

Agriculture

India is an agriculturally important country. Two-thirds of its population is engaged in agricultural activities. Agriculture is a primary activity, which produces most of the food that we consume. Besides food grains, it also produces raw material for various industries.

TYPES OF FARMING

Agriculture is an age-old economic activity in our country. Over these years, cultivation methods have changed significantly depending upon the characteristics of physical environment, technological know-how and socio-cultural practices. Farming varies from subsistence to commercial type. At present, in different parts of India, the following farming systems are practised.

Primitive Subsistence Farming

- This type of farming is still practised in few pockets of India.
- Primitive subsistence agriculture is practised on small patches of land with the help of primitive tools like hoe, dao and digging sticks, and family/community labour.
- This type of farming depends upon monsoon, natural fertility of the soil and suitability of other environmental conditions to the crops grown.
- It is 'slash and burn' agriculture. Farmers clear a patch of land and produce cereals and other food crops to sustain their family.
- When the soil fertility decreases, the farmers shift and clear a fresh patch of land for cultivation.
- This type of shifting allows Nature to replenish the fertility of the soil through natural processes; land productivity in this type of agriculture is low as the farmer does not use fertilisers or other modern inputs. It is known by different names in different parts of the country.

Jhumming: The 'slash and burn' agriculture is known as

- **'Milpa'** in Mexico and Central America,
- **'Conuco'** in Venezuela,
- **'Roca'** in Brazil,
- **'Masole'** in Central Africa,
- **'Ladang'** in Indonesia,
- **'Ray'** in Vietnam.

In India, this primitive form of cultivation is called 'Bewar' or 'Dahiya' in Madhya Pradesh, 'Podu' or 'Penda' in Andhra Pradesh, 'Pama Dabi' or 'Koman' or 'Bringa' in Odisha, 'Kumari' in Western Ghats, 'Valre' or 'Waltre' in South-eastern Rajasthan, 'Khil' in the Himalayan belt, 'Kuruwa' in Jharkhand, and 'Jhumming' in the North-eastern region.

Intensive Subsistence Farming

- This type of farming is practised in areas of high population pressure on land.
- It is labour-intensive farming, where high doses of biochemical inputs and irrigation are used for obtaining higher production.
- Though the 'right of inheritance' leading to the division of land among successive generations has rendered land-holding size uneconomical, the farmers continue to take maximum output from the limited land in the absence of alternative source of livelihood.
- Thus, there is enormous pressure on agricultural land.

Commercial Farming

- The main characteristic of this type of farming is the use of higher doses of modern inputs, e.g.
- high yielding variety (HYV) seeds, chemical fertilisers, insecticides and pesticides in order to obtain higher productivity.

- The degree of commercialisation of agriculture varies from one region to another.
- For example, rice is a commercial crop in Haryana and Punjab, but in Odisha, it is a subsistence crop.

Plantation is also a type of commercial farming.

- In this type of farming, a single crop is grown on a large area.
- The plantation has an interface of agriculture and industry.
- Plantations cover large tracts of land, using capital intensive inputs, with the help of migrant labourers.
- All the produce is used as raw material in respective industries.
- In India, tea, coffee, rubber, sugarcane, banana, etc. are important plantation crops.
- Tea in Assam and North Bengal coffee in Karnataka are some of the important plantation crops grown in these states.
- Since the production is mainly for market, a well-developed network of transport and communication connecting the plantation areas, processing industries and markets plays an important role in the development of plantations.

CROPPING PATTERN

You have studied the physical diversities and plurality of cultures in India. These are also reflected in agricultural practices and cropping patterns in the country. Various types of food and fibre crops, vegetables and fruits, spices and condiments, etc. constitute some of the important crops grown in the country. India has three cropping seasons — rabi, kharif and zaid.

Rabi crops

- Rabi crops are sown in winter from October to December and harvested in summer from April to June.

- Some of the important rabi crops are **wheat, barley, peas, gram and mustard.**
- Though, these crops are grown in large parts of India, states from the north and north-western parts such as Punjab, Haryana, Himachal Pradesh, Jammu and Kashmir, Uttarakhand and Uttar Pradesh are important for the production of wheat and other rabi crops.
- Availability of precipitation during winter months due to the western temperate cyclones helps in the success of these crops.

