

Manufacturing Industries in India-Agro Based

Industrialisation in India

India is one of the top ten industrialised countries in the world. With her command over vast natural resources and huge manpower resources, she is developing at a rapid pace.

Need for Rapid Industrialisation in India

- Rapid industrialisation is required to make India self-sufficient and self-reliable for fulfilling all her needs and requirements.
- As India is predominantly an agricultural country, about one two-thirds of the population is dependent on agriculture. Since agriculture cannot support the growing population, industries need to be established to solve the problem of unemployment.
- Industries give support to agriculture. For example, agricultural implements are manufactured in industries.
- Rapid industrialisation is required to keep pace with the technological advancements which have been made in the world.
- Industries produce goods and equipment required for maintaining the defence of the country.

Factors Affecting the Location of Industries

Geographical and commercial factors affect the location of industries. Geographical factors are

- **Raw Materials:** Industries are mostly established at areas which are located close to the fields of raw materials. For example, many iron and steel industries are located near the iron and coal fields. Industries dealing with the manufacturing of perishable goods are located close to the source of raw materials. For example, sugarcane industries are located close to the sugarcane fields as the sucrose content of sugarcane starts drying up after 24 hours of its harvest.
- **Water Supply:** Industries require water while manufacturing goods. For example, water is used in textile industries for bleaching and washing purposes. Thus, many industries are located close to the sources of water.
- **Energy:** Energy is required for processing raw materials into manufactured goods. Thus, many industries are located close to the coal fields. Industries are also located in regions where energy power resources are readily and cheaply available.
- **Transport:** Transport is required for carrying raw materials to manufacturing units. It is also required for transporting finished goods to markets. Thus, many industries are located near the port cities which are also well-connected by road and rail to major towns and market cities.
- **Labour:** The availability of skilled and unskilled labour is an important factor which decides the location of industries. Thus, many industries are located at places where cheap labour is readily available.
- **Proximity to Markets:** Industries require markets to sell off their finished goods. For example, heavy industries are located in an industrial area as their products are required by other small industries.
- **Climate:** It plays an important role in determining the location of agro-based industries. For example, many cotton textile mills are located in Mumbai and Gujarat as it has a favourable climate which is required for storing and manufacturing cotton yarn.

Commercial factors deciding the location of industries are

- **Policies of the Government:** The policies of the government play an important role in deciding the location of industries. The government makes rules and regulations for the supply of water and electricity. Further, it formulates policies for protecting and encouraging indigenous industries.
- **Capital:** Many industries are located in the big cities where most financiers and investors are present. Thus, many big cities are also major industrial centres.
- **Organisational Skills:** Organisational skills and technical knowledge are required for running any industry. As a result, we find that many industries are located near educational and management institutes to hire skilled people.

Classification of Industries

Industries	Classification on the basis of	Examples
Agro-based: Use agricultural products as raw materials Mineral-based: Use minerals as raw materials Forest-based: Use forest products as raw materials Animal-based: Use raw materials provided by animals	Raw materials	Agro-based: Cotton textiles and tea industry Mineral-based: Iron and steel industry Forest-based: Wood industry Animal-based: Silk and woollen industry
Heavy industries: Manufacture heavy and bulky goods Light industries: Produce lightweight goods	Nature of product	Heavy industries: Iron and steel industry Light industries: Bottle industries
Large-scale industries: Has huge infrastructure and requires large capital investments Medium-scale industries: Are neither big nor small Small-scale industries: Are small and have only small capital investments	Size and investments	Large-scale industries: Iron and steel Industry Medium-scale industries: Paper mills Small-scale industries: Weaving industry
Public sector industries: Owned by the government Private sector industries: Owned by individuals Joint sector industries: Owned and managed by both government and private individuals Cooperative sector industries: Owned by producers and distributors collectively	Ownership	Public sector industries: IOC and SAIL Private sector industries: Reliance and Wipro Cooperative sector industries: Maruti Suzuki and Exide Industries Joint sector industries: AMUL and IFFCO

Distribution of Industrial Regions

Major industrial belts in India are

- a. **The Hooghly Belt:** This industrial belt has many jute textiles, cotton textiles, chemicals, engineering, paper, leather industries etc. Kolkata is a major city in this belt. Proximity to the coal and iron ore mines of Jharkhand and Bihar, cheap labour, freshwater of River Hooghly has made this an important industrial belt of the region.
- b. **The Mumbai–Pune Belt:** Cotton textile mills, oil refineries, chemical and fertiliser industries etc. are located in this belt. Development of hydroelectricity in the Sahyadris and the availability of cheap labour from Gujarat and Maharashtra have made this an important industrial belt. Further, the port of Mumbai facilitates the transport facilities in and out of the region.
- c. **The Ahmedabad–Vadodara Region:** Ahmedabad has emerged as a major centre of cotton textile industries. This region has many industries such as chemical and fertiliser industries, plastics industries and engineering industries for goods and services. Availability of skilled and unskilled labour has made it an important industrial region.
- d. **The Chennai–Coimbatore–Bengaluru Region:** Cheap and skilled labour, availability of cotton and large markets have made this region an important industrial belt. Chennai, Coimbatore and Madurai are important centres of the belt.
- e. **The Chotanagpur Plateau Region:** This region covers parts of West Bengal and Jharkhand. This region is rich in minerals such as iron ore, coal, manganese, bauxite and mica. Jamshedpur, Bokaro and Durgapur are some important centres of steel production. Asansol, Ranchi and Dhanbad are some important centres of metallurgy and heavy industries. Because of the presence of rich deposits in this region, many industries are located here.
- f. **The Mathura–Delhi–Saharanpur–Ambala Region:** Two separate belts between Faridabad and Ambala in Haryana and Mathura and Saharanpur in Uttar Pradesh merge in and around Delhi. The region has cotton textile, glass industry, chemicals and fertilisers, sugar and engineering industries. Cheap availability of raw materials, good transport system and large markets have led to the establishment of many industries in the region.

