



Government of Tamilnadu

Department of Employment and Training

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AGRICULTURE

Agriculture is the process of producing food for people, fodder for cattle, fiber and many other desired products by the cultivation of certain plants and the raising of domesticated animals (livestock). Though India is industrially a fast developing nation, still the agriculture in India employs more than 50 percent of the population of the country and accounts for about 25 percent of the national income.

Determinants of Agriculture:

Agriculture in India is determined by a set of factors. Some of the important factors:

1. Physical factors: relief, climate and soil.
2. Institutional factors: Size of farm holdings, land tenure, and land reforms.
3. Infrastructural factors: Irrigation, power, transport, credit, market, insurance and storage facilities.
4. Technological factors: High yielding varieties of seeds, chemical fertilisers, insecticides and machinery.

Types of Farming

Owing to variations in the physical environment and culture, a variety of farming practices and cultivation systems have evolved in different parts of India.

a) Subsistence Farming

- A considerable proportion of farmers in the country practice subsistence farming. In this, agricultural land holding is small. As the farmers are poor, they can't apply the modern inputs which cost more. They grow crops with the help of family members and consumes almost the entire farm produce with little surplus to sell in the market.
- Preference is given to food crops. In addition to the food crops, sugarcane, oilseeds, cotton, jute and tobacco are also cultivated. Traditional farming method results in low productivity. In Punjab, some parts of Rajasthan, Uttar Pradesh and Madhya Pradesh subsistence farming is practiced.

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b) Shifting Agriculture

This type of agriculture is performed by tribal people in a piece of forest land after clearing the trees through felling and burning the trunks and branches. Once the land is cleared, crops are grown for two to three years and the land will get abandoned as the fertility of the soil decreases. The farmers then move to new areas and the process will be repeated. They cultivate some grains and vegetable crops using the manual labour. It is also called as “Slash and burn” cultivation.

Name	Place
Jhum	Assam
Poonam	Kerela
Podu	Andhra Pradesh, Odisha
Beewar, Mashan, Penda, Beera	Various Parts of Madhya Pradesh

c) Intensive Farming

1. Intensive farming is an agricultural intensification and mechanization system that aims to maximize yields from available land through various means, such as heavy use of pesticides and chemical fertilizers.
2. This intensification and mechanization has also been applied to the raising of livestock with billions of animals, such as cows, pigs and chickens, being held indoors. They have become known as factory farms. Intensive farming is practiced in Punjab, parts of Rajasthan, Uttar Pradesh, and Madhya Pradesh in India.

d) Dry Farming

This type of farming is practiced in arid areas where irrigation facilities are lacking. Crops cultivated in these areas can withstand dry conditions. The crops grown generally with the help of irrigation are also grown under dry farming. In such circumstances, the yields are generally low. Most of the areas under dry cultivation entertain only one crop per year. This is practiced in drier parts of Rajasthan, Gujarat, Madhya Pradesh etc.

e) Mixed Farming Agriculture

Mixed farming is defined as a system of farm which includes crop production, raising livestock, poultry, fisheries, bee keeping etc. to sustain and satisfy as many needs of the farmer as possible.

f) Terrace Cultivation

- This type of cultivation is practiced specially in hilly areas, where lands are of sloping nature. The hill and mountain slopes are cut to form terraces and the land is used in the same way as in permanent agriculture.
- Since the availability of flat land is limited, terraces are made to provide small patches of level land. Soil erosion is also checked due to terrace formation on hill slopes. In our country, terrace cultivation takes place in the states of Punjab, Meghalaya, Haryana, Uttar Pradesh, Himachal Pradesh, and Uttarakhand.