Kharif crops

- **Kharif crops are grown with the onset of monsoon in different parts of the country and these are harvested in September-October.**
- Important crops grown during this season are **paddy, maize, jowar, bajra, tur (arhar), moong, urad, cotton, jute, groundnut and soyabean.**
- Some of the most important rice-growing regions are Assam, West Bengal, coastal regions of Odisha, Andhra Pradesh, Telangana, Tamil Nadu, Kerala and Maharashtra, particularly the (Konkan coast) along with Uttar Pradesh and Bihar. Recently, paddy has also become an important crop of Punjab and Haryana.
- In states like Assam, West Bengal and Odisha, three crops of paddy are grown in a year.
- These are Aus, Aman and Boro.

In between the rabi and the kharif seasons, there is a short season during the summer months known as the Zaid season. Some of the crops produced during 'zaid' are watermelon, muskmelon, cucumber, vegetables and fodder crops. Sugarcane takes almost a year to grow.

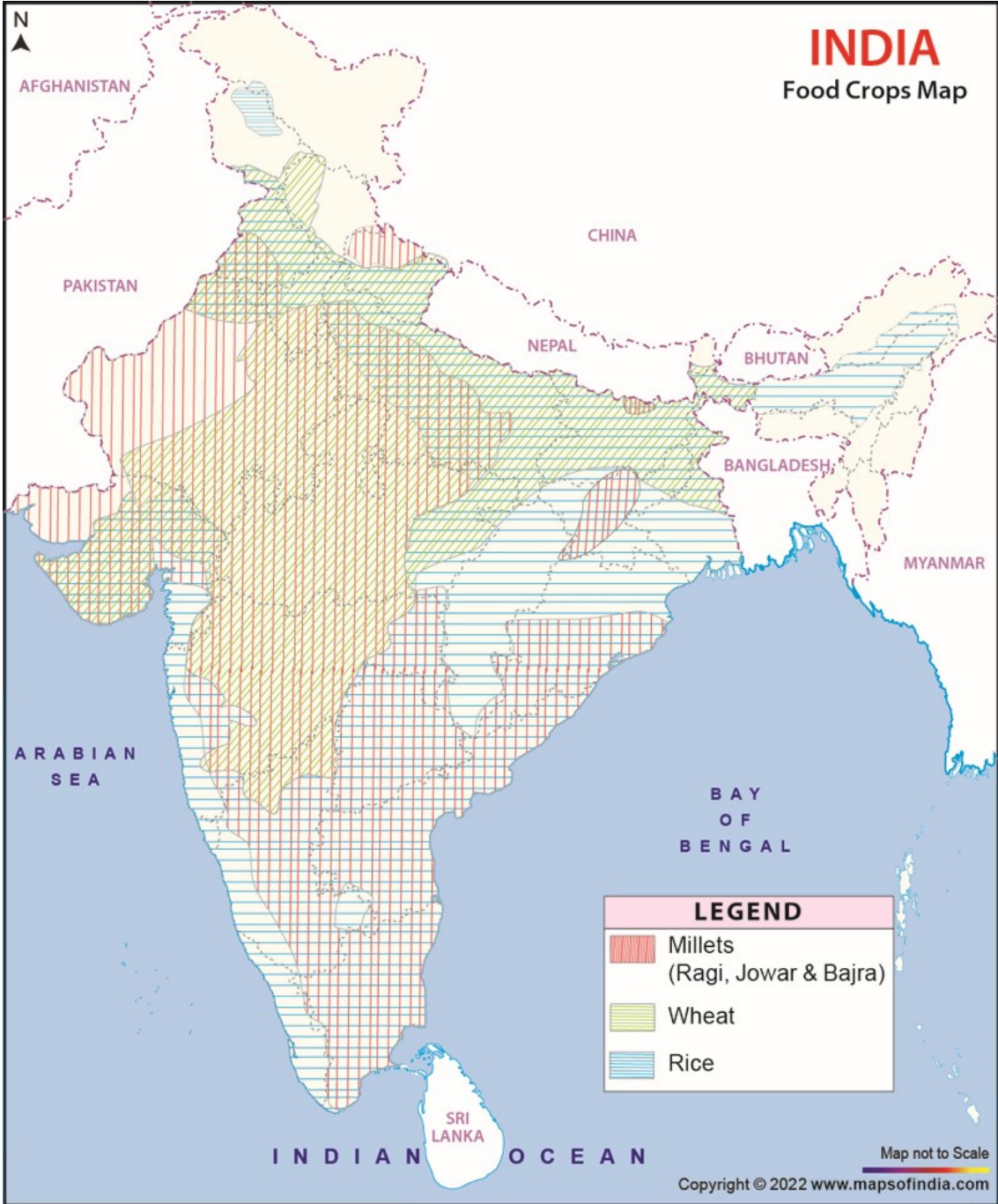
MAJOR CROPS

A variety of food and non-food crops are grown in different parts of the country depending upon the variations in soil, climate and cultivation practices. Major crops grown in India are rice, wheat, millets, pulses, tea, coffee, sugarcane, oil seeds, cotton and jute, etc.

S.No.	Types of Crops	Meaning	Major Crops
1	Food grains	Crops that are used for human consumption	Rice, Wheat, Maize, Millets, Pulses and Oil seeds
2	Commercial Crops	Crops which are grown for sale either in raw form or in semi-processed form	Cotton, Jute, Sugarcane, Tobacco and Oilseeds
3	Plantation Crops	Crops which are grown on Plantations covering large estates	Tea, Coffee, Coconut and Rubber
4	Horticulture	Sections of agriculture in which Fruits and Vegetables are grown	Fruits and Vegetables

Rice:

- It is the staple food crop of a majority of the people in India.
- Our country is the second largest producer of rice in the world after China.
- It is a kharif crop which requires high temperature, (above 25°C) and high humidity with annual rainfall above 100 cm. In the areas of less rainfall, it grows with the help of irrigation.
- Rice is grown in the plains of north and north-eastern India, coastal areas and the deltaic regions.