Agro-Based Industries

The sugar industry is the second largest organised industry next to cotton textile industries. Sugarcane is a cash crop.

Products of sugarcane industries are sugar, gur and khandsari. Its by-products are

- **Molasses:** It is obtained during the process of manufacturing sugar. It is used in the alcohol industry for the distillation of liquor and for producing certain chemicals and synthetic rubber.
- **Bagasse:** It is the leftover cane. It is used for producing steam which is a source of power for the sugarcane industry and is used for making wax, carbon paper and shoe polish.
- **Press mud** is used for making wax, carbon paper and shoe polish.

Distribution of Sugar Industries

- As Maharashtra is the leading producer of sugar in India, the state has 119 sugar mills. Most of the mills are large.
- Uttar Pradesh is the second largest producer of sugarcane in India. Sugarcane factories are located in two belts—the Ganga Yamuna Doab (Saharanpur, Meerut, Budaun and Ghaziabad) and the Terai belt (Basti, Gonda, Gorakhpur etc).

- Other northern Indian states where sugar mills are located are Punjab, Haryana, Madhya Pradesh and Gujarat.
- Peninsular India has emerged as a leading producer of sugar in India. Tamil Nadu has become the leading producer of sugar in the region because of higher per hectare yield of sugarcane, higher sucrose content and long crushing season.
- Sugar factories are also located in Andhra Pradesh (Hyderabad, Vijayawada, Chittoor etc.) and Karnataka (Belgaum, Bellary, Bijapur etc.).

Sugar Industries have Shifted to the South because

- The climate of South India is free from the effects of summer loo and winter frost which are suitable for growing superior varieties of sugarcane. The production period is also long.
- Black soil is more fertile than the alluvial soil of north India. The sugarcane here is of superior quality with higher yield.
- The excellent transport facilities in Maharashtra and Tamil Nadu have resulted in an increased number of sugarcane mills in these regions.
- The sugarcane farmers in South India have bigger area and are managed by cooperative societies.

Problems Faced by Sugarcane Industries

- Growth of poor quality of sugarcane with low sucrose content.
- High cost of production because of low yield and short crushing season.
- As maximum sugarcane is harvested at the same time, there is pressure on industries during the harvest time.
- The supply of raw materials to sugar industries is irregular as no plantation industry exists around the factories.
- Old and obsolete machinery is used in the sugar industry which has not been replaced by new machinery and modern technology.

Cotton Textile Industries

India is the third largest cotton textile manufacturing country in the world after USA and UK. It is also the third largest exporter of cotton textiles. Nearly 40% of the country's labour force is supported by this major industry.

Many cotton textile industries are located in Maharashtra, Gujarat and Tamil Nadu. They produce three-fourths of the total output of yarn. The remaining one-fourth is produced by West Bengal, Uttar Pradesh, Madhya Pradesh, Rajasthan, Andhra Pradesh and Karnataka.

The cotton textile industry is located in almost all the Indian states. About half of the total cotton mills are located in Mumbai and Ahmedabad. Mumbai is known as the 'cottonpolis' of India as it is the most important centre of cotton production. Mumbai and Ahmedabad have emerged as the most important manufacturing centres because of the following reasons:

- Both cities are located close to the cotton-growing areas of the Deccan Plateau.
- Humid coastal climate have favoured the establishment in industries in both cities.
- Connectivity of Mumbai and Ahmedabad by rail and road routes to cotton-growing regions and by sea routes to foreign markets.
- Mumbai is the main port city and Ahmedabad uses port facilities from Kandla.
- Many big and large financial centres are located in Mumbai and Ahmedabad.
- Power supply in Mumbai and Ahmedabad is mostly regular. While power is supplied by the Tata hydroelectric system in Mumbai, Ukai and Kakrapar hydroelectric projects supply electricity to Gujarat.

Problems Faced by Cotton Textile Industries

- The yarn in India is produced by small industries and units which largely cater to the local markets. Thus, while many spinners export cotton yarn, many garment manufacturers have to import fabric. Therefore, there is a mismatch between the two.
- Most of the machinery installed in the cotton mills are outdated and need to be replaced.
- Irregular power supply has hampered the production.
- Uncertainty in procuring raw materials, low labour productivity, lack of modernisation etc. are some problems because of which sugar industries are running into loss.
- The cotton industry is facing tough competition from the fibre industry.