CROPPING SEASONS IN INDIA

Cropping Seasons	Northern States Major Crops	Southern States Major Crops
Kharif Season June–September	Rice, Cotton, Bajra, Maize, Jowar, Tur	Rice, Ragi, Maize, Jowar, Groundnut
Rabi Season October–March	Wheat, Gram, Rapeseeds, Mustard, Barley	Rice, Maize, Ragi, Groundnut, Jowar
Zaid Season April–June	Vegetables, Fruits, Fodder	Rice, Vegetables, Fodder

Tamil Nadu Agriculture:

Agriculture is the prime and traditional occupation for the people of Tamilnadu. The practice of growing plants on a large scale for food and other purposes is known as agriculture. Agriculture includes not only cultivation of crops, but also rearing of animals, birds, forestry, fisheries, and other related activities. About 56% of the people of Tamil Nadu are farmers. Agricultural sector supplies food and fodder to the people and cattle, respectively. It is the source of raw material for many of the industries.

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Most farmers in Tamil Nadu practice subsistence intensive farming. With the availability of water for cultivation, farming methods are classified into three types, namely:

1. Wet farming;
2. Dry farming (maanavari); and
3. Irrigation farming.

Irrigation farming

- Irrigation farming is the practice of growing crops with supply of water through various sources of irrigation like wells, lakes, and canals. Rice, cotton and sugarcane are grown with irrigation farming in most part of Tamil Nadu.
- Most of the farmers in Tamil Nadu practice subsistence intensive and irrigation farming. As the water requirement for each crop varies, irrigation plays a major role in the agriculture development of Tamil Nadu. Plantation farming
- Plantation farming is yet another type of farming where crops are grown on large farms or estates. Plants like Tea, coffee, rubber and pepper are grown as plantation crops on the hill slopes of Tamil Nadu.

Mixed farming

- Mixed farming is one where land is allotted for more than one activity along with agriculture. The farmer grows two or three varieties of crops along with cattle rearing, poultry and fishing on a large land holding. This method is profitable to the farmer as it provides regular and continuous income. This type of prevalent in the Kaveri delta region.
- Market gardening includes horticulture and floriculture, (growing fruits, vegetables and flowers) in large scale for supply to the urban markets and also for export purposes. Districts such as Madurai, Nilgiris, Thiruvallur and Kancheepuram practice this type of farming.

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Cropping Seasons of Tamil Nadu:

Farmers select particular crops to be cultivated in a season, to suit soil and availability of water in that season. Thus most farmers in Tamil Nadu cultivate crops in three different seasons as given below:

Sornavari (Kharif season) (Chitthirai pattam)

Sornavarai is otherwise known as Kharif season. The seeds are sown during May and harvested in October as the month of May coincides with the Tamil month, Chitthirai it is also known as Chitthirai pattam.

Samba (Summer season) (Adipattam)

Samba is otherwise known as summer season. The seeds are sown in the month of July which coincides with the month Tamil month of Aadi and harvested in January. This season is referred to as Adipattam in Tamil Nadu.

Navarai (Winter Season-Rabi) (Karthigai pattam)

The seeds are sown in the month of November and harvested in March. This season is known as Karthigai pattam in Tamil Nadu as the Tamil month Karthikgai coincides with the month of November.

Major Crops Cultivated in India:

The major crops of India are divided into four major categories as follows:

1. Food crops (wheat, maize, rice, millets, pulses etc.).
2. Cash crops (sugarcane, tobacco, cotton, jute, oilseeds etc.).
3. Plantation crops (tea, coffee and rubber).
4. Horticulture crops (fruits, flowers and vegetables).

1. Food Crops

Due to its large population, Indian agriculture is largely dominated by the food crops. Food crops include cereals and pulses, amongst which rice, wheat, jowar, bajra, maize, barley, ragi, gram and tur are important.

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Rice: Rice is an indigenous crop. India is the second largest producer of rice in the world after China. It is mainly a tropical crop, growing mainly with mean temperatures of 24°C and annual rainfall of 150 cm. Deep fertile clayey or loamy soils are suited well for rice cultivation. It also needs abundant supply of cheap labour.

