

Agriculture

Check Point 01

Q. 1. Name some factors on which farming practice in India depends.

Answer: Due to a long growing season, various types of soils, climate, and large agricultural area, India is an important producer of many crops. The factors on which farming practice in India depend upon can be divided into two types –

- a) Physical factors which include climate, soil, and landform.
- b) Socio-economic factors which include demand for food/cash crops, technology, labour and organization.

Q. 2. In which type of farming, primitive tools are used.

Answer: India is predominantly an agricultural country. Different forms of agriculture are practiced in the country which depends upon a variety of physical, environmental and socio-economic conditions. One type of agriculture that is practiced in the country is primitive subsistence farming and is one of the oldest methods used for growing and harvesting crops. In this form, the producer lives directly on what he produces. It is fully dependent on natural environmental factors along with family labour, and there is no involvement of technology in any form. The tools like hoe, dao and digging sticks that are used are also primitive in nature. It is mostly observed in less economically developed areas where population density is high, but means of gainful employment outside of agriculture is low.

Q. 3. Name the farming in which a patch of land is cleared and burned for cultivation.

Answer: The 'slash and burn' method of farming known as 'Jhumming cultivation' in India is practiced generally by tribal people. It is also known as shifting cultivation. In this system, forest land is cleared for raising crops until the soil loses its fertility. With the loss of soil fertility, the farmer moves to newer forest lands often leading to severe environmental degradation.

Q. 4. Rabi crops are majorly grown in which states of India?

Answer: Agricultural crops in India are often divided into three types based on the cropping season. These are – rabi, Kharif and zaid. When cultivation began in early winter (October -December) and harvested during the summer months (April -June), it is known as the winter crop or rabi crop. Although it is not the major cropping season in India, winter wheat is important in Northern India. Rabi crops are mainly grown in the states from the north and north-western parts of India such as Punjab, Haryana, Himachal Pradesh, Jammu and Kashmir, Uttarakhand and Uttar Pradesh.

Check Point 02

Q. 1. Give one example of leguminous crops.

Answer: Leguminous crops are related to or denoted by the plants of the pea family. These have seeds in pods, distinctive flowers, and typically root nodules containing symbiotic bacteria able to fix nitrogen. A large number of such crops are utilized as food crops as well as fallow crops. Leguminous crops include pulses, beans, groundnuts, and cowpeas.

Q. 2. The crop is one of the major food crops in India and mostly rain-fed. Name the crop.

Answer: Jowar is a type of millet crop that is one of the major food crops in India, and its cultivation is mostly rain-fed.

Q. 3. Which crop is known as 'Poor Man's Meat'?

Answer: Lentils which are a type of pulse crops, under the leguminous crop type, is known as 'poor man's meat' as it has high protein along with high dietary fibre but low fat. Lentils are also packed with a variety of minerals. Examples of lentils include green gram, yellow gram, orange gram, black gram, and Bengal gram.

Q. 4. Name a plantation crop of Assam.

Answer: Cultivation of a single crop on a large scale with an organization similar to industrial production is called plantation agriculture. In India, tea, coffee, rubber, sugarcane, banana, etc., are important plantation crops. Tea is an important plantation crop in Assam.

Check Point 03

Q. 1. Which crop provide the raw material for jaggery and molasses?

Answer: Sugarcane which provides the necessary raw material for jaggery and molasses is grown in India mainly for producing sweeteners.

Q. 2. Apart from cooking, what are the other uses of oilseeds?

Answer: Different oilseeds are grown in India, and they can be divided into two categories. Edible oilseeds include groundnut, rapeseed, mustard, sesame, sunflower, and soya bean. These are mostly used as a cooking medium. Non-edible oilseeds include linseed, castor seed, and cottonseed. These are mostly used in paint and varnish, leather industry, and as a raw material in soap-making, cosmetics, and ointments.

Q. 3. Name the variety of coffee grown in India, that initially was brought from Yemen.

Answer: The variety of coffee grown in India that was initially brought from Yemen is called Arabica. It is grown in the hills of Karnataka (Kodagu, Chikkamagaluru and Hassan), Kerala (Malabar region) and Tamil Nadu (Nilgiris District, Yercaud and Kodaikanal).