Handloom and Khadi Industries

It is one of the oldest industries in India. The industry provides employment to about 10 million people and contributes over 23% of the total cloth production in the country. The khadi and handloom industries are located in many Indian states such as Tamil Nadu, Manipur, West Bengal, Nagaland, Kerala, Madhya Pradesh, Karnataka and Rajasthan.

Problems Faced by Khadi and Handloom Industries

- Insufficient and inferior quality of raw materials
- Lack of technical skills among poor craftsmen
- Old and obsolete technology used in the industries
- Goods which are produced are no match to modern fast-changing fashion and designs
- Stiff competition faced by mill-made cloth
- Lack of capital and cheap credit facilities

Silk Textile Industries

India is one of the largest producers of silk in the world. It manufactures four varieties of silk—mulberry, eri, tussar and muga. The first modern silk industry was set up at Howrah by the East India Company.

Mulberry Silk

Mulberry silk accounts for about 90% of the total natural produced silk in India. Mulberry silk is produced from silkworms which are reared from mulberry trees. Rearing of silkworm for producing silk is known as **sericulture**. Mulberry silk is produced mainly in Karnataka, Andhra Pradesh, West Bengal, Tamil Nadu and Jammu and Kashmir.

Distribution

Regions producing mulberry silk are

States	Regions
Karnataka	Bengaluru, Mysore, Kolar, Mandya, Belgaum and Coorg
Andhra Pradesh	Chittoor, Warangal, Karimnagar, Vishakhapatnam and Anantnagar
West Bengal	Malda, Murshidabad, Birbhum and Bankura
Tamil Nadu	Coimbatore, Dharmapuri, Nilgiris, Salem and Tirunelveli
Bihar and Jharkhand (produce tussar silk)	Bhagalpur, Palamau, Hazaribagh and Ranchi
Assam (produce tussar, eri and muga)	Goalpara, Kamrup and Nagaon

Problems Faced by the Silk Industry

- Competition from artificial silk
- Import of better quality and cheap raw silk from China
- No systematic testing and grading of silk
- Lack modern power looms for increasing production

Woollen Industry

More than 80% of woollen mills are located in northern India. The main centres of woollen production are Delhi, Srinagar, Kanpur, Dhariwal, Mumbai, Ahmedabad and Gwalior. The woollen industry in India is not as developed as cotton textile industries because the demand for woollen clothes is less as they are required only for three to four winter months mainly in northern India. Peninsular India does not experience extreme winters; hence, the demand for woollen clothes in these regions is low.

Problems Faced by the Woollen Industry

- India is a tropical country, and hence, woollen clothes are required only during winter months in northern India.
- Many people in India are poor and cannot spend on purchasing costly woollen clothes.
- Good quality of wool in India has to be imported.
- Synthetic fibres are replacing woollen industries.
- Because cotton and synthetic clothes are more in demand, capitalists prefer to invest in cotton industries.

Many steps have been taken to improve the woollen industry in India. The government has started encouraging the production of good quality wool in India. Various sheep-breeding farms have been set up in northwest India. Merino and Corriedale sheep are imported and reared in the country.



Map showing major textile industries in India

Jute Industry

It is the second important agro-based industry in India after the cotton textiles industry. It is one of the principal earners of foreign exchange.

The jute industry produces gunny bags, hessian, coarse carpets, rugs and cordage. Jute fibres are also used for packing goods.

Distribution

The jute industry is mainly centred in the Hooghly region as jute is largely grown in the Ganga Delta and in the Lower Ganga Valley. Other important jute-growing areas in Bengal are Howrah, Titagarh, Jagatal,

Serampore, Bansberia and Sibpur. Jute mills are also located in Bihar, Uttar Pradesh, Andhra Pradesh, Odisha and Madhya Pradesh.

Factors Promoting the Jute Industry around Kolkata

- The Hooghly valley is a part of the Ganga Valley where jute is predominantly grown.
- The Ganga Brahmaputra Delta has fertile soil which gets renewed every year. This has increased jute production.
- Humid climate and rainfall ranging 175–200 cm favour the growth of jute crop.
- Plenty of freshwater for retting and cleaning is available from the River Hooghly.
- Availability of labour from the neighbouring areas of Odisha and Uttar Pradesh has led to the growth of jute industries in the region.
- Kolkata is a port city and is well-connected to the other parts of the country by rail and road.

Problems Faced by the Jute Industry

- After Independence, nearly 70% of jute-producing areas went to Bangladesh. Thus, the industry suffers from inadequate supply of jute.
- The jute industry in India faces tough competition from Bangladesh, Brazil, Egypt and Thailand.
- The industry is equipped with old and obsolete machinery. Costs of production have also risen.
- Products of paper, plastic and hemp are widely used today as substitutes of jute products.

Remedial Steps Taken by the Government

- A Jute Consultative Council has been set up to advise the government on the jute industry.
- Many research programmes have been undertaken to extend the range of jute products. Some new jute products are tarpaulins, jute carpets etc.
- Modern machinery has begun to be installed in jute industries.
- Steps have been taken by the government to stabilise jute prices.