Rice in India is sown in three ways:

1. Broadcasting,
2. Ploughing or drilling, and
3. Transplanting.

Due to increased use of High Yielding Variety (HYV) seeds (CR Dhan 205, AR Dhan 306, CRR 451 etc.), many of the indigenous varieties were disappeared. In 2016, the first 10 leading rice producing states are West Bengal (First in India) Uttar Pradesh, Punjab, Tamil Nadu, Andhra Pradesh, Bihar, Chhattisgarh, Odisha, Assam, and Haryana.

Wheat:

- Wheat is the second most important food crop of the country, after rice. It accounts for 22 percent of the total area and 34 percent of the total production of food grains in the country. It requires 10-15°C at the time of sowing and 20-25°C at the time of ripening of grains.
- Over 85% of the India's wheat production comes from 5 states namely Uttar Pradesh, Punjab, Haryana, Rajasthan and Madhya Pradesh. Apart from these regions, the black soil tract of the Deccan covering parts of Maharashtra and Gujarat also contribute a major wheat production.

Jowar:

- Jowar is the third important food crop of our country. It is an indigenous plant of Africa. The plant has a tendency to grow in adverse climatic conditions. Its grains are rich in carbohydrates, protein, minerals, and vitamins. Hence, it provides cheap food to the large section of the poor population.

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- It is also used as fodder in many parts of the country. Jowar is essentially a crop of the Peninsular India. Maharashtra, Karnataka, and Madhya Pradesh are the leading producers of Jowar.

Bajra:

Bajra is an indigenous plant of Africa. This forms the staple food for poor people. Its stalks are used as fodder for cattle and for thatching purposes. Bajra is a crop of dry region. Rajasthan is the largest producer of bajra followed by Uttar Pradesh, Haryana, Gujarat and Maharashtra.

Barley:

Barley is one of the important cereals of our country. Besides, being poor man's diet, it is used for making barley water, beer and whiskey. Rajasthan and Uttar Pradesh are the two leading producers of Barley.

Pulses:

Pulses include a large number of crops which are mostly leguminous and rich in vegetable protein. They are used as human food and feeding cattle. They fix atmospheric nitrogen in the soil and hence are usually rotated with other crops. India is the largest producer of pulses. The major pulse growing areas are Madhya Pradesh, Uttar Pradesh, Rajasthan, Maharashtra and Andhra Pradesh.

Cash Crops

The crops which are cultivated for commercial purpose are called cash crops. These crops include sugarcane, tobacco, fibre crops (cotton, jute, and mesta) and oilseeds.

Sugarcane:

Sugarcane is the most important cash crop of India and is the second largest producer in the world. This crop provides raw material for the sugar industry which is

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the second largest industrial category of our country. Besides providing sugar, gur and khandsari, it supplies molasses for alcohol industry and bagasse for paper industry. India is ranked third in sugar production in the world after Cuba and Brazil. At the state level, Uttar Pradesh is the leading producer of sugarcane followed by Maharashtra, Karnataka, Tamil Nadu and Gujarat.

Cotton:

Cotton is the most important cash crop of India. It provides raw material to the largest industry of India. India ranks second next to China in the production of cotton. About 79% of the total area and production in the country were contributed by four states viz., Gujarat, Maharashtra, Andhra Pradesh and Punjab.

Jute:

It is a tropical fiber crops, grows well in the alluvial soil. It provides raw material for Jute industry. It is used for manufacturing of gunny bags, carpets, hessian, ropes and strings, rugs, clothes, tarpaulins, upholstery etc. West Bengal is the leading state both in cultivation and production of jute. The other cultivators of jute are Bihar, Assam and Meghalaya.

Oil Seeds:

- Oil seeds, the premier source of fat in the Indian diet are derived from number of crops like groundnut, rapeseed, mustard, sesame, linseed, sunflower, castor seed, cotton seed, niger seed etc.
- These provide oil and oilcake which are used for making lubricants, varnish, medicine, perfume, candles, soaps, manure and cattle feed.
- Gujarat is India's largest oilseeds producing state. Other major producer of oilseeds are followed by Rajasthan, Madhya Pradesh, Maharashtra and Andhra Pradesh.
- In groundnut production, India is the second largest producer in the world after China.