Q. 4. Why jute fibre is suitable for making bags, mats, ropes, carpets etc. but not cloths?

Answer: Jute was traditionally the most important industrial crop of eastern India. The fibre obtained from the jute plant is rough in texture and uneven making it an ideal raw material for ropes, gunny bags, mats etc. but not for cloth. Its roughness makes it an uncomfortable material for clothing purposes.

Q. 5. What was the main focus of the first Five Year Plan?

Answer: Continued efforts have been made to develop agriculture in the country since independence. One of the most important processes through which this was done was the Five-Year Plans carried out in the country. These plans are centralized and integrated national economic programmes. The first Five Year Plan (1951 -1956) strongly supported agricultural production, and its main focus was 'land reforms' through the abolition of the zamindari system, ceiling on land holdings and consolidation of fragmented land holdings.

Self Assessment

Q. 1. Name two industries based on agricultural raw material.

Answer: Industries that depend on agriculture for raw materials are called agro-based industries. Two examples of such industries are as follows –

- a) Sugar industry which depends upon sugarcane crop for raw materials
- b) Jute Textile industry which depends upon jute crop for jute fibres which are the most important raw material for it.

Q. 2. Dahiya and Podu are two agriculture practices found in Madhya Pradesh and Andhra Pradesh respectively. Is there any similarity between these two agricultural practices?

Answer: Dahiya and Podu are two agriculture practices found in Madhya Pradesh and Andhra Pradesh respectively. They are similar agricultural practices and better known as shifting cultivation. It is also known as 'Jhumming' cultivation and mostly practiced by tribal people. In this system, forest land is cleared for raising crops until the soil loses its fertility. With the loss of soil fertility, the farmer moves to newer forest lands often leading to severe environmental degradation.

Q. 3. One type of agriculture produces only food crop for sustaining the high population and domestic animals. Name the farming type.

Answer: Intensive subsistence farming produces only food crop for sustaining the high population and domestic animals. It is characterized by small land holdings which are cultivated by the farmer and his family using simple tools and more labour. Often farming is further intensified by the use of fertilizers and artificial irrigation.

Q. 4. Give two reason for variation of the degree of commercialisation of agriculture from region to region.

Answer: India is predominantly an agricultural country. Different forms of agriculture are practiced in the country which depends upon a variety of physical, environmental and socio-economic conditions. The commercialization of agriculture refers to the process of growing crops mainly for commercial purposes rather than for individual consumption. Two important reasons behind the variation of degrees in the commercialization of agriculture are as follows –

a) Demand – Often one region requires a certain crop but may be unable to grow it or needs surplus quantity. Thus, other areas where the crop is not in high demand practices commercial farming of said crop. E.g., Punjab and Haryana have a preference for wheat but also grow rice as a commercial crop, which is sought after by states like Orissa, West Bengal which is rice based.

b) Land fertility – Often available agricultural land is not fertile enough for growing food crops. These lands are then used for a variety of plantations like rubber, bamboo etc.. which have commercial purposes.

Q. 5. Identify the places where apricot and walnut are produced in India.

Answer: Apricots and walnuts are horticultural crops and are mostly grown in the states of Jammu and Kashmir, and Himachal Pradesh in India.

Q. 6. Give two examples of zaid crops.

Answer: Zaid crops refer to those crops grown in the summer season that falls between the harvesting of kharif crops and sowing of rabi crops. Two examples of zaid crops include watermelon and cucumber.

Q. 7. As Darjeeling of west Bengal is famous for tea Punjab for wheat, Which crop is Kerala famous for?

Answer: Kerala is famous for the plantation crop rubber. It is the leading rubber plantation state in India. It accounts for 92 per cent of the country's total natural rubber production.

Q. 8. Why organic farming is much in demand today?

Answer: Organic farming is defined as an integrated farming system that strives for sustainability. It is very much in demand today because it does not use any harmful chemical fertilizers or pesticides in the growth process. Instead, it depends on organic

fertilizers and involves techniques like crop rotation for agriculture which goes a long way to in providing positive benefits to the environment.

Q. 9. Briefly discuss the cultivation of oilseeds in India.

Answer: India is the second largest producer of oilseeds after China according to 2014 data. Different oilseeds are grown in India, and they cover approximately 12% of the total cropped area of the country. Different oilseeds are grown in India, and they can be divided into two categories.