- Development of dense network of canal irrigation and tube-wells have made it possible to grow rice in areas of less rainfall such as Punjab, Haryana and western Uttar Pradesh and parts of Rajasthan.



Wheat:

- This is the second most important cereal crop.
- It is the main food crop, in north and north-western part of the country.
- This rabi crop requires a cool growing season and a bright sunshine at the time of ripening.
- It requires 50 to 75 cm of annual rainfall evenly distributed over the growing season.
- There are two important wheat-growing zones in the country – the Ganga-Satluj plains in the northwest and black soil region of the Deccan.
- The major wheat-producing states are Punjab, Haryana, Uttar Pradesh, Bihar, Rajasthan and parts of Madhya Pradesh.

Millets:

- Jowar, bajra and ragi are the important millets grown in India.
- Though, these are known as coarse grains, they have very high nutritional value. For example, ragi is very rich in iron, calcium, other micro nutrients and roughage.
- Jowar is the third most important food crop with respect to area and production. It is a rain-fed crop mostly grown in the moist areas which hardly needs irrigation.
- Major Jowar producing States were Maharashtra, Karnataka, Andhra Pradesh and Madhya Pradesh in 2011-12.
- Bajra grows well on sandy soils and shallow black soil. Major Bajra producing States were: Rajasthan, Uttar Pradesh, Maharashtra, Gujarat and Haryana in 2011-12.
- Ragi is a crop of dry regions and grows well on red, black, sandy, loamy and shallow black soils.
- Major ragi producing states are: Karnataka, Tamil Nadu, Himachal Pradesh, Uttarakhand, Sikkim, Jharkhand and Arunachal Pradesh.

Maize:

- It is a crop which is used both as food and fodder.
- It is a kharif crop which requires temperature between 21°C to 27°C and grows
- Well in old alluvial soil.
- In some states like Bihar maize is grown in rabi season also.
- Use of modern inputs such as HYV seeds, fertilisers and irrigation have contributed to the increasing production of maize.
- Major maize-producing states are Karnataka, Uttar Pradesh, Bihar, Andhra Pradesh, Telangana and Madhya Pradesh.