3. Plantation Crops

Plantation crops are cultivated for the purpose of exports. These are cultivated in large estates on hilly slopes. Cultivation near the coast is preferable as it facilitates exports. Tea, coffee, rubber and spices are the major plantation crops of India.

Tea:

Tea is an evergreen plant that mainly grows in tropical and subtropical climates. Tea is a labour intensive and grows faster under light shade. Tea plants require high rainfall but its root cannot tolerate water logging. Two major varieties of tea are cultivated in India.

They are i) **Bohea** originated from China and
 ii) **Assamica** from India.

A number of hybrid varieties have been developed by mixing these two. India is the second largest producer of tea after China in the world. Assam is the larger producer of tea in India. Other states are Tamil Nadu, Kerala and West Bengal.

Coffee:

Coffee is grown in shade and it grows effectively in the altitudes between 1,000 and 1,500 m above mean sea level. There are two main varieties of coffee. They are

1. **Arabica** (High quality-cultivated more in India) and
2. **Robusta** (Inferior quality). India is the 7th largest producer of coffee globally. Karnataka is the leading producer of coffee in India.

It produces 71% in India, and 2.5 % in the world (source; coffee board of India-2018)

Rubber:

- Rubber plantation were first established in Kerala in 1902. It needs hot and wet climatic conditions (temperature above 20°C and rainfall above 300cm). Most of the land under rubber belongs to small land holders.
- The major rubber growing areas are Tamil Nadu, Kerala, Karnataka and Andaman and Nicobar Islands.



Spices:

India has been world famous for its spices since ancient times. These spices mostly used for flavouring or tampering cooked food and for preparing medicines, dyes etc. Pepper, chillies, turmeric, ginger, cardamom, clove and areca nut are the major spices cultivated in India. Kerala is the leading producer of spices in India.

Horticulture Crops

- It refers to the cultivation of fruits, flowers and vegetables. Fruits and vegetables are important supplement to the human diet, as they provide essential minerals, vitamins, and fibres required for maintaining health. India is in the second position in the production of fruits and vegetables.
- Apple is mostly produced in Himachal Pradesh, Jammu and Kashmir and Uttarakhand. Production of banana is concentrated in Tamil Nadu and Maharashtra. Orange is cultivated in Maharashtra, Uttarakhand, Himachal Pradesh, Jammu and Kashmir, Tamil Nadu and Karnataka.
- Grape is cultivated mainly in Uttarakhand, Himachal Pradesh, Jammu and Kashmir, Maharashtra, Andhra Pradesh, Tamil Nadu and Karnataka. India contributes about 13% of the world's production of vegetables.

Distribution of crops in Tamil Nadu

Each crop requires specific climatic conditions for its growth. Tamil Nadu lies entirely in the tropical zone and therefore almost all tropical crops are grown here.

Food crops

- Food crops include cereals, pulses, and millets. Among the food crops (cereals), paddy is the prime crop cultivated in all the districts of Tamil Nadu. Rice (Paddy) requires level land, high temperature and continuous supply of water for its growth. Ponni and Kichadi Samba are major varieties of paddy grown in Tamil Nadu. Jaya, IR 50 are high yielding varieties grown in Tamil Nadu.
- Among the districts Thanjavur, Thiruvarur and Nagapattinam have maximum acreage as well as production of rice.

- Thus Kaveri delta (especially the undivided Thanjavur district) is known as the Granary of south India. Normally Paddy is being raised in Thanjavur district in four seasons for one agricultural year.
- Pulses grown in Tamil Nadu are Bengal gram, red gram, green gram, black gram and horse gram. Coimbatore leads in the production of Bengal gram, whereas Vellore and Krishnagiri produce red gram. The districts of Thiruvavur, Nagapattinam and Toothuthukudi stand first in production of green gram. Nagapattinam, Thiruvavur and Cuddalore are noted for black gram production.
- Horse gram cultivation is widely seen in Krishnagiri and Dharmapuri districts.
- Millets are dry crops cultivated in areas having high temperature and less rainfall.