Edible oilseeds include groundnut (Kharif crop), rapeseed, mustard (rabi crop), sesame (Kharif crop in the north and rabi crop in the south), sunflower and soya bean. These are mostly used as a cooking medium.

Non-edible oilseeds include linseed (rabi crop), castor seed and cottonseed. These are mostly used in paint and varnish, leather industry, and as a raw material in soap-making, cosmetics, and ointments. Drylands of Malwa Plateau, Marathwada, Gujrat, Rajasthan, Telangana and Rayalaseema region of Andhra Pradesh and Karnataka Plateau are oilseeds growing regions of India.

Q. 10. Discuss the technological innovations which improved farming in India.

Answer: Some of the technological innovations which improved farming in India are as follows –

- a) Expansion of irrigation facilities along with the consolidation of the existing systems has been the main strategy for increasing agricultural production.
- b) Fertilizer is a key input for increasing agricultural production. The government provides a subsidy for the use of fertilizers so that farmers can use them for augmenting crop production.
- c) Introduction of the high yielding varieties of seeds was the most important step in the late 1960s to increase agricultural production in India.
- d) Promotion of farm mechanization has been an important initiative taken by the government since the period of Green Revolution during the late 1960s.

Q. 11. Give the reason for which intensive subsistence farming still flourish in India.

Answer: Intensive subsistence farming produces only food crop for sustaining the high population and domestic animals. It is characterized by small land holdings which are cultivated by the farmer and his family using simple tools and more labour. Often farming is further intensified by the use of fertilizers and artificial irrigation. This type of farming is mainly observed in areas with high population pressure on land.

One of the main reasons why intensive subsistence farming is still flourishing in India today is the existence of small land holdings and a lack of alternative sources of

livelihood. In rural backward areas, owing to 'right of inheritance', land holdings have reduced in size with the subsequent division in the later generations. Farmers tend to utilize these small plots for the maximum output which has led to intensive farming where the yield per unit area is high.

Q. 12. Give a brief discussion on pulses cultivation in India.

Answer: Pulses form an integral part of the diet in the Indian subcontinent. Not only is India the leading producer of pulses in the world, but it is also the biggest consumer. Pulses are leguminous in nature and enrich soil fertility by fixing nitrogen in the soil. This makes it suitable for mixed cropping systems or as a part of crop rotation. A major variety of pulses grown in India include tur (arhar), urad, moong, masoor, peas, and Bengal gram. They are mostly grown during the latter half of the rabi season as they need less moisture. Major pulse producing states in India are Madhya Pradesh, Uttar Pradesh, Rajasthan, Maharashtra, and Karnataka.

Q. 13. Name three food crops other than grains with respective climate condition required for them.

Answer: Any crop grown for food, either commercially or for individual use is called food crop. Grains like rice and wheat form an integral part of food crops. But there are other grains known as coarse grains like jowar, bajra, ragi (collectively called millets), maize and barley that also fall under the category of food crops. Following parts describe the climatic conditions required for the growth of jowar, bajra, and maize.

a) Jowar – It is grown both as a Kharif and rabi crop and is the main food grain in the semi-arid and arid regions of central and southern India. Although it is mostly grown in areas with which are moist and hardly needs irrigation, it is a hardy drought-resistant crop.

b) Bajra – Similar to jowar, bajra also grows well in dry and warm climate.

c) Maize – This is a Kharif crop and grown under semi-arid conditions with a temperature range of 21°C to 27°C.

Q. 14. Write the difference between the cultivation of two important beverages, tea and coffee.

Answer:

Difference in cultivation of two important beverages		
Factors	Tea	Coffee
Climate	Tropical and sub-tropical climate required. 21°C to 29°C is ideal for the production of tea. The high temperature is required in summer. The lowest temperature for the growth of tea is 16°C. 150-250 cm of rainfall is required for tea cultivation.	Coffee is grown on the tropical highlands. It requires a temperature between 16 degrees C and 28 degrees C, all year round. It is sensitive to cold and frost. Direct sunrays are injurious to the plant; it is often grown in the shades of other trees. The coffee plant needs rainfall ranging between 125 cm and 200 cm. The rainfall should be well distributed throughout the year.
Soil	Tea shrubs require fertile mountain soil mixed with lime and iron. The soil should be rich in humus.	The coffee plant needs deep loamy soil formed from weathered lava. Coffee soils in India belong to red and lateritic soils. They are rich in iron and organic matter.
Landform	Tea is grown favourably on well-drained gently rolling plain lands, low plateau areas, and hill-slopes.	Hill slopes and plateau areas are favourable for coffee cultivation.
Demand	Tea is the most popular beverage in India leading to high internal demand.	Coffee is the second most popular beverage in India, and it also has a relatively higher price.
Labour	Tea is one of the most labour-intensive types of cultivation requiring an abundant supply of cheap and skilled labour.	Coffee is also labor-intensive cultivation, but its requirements are much less than that of tea.
Areas of production	Major tea-producing states are Assam, hills of Darjeeling and Jalpaiguri districts, West Bengal, Tamil Nadu, and Kerala. Apart from these, Himachal Pradesh, Uttarakhand, Meghalaya, Andhra Pradesh and Tripura are also tea-producing states in the country.	Coffee cultivation is confined to the Nilgiri in Karnataka, Kerala and Tamil Nadu.

Q. 15. Discuss the condition required for the cultivation of wheat.

Answer: Wheat is the second most important food crop in India after rice. It is the staple food crop in the northern, north-western and western regions of India. The following are the favourable conditions required for wheat cultivation –

a) Climate – Wheat is cultivated mainly as a winter crop in India. It requires a cool growing season and bright sunshine during the ripening stage. Unlike rice, excessive moisture is injurious to the crop, and it requires an annual rainfall of 50 -75 cm that should be evenly distributed. Irrigation is necessary if the rainfall goes below the stated amount.

b) Soil – Alluvial soil is highly suitable for wheat cultivation, but it should be well drained.

c) Landform – Gently rolling plain lands suitable for use by heavy machinery like tractors are ideal for wheat cultivation.

d) Demand – High demand has led to an increase in wheat production and areas in north India cultivate it as a commercial crop.

e) Technology – Due to high demand, wheat cultivation has been mechanized with the use of agricultural machinery. Green Revolution has also contributed to an increase in wheat cultivation.-

Q. 16. What are the reasons in Western India where rice is cultivated? Why is it cultivated in these regions?

Answer: Rice is the most important food crop in India and is a staple diet for the north-eastern, eastern and southern parts of India. Rice farming is mainly found as intensive subsistence type of farming due to high demand. Intensive subsistence farming produces only food crop for sustaining the high population and domestic animals. It is characterized by small land holdings which are cultivated by the farmer and his family using simple tools and more labour. Often farming is further intensified by the use of fertilizers and artificial irrigation. This has led to a low yield rate in rice production. A combination of high demand and low yield rates in traditional rice-growing areas have led to rice cultivation in non -traditional areas like western India.

Western India has states like Punjab and Haryana which is well known for their wheat production. Though characterized by a semi-arid climate, these areas have very high access to irrigation, and their land holdings are also comparatively larger. Successful implementation during the Green Revolution has also changed the entire agricultural process in these areas. These areas have wheat as their staple diet, and hence the demand for rice is not as high as the regions where rice is the staple diet. All the above-mentioned factors have contributed behind the cultivation of rice in the western regions of India. While the primary rice-growing regions of India cultivate it for subsistence, the western region cultivates it on a commercial basis and helps in reducing the demand-supply gap for rice.

Q. 17. Describe horticulture as important activity in India.

Answer: The cultivation, processing, and sale of fruits, nuts, vegetables, ornamental plants, and flowers as well as many additional services is called horticulture. The

horticulture sector includes a wide variety of crops such as fruits, vegetables, spices, plantation crops, floriculture, medicinal and aromatic plants, cashew etc. The diversity of physiographic, climatic and soil characteristics enable India to grow a large variety of horticultural crops. In 2014 India was the second largest producer of fruits and vegetables in the world after China.