Pulses:

- India is the largest producer as well as the consumer of pulses in the world. These are the major source of protein in a vegetarian diet.
- Major pulses that are grown in India are tur (arhar), urad, moong, masur, peas and gram.
- Can you distinguish which of these pulses are grown in the kharif season and which are grown in the rabi season?
- Pulses need less moisture and survive even in dry conditions.
- Being leguminous crops, all these crops except arhar help in restoring soil fertility by fixing nitrogen from the air.
- Therefore, these are mostly grown in rotation with other crops.
- Major pulse producing states in India are Madhya Pradesh, Uttar Pradesh, Rajasthan, Maharashtra and Karnataka.

AGRICULTURAL REGIONS INTRODUCTION:

An agricultural region is defined as an area having homogeneity in relief, soil type, climatic conditions, farming practices, crops produced and crop association. India is a vast country and is endowed with diverse geographical conditions which are bound to bring in regional variations in agriculture.

AGRICULTURAL REGIONS PROPUNDER:

Several scholars have attempted to delineate the agricultural regions of India.

Prominent among them are

- E.Simkins(1926)
- D.Thomer (1956)
- M.S.Randhawa(1958)
- L.D.Stamp(1958)
- ChenHang-Seng (1959)
- O.H.K.Spate and A.T.A.Learmonth(1960)
- Ramchandran(1963),F. Siddiqui(1967)
- O.Slampa(1968)
- MissP.Sengupta(1968)
- R.L.Singh(1971)
- JasbirSingh(1975)

1. Rice-Jute-Tea Region

This includes valleys and river deltas, lowlands in the states of Meghalaya, Arunachal Pradesh, Tripura, northern and eastern Bihar, Assam, Orissa, West Bengal, and parts of Jharkhand and Chhattisgarh and Tarai region of Uttar Pradesh. Rainfall varies from 180-250cm.

2. Wheat and Sugarcane Region

This Includes Uttar Pradesh, Bihar, Haryana, Punjab where rich fertile alluvial soils with some parts having black and red soils are there. Rainfall is moderate generally.

3. Cotton Region

It consists of black cotton soil area of the Deccan plateau where the rainfall varies from 75-100cm. Other crops like jowar, bajra, gram, sugarcane, wheat, etc. are also grown.

4. Maize and Coarse Crops Region

It includes northern Gujarat and western Rajasthan where rainfall is below 50 cm. Agriculture is done with the way of irrigation in most parts.

5. Millets and Oilseeds Region

It includes parts of Karnataka, southern Andhra Pradesh, parts of Tamilnadu and eastern Kerela. Rainfall is similar like in cotton region that is 75-100 cm. Oilseeds grown are groundnut and castor while the millets include ragi, jowar and bajra.

6. Fruits and Vegetable Region

This region covers Assam in east to Kashmir in West where rainfall is around 200cm in the East and 60 cm in the west. Fruits like Apple, peach, cherries, plum, and apricot are grown in the west while oranges are important in the east.