Non-food crops Fibre crops

Fibre crops include cotton and jute. Cotton thrives well in black soil and it is the major fibre crop of Tamil Nadu cultivated on large scale in the districts of Coimbatore, Thirunelveli, Cuddalore and Villupuram. Mcu4, Mcu5, LRA5166 are the major varieties of cotton cultivated in the state.

Commercial crops

- Commercial crops include all those crops that are cultivated by the farmer is to sell and not for their own consumption. Sugarcane, tobacco, oilseeds and spices like chillies, turmeric and coriander are examples of commercial crops.
- Sugarcane is the dominant commercial crop cultivated in Tamil Nadu. It is a nine-month crop which requires fertile soil, high temperature, and stagnant water till the time of flowering. Coimbatore, Karur, Villupuram, Thiruvallur and Cuddalore district show predominance of this crop. Tobacco is yet another commercial crop of Tamil Nadu which is widely grown in Dindigul, Theni and Madurai district. Groundnut, sunflower, safflower (Kusumbavran) castor and linseed are the major oilseeds cultivated in Tamil Nadu.



Plantation crops

Tea, coffee, rubber, pepper and cashew are the main plantation crops of Tamil Nadu. Tamil Nadu ranks second in area and production of tea next to Assam. Tea estates are seen to be concentrated on the hill slopes of the Nilgiris and Coimbatore districts. Tamil Nadu stands second in area and production of coffee next to Karnataka. Coffee is grown in the Western Ghats as well as Eastern Ghats. Hill slopes of the Nilgiris, Theni, Madurai and Salem are the major regions of coffee cultivation. Andipatti, Sirumalai and Shervaroy hills also grow coffee. Rubber is grown in Kanyakumari district. Pepper is confined to the warm and wet slopes of Kanyakumari and Thirunelveli district of Tamil Nadu. Cashew are extensively cultivated in Cuddalore district.

Horticulture

Cultivating fruits and vegetables on large scale is a recent trend in Tamil Nadu. Fruits like mangoes, jackfruits, banana, guava and grapes are widely grown in groves. Krishnagiri leads in mango production, Coimbatore and Erode are known for banana production and Theni for grapes. Dharmapuri leads the other districts in acreage for horticulture. It also specializes in floriculture.

Irrigation:

Watering of agricultural plants through artificial means is called irrigation. Being a hot country with seasonal and irregular rainfall, it always needs irrigation to carry out agricultural activities during dry period. Beside erratic rainfall, prevalence of high temperature, cultivation of annual crops and hydrophytes, commercial farming and porous soil make irrigation an essential one for the agriculture of our country.

Sources of Irrigation

In India, different sources of irrigation are used depending upon the topography, soils, rainfall, availability of surface or groundwater, nature of river (whether perennial or non-perennial), requirements of crops etc. The main sources of irrigation used in different parts of the country are

- Canal irrigation

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- Well irrigation and
 - Tank irrigation

a) Canal Irrigation

It is the second most important source of irrigation in our country. Percentage of area under canal irrigation in our country is 24%. Canals are the effective source of irrigation in areas of low level relief, deep, fertile soils, perennial source of water and extensive command area.

The canals are of two types:

1. **Inundation Canals:** In this, water is taken out directly from the rivers without making any kind of barrage or dam. Such canals are useful for the diversion of flood water from the rivers and remain operational during rainy season.
2. **Perennial Canals:** These are developed from perennial rivers by constructing barrage to regulate the flow of water. In our country, most of the canals fall under this category. These canals are useful for irrigation.

