ans. Community property resources are important for:

- a. Providing fodder for the livestock and fuel for the households.
- b. Providing other minor forest products like fruits, nuts, fibre, medicinal plants.
- c. Providing additional income from livestock to the landless and marginal farmers and other weaker sections. For them it is the main source of livelihood.
- d. Provide easy access for women to collect the fodder and fuel.

## AGRICULTURAL LAND

Q.6 Explain the importance of land resource to the livelihood of the people depending on agriculture.

Ans. Land resource is more important to the people whose livelihood depend on agriculture:

- (i) Agriculture output purely depends on land resource. Thus, lack of access to land increases incidence of poverty in rural areas.
- (ii) Quality of land has a direct bearing on the productivity of agriculture, which is not true for other activities.
- (iii) In rural areas, land ownership has a social value and serves as a security for credit, natural hazards or life contingencies, and also adds to the social status.

Q.7 Name two types of land saving technologies. Which one of them is more important? Give two main reasons for its importance.

Ans. There are two types of land saving technologies:

- a. **Raising the yield** of particular crop per unit area of land by modern inputs.
- b. Increasing the yield of all crops per unit area of land by increasing **cropping intensity**.

Increasing cropping intensity is more important of the two.

Cropping intensity has many advantages such as:

- (i) It not only helps in increasing output from limited land but also increases the demand for labour.
- (ii) Land in India is scarce but labour is abundant therefore this technique reduces unemployment in the rural economy and fully utilizes land resources.

Q.8 What is cropping intensity?

Ans. It refers to the number of crops raised on a field during an agricultural year. It is the total cropped area as the percentage of net sown area. It is calculated by -

$$\frac{\text{Gross cultivate Area}}{\text{Net sown area}} \times 100$$

## CROPPING SEASONS IN INDIA

Q.9 Explain the three distinct crop seasons in northern and interior parts of India. Name two crops grown in the each season.

Ans. There are three distinct crop seasons in northern India:

### 1) The Kharif season

- a) It largely begins with onset of Southwest Monsoon in May-June and ends in September-October.
- b) Cultivation of **tropical crops** such as rice, cotton, jute, jowar, bajra and tur is done.

### 2) The rabi season

- a) It begins with the beginning of winter in October-November and ends in March-April.

- b) The low temperature conditions during this season facilitate the cultivation of **temperate and subtropical crops**.
  - c) Crops such as wheat, gram and mustard are grown.
- 3) **Zaid season:**
- a) It is a short duration summer cropping season in April and May.
  - b) It begins after harvesting of Rabi crops.
  - c) The cultivation of watermelons, cucumbers, vegetables and fodder crops during this season is done on irrigated lands.

Q.10 Explain why in southern parts of India same crops can be grown thrice in a year.

Ans. In southern India the temperature remains high throughout the year. It is suitable for growing tropical crops during any period in the year. Thus, in this region same tropical crops can be grown thrice in an agricultural year.

### **TYPES OF FARMING**

Q.11 What are the two types of irrigated farming?

Ans. **Irrigated farming** and **Rainfed farming** are the two types of farming classified on the basis of main source of moisture for the crops.

- **Irrigated farming is of two types:**
  - a. **Protective irrigation:** The objective of protective irrigation is to provide water to protect the crops from lack of soil moisture.
  - b. **Productive irrigation:** It is done to achieve high productivity. In such irrigation the water input is higher.
- **Rainfed farming** is of two types:
  - a. **Dryland farming:** is practiced in the regions having annual rainfall less than 75 cm. Hardy and drought resistant crops such as ragi, bajra, moong, gram and guar (fodder crops) are grown. These regions face problems of deficient soil moisture.
  - b. **Wetland farming:** is practiced in the regions having excess rainfall. Various water intensive crops such as rice, jute and sugarcane are grown. These regions may face flood and soil erosion hazards.

### **CROPPING PATTERN**

**Rice:** Rice is a staple food in India. India contributes 22 per cent of rice production in the world and ranks second after China.