1. India grows both tropical and temperate fruits. Some of the fruits produced in India are – Mangoes of Maharashtra, Andhra Pradesh, Telangana, Uttar Pradesh and West Bengal, oranges of Nagpur and Cherrapunjee (Meghalaya), bananas of Kerala, Mizoram, Maharashtra and Tamil Nadu, etc.
2. India produces about 13 per cent of the world's vegetables. It is an important producer of a pea, cauliflower, onion, cabbage, tomato, brinjal, and potato.
3. Besides the above-mentioned fruits and vegetables, India also grows a variety of spices which not only have a high internal demand but an increasing export demand. Coconut and cashew are two other important horticultural crops that India is a leading producer of.
4. India is the largest producer of coconut in the world with the distinction of having the highest productivity with the southern states accounting for more than 80 per cent of coconut nuts production.
5. India occupies a premier position in cashew-nut production, contributing about 43 per cent of the world production and is also the largest exporter of cashew-nut in the world.

Horticultural is thus an important agricultural activity in India. Owing to the higher demand and export requirements, it is not only responsible for income generation but also for creating more employment opportunities. It also acts as a practical alternative for areas with low productivity of traditional crops.

Q. 18. What are the obstacles in ensuring food security in India?

Answer: India's food security policy has a primary objective to ensure the availability of food grains to the common people. The government of India has tried to combat food insecurity through a carefully designed food security system which includes the creation of buffer stock and a public distribution system. In spite of these efforts, there are several obstacles that create problems for ensuring food security in India.

The Food Corporation of India (FCI) procures food grains from the farmers at the government announced minimum support price (MSP). The government used to provide subsidies on agriculture inputs such as fertilizers, power, and water. These subsidies have now reached unsustainable levels and have also led to large-scale inefficiencies in the use of these scarce inputs.

1. Excessive and imprudent use of fertilizers and water has led to waterlogging, salinity and depletion of essential micronutrients in the soil.

2. The high MSP, subsidies in input and committed FCI purchases have distorted the cropping pattern. Wheat and paddy crops are being grown more for the MSP they get. Punjab and Haryana are foremost examples. This has also created a serious imbalance in inter-crop parities.

3. The public distribution system which ensures the availability of food grains to the poor also doesn't work as it is intended. The issue price is different for those below the poverty line (BPL) and those above the poverty line (APL). But the categorization being imperfect has led to the exclusion of a number of deserving poor people from having access to subsidized food grains.

4. It is also difficult to maintain the categorization as often the failure of one crop can make an APL family fall below the poverty line.

These issues need to be urgently addressed if India wants to gain food security for its population.

Q. 19. Discuss the challenges now agricultural sector face in India?

Answer: India is predominantly an agricultural country. Different forms of agriculture are practiced in the country which depends upon a variety of physical, environmental and socio-economic conditions. The major challenges faced by the agricultural sector in India varies according to agro-ecological and historical experiences of its different regions making them region specific. Yet there are certain problems which are common and range from physical constraints to institutional hindrances. The following are the major challenges in the agricultural sector in India –

a) Environmental factors – Indian agriculture is largely dependent on monsoon. Climatic uncertainties like droughts and floods readily result in crop failure and production fluctuations. Soil erosion in various parts of India has caused loss of valuable agricultural land.

b) Economical factors – Dearth of capital is a perennial problem for Indian agriculture. Majority of Indian farmers have uneconomic farm sizes which result in subsistence level of production. The inputs of modern agriculture are also very expensive. This has led to small and marginal farmers avail loans from various institutions and money lenders. With poor loan repayment capacity, they are stuck in a vicious cycle of poverty. Along with a dearth in the capital, exploitative type of land tenure system is also practiced in India. Lack of proper implementation of land reform programmes in many areas has caused inequality in the distribution pattern of land and has resulted in poor productivity and agricultural backwardness. Increasing pressure of population on a fixed amount of agricultural land has also caused fragmentation of holdings and low productivity.

c) Social factors – Wasteful agricultural practices like shifting cultivation destroy the functional capability of agricultural land. Traditional techniques also affect agricultural productivity in India. Also, there is massive underemployment in the agricultural sector. Economically viable work is unavailable in the rural areas beyond the cropping season.

The government has undertaken various programmes to correct or combat these problems and if implemented properly will help in addressing the above issues.

