

AGRICULTURE IN INDIA

Types of Farming

Shifting cultivation allows the soil to regain its fertility naturally but gives very poor yield to farmers and leads to large-scale destruction of forests. Crops like corn, rice and millets are grown in this type of farming.

Raw material from agriculture also supports a number of industries like cotton textiles, food processing and handicrafts.

Primitive subsistence farming:

- . Involves cultivating food crops in small fields essentially to sustain the farmer's family.
- . Depends entirely on local soil and environment conditions and monsoons.

- . Involves hard manual labour.
- . Is slash-and-burn agriculture.
- . Allows the soil to regain its fertility naturally.
- . Gives very poor yield and leads to large-scale destruction of forests

Besides India, slash-and-burn or shifting cultivation is practised in many parts of the world and known by different names.

In India, the most popular name for such shifting cultivation is Jhumming, in many of our north-eastern states of Assam, Meghalaya, Mizoram and Nagaland.

Another system of cultivation practised in India is called intensive subsistence farming. This system is practised in densely populated areas of Punjab, Haryana, Western Uttar Pradesh, West Bengal, Tamil Nadu, Kerala and the

coastal regions of Andhra Pradesh. The main purpose of intensive subsistence farming is to get maximum yield from the available land. Extensive irrigation methods and large quantities of chemical fertilisers are used in this system of farming.

Repeated division of land amongst successive generations of farmers decreases individual land holding, further encouraging farmers to use all available means to increase yield. Commercial farming is another system of cultivation.

This involves the cultivation of a crop in large quantities for the purpose of selling it in the market. This system uses high yielding seeds, chemical fertilisers and pesticides. Plantations of crops like tea in Assam and north Bengal, coffee in Karnataka, rubber in Kerala, and bamboo, sugarcane, cotton and banana, are also

forms of commercial farming.

In these plantations, a single crop is cultivated over vast areas. The cultivation of a crop can be classified as commercial or subsistence farming, depending on the area where it is grown.

Agriculture

This process of transformation of a crop to a finished product can be divided into three types of economic activities i.e. Primary, Secondary and Tertiary Activities. The activities related to the extraction of natural resources, growing crops and rearing livestock, are called primary activities.

The activities related to the processing of natural resources, like grinding wheat to produce flour are called secondary

activities. While the activities that support the primary and secondary activities through services, such as transportation and marketing, are known as tertiary activities.

Agriculture is derived from the Latin words *ager*, meaning field, and *cultura*, meaning cultivation. Agriculture hence refers to the process of producing food, feed and fibre through the cultivation of plants, and rearing livestock and is also known as farming.

About 50% of the world's population is engaged in agriculture. In India, more than $\frac{2}{3}$ rd of the population is dependent on agriculture for their livelihood. This is because, India has the land and climatic conditions favorable for carrying out agricultural activities. The land that can be used for cultivation is referred to as arable land.

Apart from soil conditions, different climatic factors that affect the cultivation of crops in an area are rainfall or precipitation, temperature, and light. Different crops require different climatic conditions for a healthy growth.

Other forms of cultivation are: Sericulture, Pisciculture, Viticulture and Horticulture.

Sericulture is the art and science of rearing silk worms to produce raw silk and involves the cultivation of food-plants to feed the silk worms, and the extraction of raw silk yarn from the cocoons of the silk worms for processing and weaving.

Sericulture derives its name from the Latin words serikos, meaning silk, and cultura, meaning cultivation.

Pisciculture is the scientific method for breeding fish in specially designed ponds,

tanks or lakes and is done purely for commercial purposes. Pisciculture also derives its name from the Latin words *pisci*, meaning fish, and *cultura*, meaning cultivation.

Viticulture derives its name from the Latin words *vitis*, meaning vine, and *cultura*, meaning cultivation and is the science, study and production of grapes.

Horticulture is the industry and science of cultivating fruits, vegetables, flowers or ornamental plants. It also derives its name from the Latin words *horti*, meaning garden, and *cultura*, meaning cultivation. It involves all the activities carried out to improve the crop yield, quality and nutritional value, and resistance to insects and diseases.

Farming Systems

The farming system has three components: Input, Process and Output. The inputs to a farming system include seeds, fertilisers, machinery and labour while the outputs of farming are crops, wool, dairy and poultry products. The outputs are obtained by processing activities, like tilling, sowing, irrigating, weeding and harvesting, or breeding in case of an animal farm.

There are two types of farming:

Subsistence farming and Commercial farming. Subsistence farming is carried out at a low scale for a small output while commercial farming involves activities on a larger scale and yields a much larger produce.

Subsistence farming mostly serves to meet the requirements of the farmer and his family while commercial farming, the crops grown and the animals reared are sold in the market. The technology used in subsistence farming is very low-end, and most of the labour is manual whereas in commercial farming, minimal manual labour is involved and machines do most of the work.

Subsistence farming can be further classified into two types: Intensive subsistence farming and Primitive subsistence farming.

In intensive subsistence farming, farmers use simple tools, such as spades and ploughs, and manual labour to cultivate a small plot of land. Intensive subsistence farming is practiced in areas having fertile soil and receiving plenty of sunshine throughout the year. For example, it is

practiced in the tropical and sub-tropical areas of West Bengal and Andhra Pradesh.