1. **Geographical conditions** required for its growth:
  - a. It is mainly grown in tropical humid areas.
  - b. This crop is successfully grown in all areas from sea level to about 2,000 m altitude and from humid areas to dry but irrigated areas.
  - c. In southern states and West Bengal the climatic conditions allow the cultivation of two or three crops of rice in an agricultural year.
  - d. But in Himalayas and northwestern parts of the country, it is grown during kharif season of southwest Monsoon.
2. **Distribution and Yield:**
  - a. About one-fourth of the total cropped area in the country is under rice cultivation.
  - b. West Bengal, Uttar Pradesh, Punjab, are the **leading rice producing states**.
  - c. The yield is high in Punjab, Tamil Nadu, Haryana, Andhra Pradesh. In these states rice cultivation is irrigated. Punjab and Haryana are not traditional rice growing areas.

**Wheat:** Wheat is the second most important cereal crop in India. India produces 12.8% of total wheat production of world.

1. **Geographical conditions:**
  - a. Wheat is primarily a crop of temperate zone.
  - b. Its cultivation in India is done during winter i.e. Rabi season.
  - c. It is grown upto 2700 m altitude in Himalayas.
  - d. It is mostly grown under irrigated conditions.
  - e. But it is a rainfed crop in Himalayan highlands and parts of Malwa plateau in Madhya Pradesh.
  - f. It is grown in 85% of total area of north India.
2. **Distribution and Yield:**
  - a. About 14 per cent of the total cropped area in the country is under wheat cultivation.
  - b. It is mostly grown in north and central regions of the country.
  - c. Uttar Pradesh, Madhya Pradesh, Punjab, Haryana, Rajasthan are **five leading wheat producing states**.
  - d. The yield level of wheat is very high in Punjab and Haryana whereas, Uttar Pradesh, Rajasthan and Bihar have moderate yields.
  - e. In the states of Madhya Pradesh, Himachal Pradesh and Jammu and Kashmir the yield is low because it is grown under rainfed conditions.

**Cotton:**

1. **Geographical conditions:**
  - a. Cotton is a tropical crop.
  - b. It is grown in kharif season in semi-arid areas of the country.
  - c. Cotton requires clear sky during flowering stage.
  - d. Its yield increases if is under irrigated conditions.
2. **Distribution and Yield:**
  - a. India ranks second in the world in the production of cotton after China.
  - b. Cotton occupies about 4.7 per cent of total cropped area in the country.
  - c. There are three cotton growing areas,
    - i. Parts of Punjab, Haryana and northern Rajasthan in north-west,
    - ii. Gujarat and Maharashtra in the west
    - iii. Plateaus of Andhra Pradesh, Karnataka and Tamil Nadu in south.
  - d. **Leading producers of this crop** are Gujarat, Maharashtra, Telangana.

**Jute:** It is used for making coarse cloth, bags, sacks and decorative items.

1. **Distribution:**
  - a. It is a cash crop in West Bengal and adjoining eastern parts of the country.
  - b. At present, India produces about three-fifth of jute production of the world.
  - c. West Bengal is largest jute growing state. Bihar and Assam are other jute growing areas.
  - d. Being concentrated only in a few states, this crop accounts for only about 0.5 per cent of total cropped area in the country.

**Sugarcane:**

1. **Geographical conditions:**
  - a. Sugarcane is a crop of tropical areas.
  - b. Under rainfed conditions, it is cultivated in sub-humid and humid climates.
  - c. But it is largely an irrigated crop in India.
2. **Distribution and Yield:**
  - a. India is the second largest producer of sugarcane after Brazil.
  - b. It accounts for about 19 per cent of the world production of sugarcane.
  - c. Uttar Pradesh is the largest producer of sugarcane but the yield is low.

- d. Maharashtra, Karnataka, Tamil Nadu and Andhra Pradesh are other leading producers of this crop where yield level of sugarcane is high.

**Tea:** Black tea leaves are fermented whereas green tea leaves are unfermented. Tea leaves have rich content of caffeine and tannin.

1. **Geographical conditions:**

- a. Tea is a plantation crop used as beverage.
- b. It is an indigenous crop of hills in northern China.
- c. It is grown over undulating topography of hilly areas
- d. It requires well-drained soils in humid and sub-humid tropics and sub-tropics.

2. **Distribution and Yield:**

- a. In India, tea plantation started in 1840s in Brahmaputra valley of Assam which is a major tea growing area.
- b. West Bengal and Tamil Nadu are the other leading producers of tea. In West Bengal it is grown in Darjiling, Jalpaiguri and Cooch Bihar districts.
- c. Tea is also cultivated in Tamil Nadu in south on the lower slopes of Nilgiri and Cardamom hills in Western Ghats.
- d. India is a leading producer of tea and accounts for about 21.8 per cent of total production in the world.