In India the total area under canal irrigation is about 15.8 million hectares in 2014. About 60 percent of the canal irrigated area falls in the northern plains of India, particularly in Uttar Pradesh, Punjab, Haryana, Rajasthan, and Bihar. In south and central India, Andhra Pradesh, Maharashtra, Karnataka, Madhya Pradesh, Chhattisgarh, Odisha, and Tamil Nadu are the important states where canal irrigation is found.

b) Well Irrigation

A well is a hole or trough, usually vertical, excavated in the earth for bringing groundwater to the surface. Well irrigation is the most important source of irrigation as it contributes about 62 percent of net irrigated area in India. It is a cheap, dependable, and popular source of irrigation in the country. Well irrigation is unavoidable in the region of low rainfall and becomes an essential one where the canals and tank irrigation are not available. Wells are of two types: i) Open wells and ii) Tube wells

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1. **Open Wells:** This type of irrigation is widely practiced in the areas where groundwater is sufficiently available. The areas are in Ganga Plains, the deltaic region of Mahanadi, Godavari, Krishna, Cauvery and parts of Narmada and Tapi valleys.
 2. **Tube Wells:** Tube wells are developed in the areas of low water table, sufficient power supply and soft subsurface geological units. Tube wells are predominant in the states of Gujarat, Maharashtra, Punjab, Madhya Pradesh and Tamil Nadu.

c) Tank Irrigation

A tank is a natural or man-made hollow on the surface developed by constructing a small bund around it across a stream. It is used to collect and store water for irrigation and other purposes. Irrigation by tanks is a very old system in India. It also includes irrigation from lakes and ponds.

The tank irrigation is popular in the peninsular India due to the following reasons:

- The undulating relief and hard rocks make difficult to dig canals and wells.
- Natural depressions serve as reservoirs.
- Absence of perennial rivers.
- Impermeable rock structure which do not permit percolation.
- The scattered nature of population and agricultural fields.

Modern irrigation methods:

There are many ways in Modern Irrigation among them mostly practiced and following in India are using drips, sprinklers and poly houses central pivot irrigation. Drip System is used to watering like drops at near the roots of plant. It will cover a tiny area at plant, but suitable for big trees and horticulture plants too which used to grow bigger.

Rain Gun: Rain gun used to spread water like rain as in name and used to serve for crops which used to grow upto 4 feet or high also but we have to adjust sprinklers height as per crop size. Typical usage of Rain guns are in sugarcane, maize crops.

Center-pivot irrigation:

It is also called **waterwheel** and **circle irrigation**, is a method of crop irrigation in which equipment rotates around a pivot and crops are watered with sprinklers.

Multipurpose River Valley Projects

It is a scientific management of water resources in our country. Construction of dam across rivers is aimed at many purposes. Hence, it is termed as multi-purpose river valley projects. The various purposes of a dam serves are irrigation, hydro power generation, water supply for drinking and industrial purpose, controlling floods, development of fisheries, navigation etc. Generally, majority of multipurpose projects are combination of irrigation and hydro-power which are the major aims of the projects.

Name of projects	River	Benefit States	Irrigation (sq.km)	Hydropower (Megawatts)
Damodar Valley project	Damodar	Jharkhand, West Bengal	5,150	.260
Bhakra-Nangal Project (highest gravity dam in the world)	Sutlej	Punjab, Haryana and Rajasthan	52,609	1,500
Hirakud Project (longest dam in the world)	Mahanadi	Orissa	1,41,600	347.5
Kosi Project	Kosi '(Sorrow of Bihar'.)	Bihar & Nepal	8,750	19.2
Tungabhadra Project	Tungabhadra	Andhra Pradesh and Karnataka	1,968	35.
Tehri Dam:	Bhagirathi	Uttarakhand	6000	1,000 MW
Chambal Valley Project	Chambal	Rajasthan and Madhya Pradesh	-	-
Nagarjuna Sagar Project	Krishna	Andhra Pradesh		

Sardar Sarover Project	Narmada	Madhya Pradesh, Maharashtra, Rajasthan	18,450	250
Indira Gandhi Canal Project	Satlaj	Rajasthan, Punjab and Haryana	-	-
Mettur Dam	Kaveri	Tamil Nadu	-	40

Sources of Irrigation in Tamil Nadu:

The main sources of irrigation are canals, tanks and wells. Canals are man-made channels of water taken from a perennial river, dam or lake to supply water to the agricultural fields. Canal irrigation is the most prominent type in the basins of Kaveri and Thamirabarani. 27 % of irrigated land in Tamil Nadu cultivates crops using canal irrigation. Important canals of Tamil Nadu Arrakankottai canal, Thadapalli canal and Kalingarayan canal are some of the noteworthy canals on river Bhavani a tributary of River Kaveri. Canals taken from Mettur dam provide irrigation for about 2.7 lakh hectares. The Grand Anicut built across the river Kaveri near Trichirappalli, diverts the water to the entire delta region through canals River Thamirabarani and its tributaries serve Thirunelveli district with many canals. River Thamirabarani has nine anicuts from which the following channels, named as north and south Kodaimel Alagain canal; Nathiyunni canal, Kannadian canal, Kodagan canal, Palayan canal, Tirunelveli canal and Marudhur canal Apart from this, Pachaiyar has nine anaicuts and Chittar has seventeen anaicuts.

Major issues faced by farmers in India:

Indian agriculture and Indian farmers are plagued by several problems; some of them are natural and some others are manmade.

Small and fragmented land-holdings:

The problem of small and fragmented holdings is more serious in densely populated and intensively cultivated states in India. About 67 percent of operational land holdings in India are marginal holdings (< 1 hectare).

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High Costs of Inputs:

Seed is a critical and basic input for attaining higher crop yields and sustained growth in agricultural production. Unfortunately, good quality seeds are out of reach for many small and marginal farmers due to their high price.

Infertile Soil:

Indian soils have been used for growing crops over thousands of years without caring much for replenishing. This has led to depletion and exhaustion of soils resulting low productivity.

Lack of Irrigation:

Only one-third of the cropped area falls under irrigated area. To make agriculture reliable, irrigation facility has to be developed.

Lack of mechanization:

In spite of the large scale mechanization of agriculture in some parts of the country, most of the agricultural operations in larger parts are carried on by human hand using simple and conventional tools.

Soil erosion:

Large tracts of fertile land suffer from soil erosion by wind and water. Such kind of areas must be properly treated and restored to its original fertility.

Agricultural marketing:

In rural India, agricultural marketing continues in a bad shape. Due to the absence of sound marketing facility, the farmers have to depend on local traders and middlemen for the disposal of their farm products which is sold at low price. Besides, there is a fluctuation in the prices of agriculture products.

Inadequate storage facilities:

Storage facilities in the rural areas are either totally absent or grossly inadequate. Under such conditions the farmers are compelled to sell their products immediately after the harvest irrespective of the condition of market.



Inadequate transport:

One of the main handicaps with Indian agriculture is the lack of cheap and efficient means of transportation. Even at present there are lakhs of villages which are not well connected with main roads or with market centres.

Scarcity of capital:

Agriculture is an important industry which requires a huge capital. The role of capital plays a major role in the purchase of advanced farm machineries and equipment's.

List of important Agricultural	Revolutions in India
Yellow Revolution	Oil seed Production (Especially Mustard and Sunflower)
Blue Revolution	Fish Production
Brown Revolution	Leather / Cocoa / Non-Conventional Products
Golden Fibre Revolution	Jute Production
Golden Revolution	Fruits / Honey Production / Horticulture Development
Grey Revolution	Fertilizers
Pink Revolution	Onion Production / Pharmaceuticals / Prawn Production
Evergreen Revolution	Overall Production of Agriculture
Silver Revolution	Egg Production / Poultry Production
Silver Fibre Revolution	Cotton
Red Revolution	Meat Production / Tomato Production
Round Revolution	Potato
Green Revolution	Food Grains
White Revolution	Milk Production

Questions

1. What are the types of farming in India? Describe it.
2. Mention some of the food crops cultivated in India. Explain.
3. Write a detailed account on the sources of irrigation in India.
4. What are the major issues faced by farmers in India?