Intensive subsistence farming is practised by farmers in the monsoon regions of south, southeast and east Asia. It is more common in the thickly populated areas in these regions. Rice is the main crop grown through intensive farming in addition to wheat, maize, pulses and oilseeds on the same plot of land.

Primitive subsistence farming can be further classified into: Shifting cultivation and Nomadic herding.

In shifting cultivation farmers temporarily use a plot of land for cultivation and then abandon it when the soil loses its fertility. This farming system is common in areas where the rainfall is heavy and the vegetation can regenerate rapidly. It is practiced in the dense forest areas of north-east India, parts of south-east Asia, tropical

Africa and the Amazon basin.

This type of farming is also known as slash and burn agriculture owing to the process. The crops grown here are maize, yam, potatoes and cassava.

Nomadic herding is a form of animal farming where herdsmen move from one place to another with their animals, fodder and water, following defined routes. It is practiced in semi-arid and arid areas like Rajasthan, and Jammu and Kashmir Sahara and Central Asia.

The nomads rear sheep, goats, camels and yaks and these animals provide milk, meat, wool, hides to the herdsmen.

Commercial farming is of three types: Commercial grain farming, Mixed farming and Plantations. Commercial grain farming, is the cultivation of crops for commercial purposes where crops are

grown for sale in the market. This type of farming is common in the sparsely populated areas of the temperate grasslands of North America, Europe and Asia. The main crops grown are wheat and maize.

In mixed farming, the same plot of land is used for cultivating crops and rearing livestock. Farmers cultivate food crops like rice and wheat, and fodder crops like barley and grass. This type of farming is common in Europe, parts of eastern USA, Argentina, southeast Australia, New Zealand and South Africa.

Plantation refers to large farms or estates growing a single crop for commercial usage. This type requires a large amount of labour, and capital investment in building an extensive transportation network.

Plantations involve the cultivation of crops like tea, sugarcane and rubber for supply to

agro-based industries as raw material.

The produce from these plantations, like tea leaves and rubber latex, are processed to produce market-ready output, i.e. tea and rubber sheets. Plantations are common in tropical and sub-tropical regions of the world, like India, Sri Lanka, Malaysia, and Brazil.

Cropping Seasons in India

Agriculture in India also follows three distinct cropping seasons i.e. rabi, kharif and zaid.

Rabi crops are sown from October to December and harvested in April to June next year. Important rabi crops are wheat, mustard, barley, grams and peas. The important areas of rabi crops are Punjab, Haryana, Uttar Pradesh, Uttaranchal,

Himachal Pradesh, and Jammu and Kashmir.

A movement launched in India in the mid-1960s promoted the use of high-yield seeds, and an increase in the use of fertilisers and irrigation. This movement is called the Green Revolution of India.

Kharif crops are sown in July to August with the onset of monsoons and harvested in September and October. Important kharif crops are rice, maize, millets like jowar and bajra, pulses like arhar or tur, moong and urad, fibre crops like cotton and jute, and oilseeds like groundnut and soybean. The main rice-producing areas in India are Assam, West Bengal, coastal Orissa, Andhra Pradesh, Tamil Nadu, Kerala, Konkan in Maharashtra, Uttar Pradesh and Bihar.

The summer months between harvesting the rabi crop and sowing the kharif crop, are called the zaid season. During this season, farmers cultivate crops that grow quickly, like watermelon, muskmelon, cucumber, summer vegetables and fodder crops.

Technological and Institutional Reforms

The main problems faced by farmers in India are:

- Fragmentation of land holdings by successive inheritance
- Primitive methods of farming
- Dependence on monsoon and natural fertility of soil
- Exploitation by local money lenders and middlemen
- Lack of insurance against natural calamities

The technological and institutional changes initiated in India to improve the condition of farmers include:

The land reforms initiated in the first five-year plan aimed to:

- abolish zamindari and
- consolidate land holdings. The consolidation of land holdings involved combining adjacent small fields into single large farms and encouraging individual land owners to do cooperative farming.

Agricultural reforms in the 1960s and 1970s known as the green revolution in India:

- Providing high yielding varieties of seeds and fertilisers to farmers, and

- . Developing large-scale irrigation facilities to allow them to grow two crops in a year.
- . Continued expansion of farming areas.

White revolution:

- . Doctor Verghese Kurien is credited with architecting Operation Flood -- the largest dairy development programme in the world.

The government launched a comprehensive land development programme in the 1980s and 1990s:

- . Insurance cover to farmers against damage to crops and
- . Setting up of rural banks and cooperative societies to provide them loans on easy rates of interest.

The government also started broadcasting radio and television programmes to educate farmers about new techniques of agriculture and give them prior warning about weather conditions. To stop the exploitation of farmers by middlemen, the government announced the procurement, remunerative and minimum support prices of all the major crops in India.

The government also launched personal benefit schemes for farmers, like the Kisan Credit Card and the Personal Accident Insurance Scheme. Under the Land Ceiling Act by government no individual or family could own more than a certain quantum of land.