Q. 20. What are the institutional reforms initiated by the government in agricultural sectors? Explain their method.

Answer: Continued efforts have been made to develop agriculture in the country since independence. The institutional reforms consist of various measures taken by the Central and State government from time to time. The following are the various institutional reforms initiated by the government in India.

a) Land Reform - The first Five Year Plan (1951 -1956) strongly supported agricultural production, and its main focus was 'land reforms' through the abolition of the zamindari system, ceiling on land holdings and consolidation of fragmented land holdings. But the progress of land reform is generally unsatisfactory in many states.

b) Crop Insurance Scheme - Indian agriculture is largely dependent on monsoon. Climatic uncertainties like droughts and floods readily result in crop failure and production fluctuations. To combat this uncertainty, the government provides insurance coverage and financial support to farmers.

c) Establishment of Cooperative societies and Grameen Banks – These institutions provide loans to farmers for at low interest and also encourages the adoption of more modern farming methods. They also help stabilize farms during disaster years.

d) Government support - Kissan Credit Card (KCC), Personal Accident Insurance Scheme (PAIS) are some other schemes introduced by the Government of India for the benefit of the farmers.

Establishment of Indian Council of Agricultural Research (ICAR), agricultural universities, veterinary services, and animal breeding centres, horticulture development, research and development in the field of meteorology and weather forecasting etc. have also been carried out by the government to develop agriculture in the country.

Q. 21. Briefly discuss the methods of cultivation practised in India with at least two examples on each method.

Answer: India is predominantly an agricultural country. Different forms of agriculture are practiced in the country which depends upon a variety of physical, environmental and socio-economic conditions. The following systems are practiced at present in different parts of India –

a) Primitive subsistence farming - One type of agriculture that is practiced in the country is primitive subsistence farming and is one of the oldest methods used for growing and harvesting crops. The tools like a hoe, do and digging sticks that are used are also primitive in nature. It is mostly observed in less economically developed areas where population density is high.

b) Intensive subsistence farming - Intensive subsistence farming produces only food crop for sustaining the high population and domestic animals. It is characterized by small land holdings which are cultivated by the farmer and his family using simple tools and more labour. Often farming is further intensified by the use of fertilizers and artificial irrigation. This has led to regions where the yield per unit area is high. Rice cultivation in the eastern regions of India is a type of intensive subsistence farming as they are cultivated on small plots of land, with high manual labour. Graduated terrace steps in the hilly regions of India used for agriculture is another example of this type of farming.

c) Commercial farming – This is a form of market-oriented and profit motivated farming. In this farming, consumption of the cultivated products by the farmers, if at all done, is an insignificant proportion of the total production. Demand patterns and price structure are the major determinants of production pattern. Rice cultivation in Punjab and Haryana where wheat forms the staple diet is an example of commercial farming. Cultivation of a single crop on a large scale with an organization similar to industrial production is called plantation agriculture which is a type of commercial farming. In India, tea, coffee, rubber, sugarcane, banana, etc., are important plantation crops.

Q. 22. How is rubber important for the Indian economy? What conditions are required for its cultivation? Name two states where it is produced.

Answer: Rubber plays a crucial role in the Indian economy. It provides the principal raw material for manufacturing over 35000 varieties of products ranging from toy balloons to giant size tires. It provides employment to a sizeable population in its agricultural sector, and a sizeable number makes their living from processing, transporting and marketing rubber goods. Rubber plantations thus contribute substantially to economic prosperity in rubber growing areas. The Indian rubber goods manufacturing industry heavily depends on natural rubber which accounts for 80% of the total raw material.

The conditions that are required for rubber cultivation are as follows –

a) Climate – It grows well in hot and humid climates with the long dry season being unfavourable for its cultivation.

b) Soil – Loamy soils are favoured for rubber cultivation.

c) Landform – Gently rolling plain lands free from waterlogging that is below an altitude of 400 meters is ideal for rubber cultivation.

d) Demand – Presence of a ready market is a major factor for the rapid growth of natural rubber production in the country.

e) Labour – The cultivation is not labour intensive.

f) Capital – a High investment of capital is necessary due to preparation, maintenance and a long gestation period of rubber plants.

Two important states for rubber plantation include Kerala and Tamil Nadu. Kerala accounts for most of the rubber plantations in India and major districts include Kottayam, Quilon, and Kozhikode.