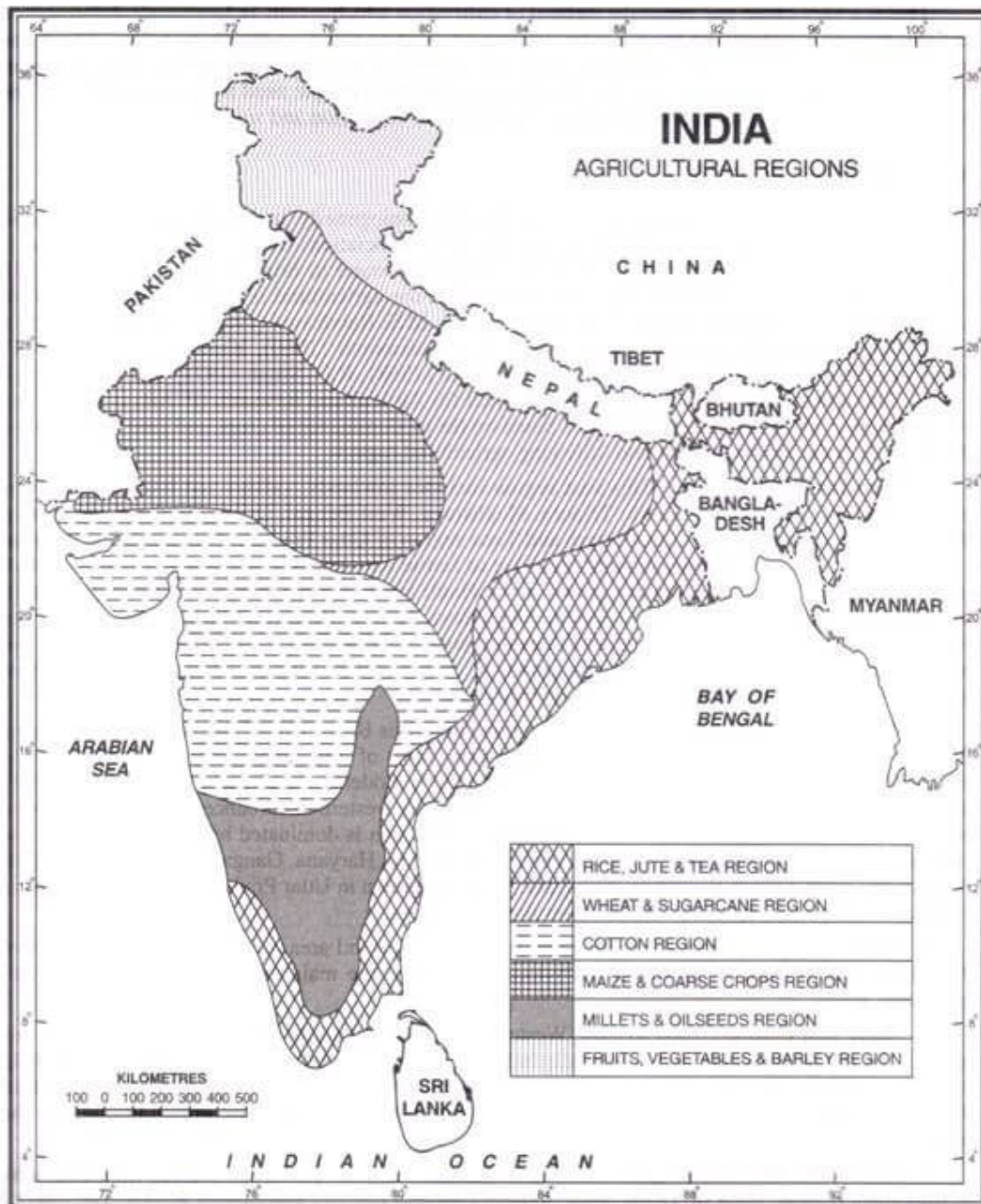


FIG. 22.1. India : Agricultural Regions

Agro-climatic regions/zones in India

S.No	Agro-climatic regions/zones	States represented
1	Western Himalayan region	Himachal Pradesh, Jammu & Kashmir, Uttarakhand
2	Eastern Himalayan region	Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, West Bengal
3	Lower Gangetic plain region	West Bengal
4	Middle Gangetic plain region	Uttar Pradesh, Bihar
5	Upper Gangetic plain region	Uttar Pradesh
6	Trans Gangetic plain region	Chandigarh, Delhi, Haryana, Punjab, Rajasthan
7	Eastern plateau and hills region	Chhattisgarh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, West Bengal
8	Central plateau and hills region	Madhya Pradesh, Rajasthan, Uttar Pradesh
9	Western plateau and hills region	Madhya Pradesh, Maharashtra
10	Southern plateau and hills region	Andhra Pradesh, Karnataka, Tamil Nadu
11	East coast plains and hills region	Andhra Pradesh, Odisha, Puducherry, Tamil Nadu
12	West coast plains and ghat region	Goa, Karnataka, Kerala, Maharashtra, Tamil Nadu
13	Gujarat plains and hills region	Gujarat, Dadra & Nagar Haveli, Daman & Diu
14	Western dry region	Rajasthan
15	Island region	Andaman & Nicobar Islands, Lakshadweep

Source: Planning Commission (Khanna, 1989) has identified 15 resource development regions in the country, 14 in the main land and remaining one in the islands of Bay of Bengal and Arabian Sea.

Agro-climatic regions / zones in India