**Coffee:**

1. **Geographical conditions:**

- a. Coffee is a tropical plantation crop.
- b. Its seeds are roasted, ground and are used for preparing a beverage.
- c. It is grown on well drained highlands.
- d. India mostly grows superior quality coffee, arabica, which is in great demand in International market.

2. **Distribution and Yield:**

- a. India produces only about 4.3 per cent coffee of the world and ranks sixth.
- b. Coffee is cultivated in the highlands of Western Ghats in Karnataka, Kerala and Tamil Nadu.
- c. Karnataka is the leading producer of coffee.

## STRATEGY OF AGRICULRAL DEVELOPMENT IN INDIA

Q.12 Describe the status of Indian agriculture before independence. **OR**

Mention major problems faced by Indian agriculture during pre-independence period.

Ans. Before and during independence Indian agriculture faced many problems:

- a. Indian agricultural economy was largely subsistence in nature before Independence.
- b. Agricultural production was low in the first half of twentieth century.
- c. This period witnessed severe droughts and famines.
- d. During partition about one-third of the irrigated land in undivided India went to Pakistan. This reduced the proportion of irrigated area in Independent India.

Q.13 Describe the growth in the agricultural output and improvement in technology in our country during the last 50 years.

Ans. The agricultural production and technology has improved in our country:

- a. **Production:** Production and yield of many crops such as rice and wheat increased at faster rate.
- b. **Irrigation:** Net area under irrigation has increased. With irrigation use of HYV of seeds and fertilizers has increased.
- c. **Modern Agricultural Technology:** Consumption of chemical fertilizers and pesticides has increased by 15 times because the HYV of seeds are highly vulnerable to pests and diseases.

Q.14 Explain any three major problems faced by Indian agriculture.

Ans. Most of Problems are region specific. They are:

- (i) **Dependence on erratic monsoon:**
  - a. Irrigation covers only about 33 per cent of the cultivated area in India.
  - b. Rest of the cultivated land directly depends on rain.
  - c. Poor performance of south-west monsoon also adversely affects the supply of canal water for irrigation.
  - d. the rainfall in Rajasthan and other drought-prone areas is too small and highly unreliable
  - e. Drought and floods are the two major climatic threats in our agriculture.
- (ii) **Low productivity of crops and labour**
  - a. The yield of the crops in the country is very low in comparison to the international level.
  - b. Because of the very high pressure on the land resources, the labour productivity is also very low.
  - c. Cereals, pulses and oilseeds have very low yields.
- (iii) **Constraints of Financial Resources and Indebtedness**
  - a. Modern agricultural inputs are very costly. Most of small and marginal farmers can not afford them.
  - b. Crop failure, low returns causes farmer to take credit from various money lenders and they fall in trap of indebtedness.
- (iv) **Lack of Land Reforms**
  - a. There has been unequal distribution of agricultural land.
  - b. Reforms were not implemented effectively due to lack of strong political will.
  - c. Lack of implementation of land reforms has resulted in continuation of unfair distribution of cultivable land
- (v) **Small Farm Size and Fragmentation of Landholdings**
  - a. There are a large number of marginal and small farmers in the country.
  - b. The farm size is small. The average size of land holding is shrinking under population pressure.
  - c. The small size of land has become uneconomic.
- (vi) **Lack of Commercialization**
  - a. A large number of farmers produce crops for self-consumption.
  - b. These farmers do not have enough land resources to produce more than their requirement.
  - c. Modernisation and commercialization of agriculture have taken place only in few irrigated areas.
- (vii) **Vast Under-employment**
  - a. In the un-irrigated areas there is a seasonal unemployment ranging from 4 to 8 months.
  - b. Even during the cropping season work is not available for all the days.
  - c. Hence, the people engaged in agriculture do not have the opportunity to work round the year causing underemployment.
- (viii) **Degradation of Cultivable Land: Causes**
  - a. Large region of agricultural land has lost its fertility due to alkalization and Salinisation of soils and water logging.
  - b. Wrong strategy of irrigation and agricultural operations has degraded land.
  - c. Excessive use of chemicals such as insecticides and pesticides has increased concentration of toxic material in the soil.
  - d. Nitrogen fixing Leguminous Crops are no longer cultivated in irrigated areas.
  - e. Land is not put to rest. This has destroyed the process of natural fertilization.
  - f. Soil erosion is common in humid and semi-arid tropics.