MANUFACTURING INDUSTRIES

CHAPTER COVERAGE

- ✦ Importance of Manufacturing Industries
- ✦ Contribution of Industries to National Economy
- ✦ Mineral based Industries
- ✦ Chemical Industries
- ✦ Classification of Industries
- ✦ Agro based Industries
- ✦ Aluminium Smelting

MANUFACTURING

The conversion of primary products into more refined and useable form is known as manufacturing.

IMPORTANCE OF INDUSTRIAL DEVELOPMENT

Industrialisation play a vital role in the economic development of a country :

1. **Utilisation of Natural Resources :**
   Utilisation of huge volume of natural resources has become possible with the development of industries in the country.
2. **Balanced Sectoral Development :**
   Growth of Industrialisation in the country can attain balanced sectoral development and it can reduce the too much dependence of the economy on the agricultural sector.
3. **Enhanced Capital Formation :**
   Increasing volume of investment in industries has led to enhancement in the rate of capital formation in the country.
4. **Increase in National Income & Foreign Exchange :**
   Organised and unorganised industries are jointly contributing a good portion of the total national income of the country.
5. **Increase in Job Opportunities :**
   It increase the job opportunities for a large section of the populatioin of the country.

◈ **Contribution of Agriculture to Industry :**

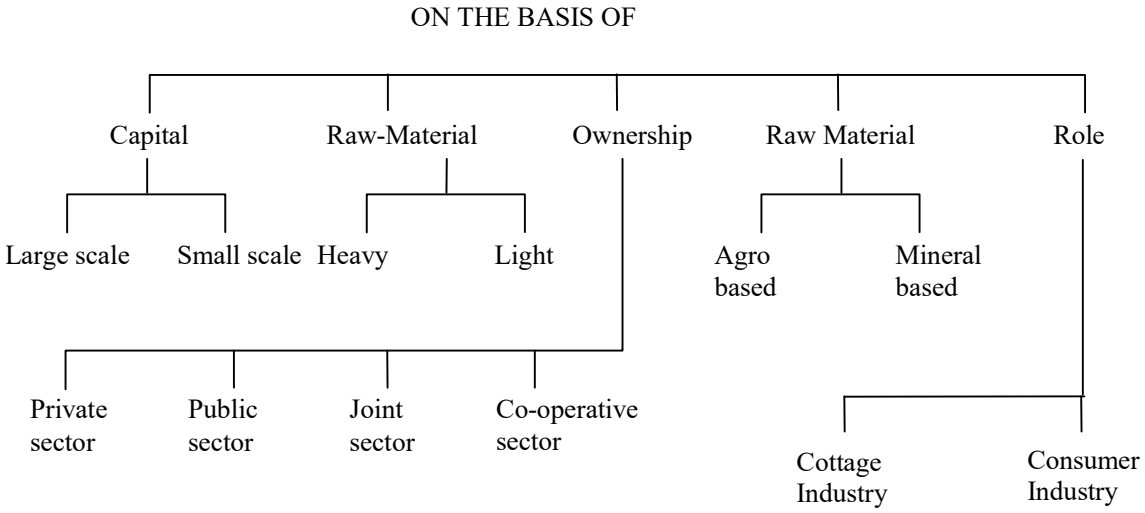
1. Agriculture provides raw material to industry such as Jute, Cotton etc.
2. It also act as a source of capital formation which can be utilized in industry.
3. It provides food to the industrial worker.

4. It provides good market to the industrial products.
5. It also decrease pressure on industry.

◈ **Contribution of Industry to Agriculture :**

1. Industry provides inputs to the agriculture such as fertilizers, pesticides.
2. It provides infrastrucutal facilities to the industry.
3. It reduces pressure on agriculture.
4. Industry provide processed product to the agriculture.
5. It also increases the market value of agriculture product.

➢ CLASSIFICATION OF THE INDUSTRIES



➢ ON THE BASIS OF CAPITAL INVESTMENT

◈ **Large scale Industry :**

1. Employ a large number of labourers.
2. Huge investment i.e. more than 1 crore is involved in large scale industry.

◈ **Small Scale Industry :**

1. Industries which are owned and run by individuals.
2. Employ a small number of labourers.
3. Small investment i.e. less than 1 crore Rs. are invested.

➢ ON THE BASIS OF RAW MATERIAL

◈ **Heavy Industries :**

Industries which use heavy and bulky raw materials and produce products which are heavy and bulky are called Heavy Industry. e.g. Iron & steel industry.

◈ **Light Industries :**

The light industry uses light raw material and produce light finished product. e.g. Electric fans, Sewing machines.

➢ ON THE BASIS OF OWNERSHIP

1. **Private sector Industries :**
   Industries which owned by individual or firms such as Bajaj, Tisco are called private industries.
2. **Public sector Industries :**
   Industries owned by the state and its agencies. e.g. BHEL Bhilai steel Plant, Durgapur Steel Plane.
3. **Joint sector Industries :**
   Industries owned jointly by the state and private firms such as Gujarat Alkalies Ltd. or Oil India Ltd.
4. **Co-Operative sector Industries :**
   Industries owned and run Co-operatively by a group of people who are generally producers of raw materials of the given industry. e.g. sugar mill.

➢ ON THE BASIS OF SOURCE OF RAW MATERIAL

- **Agro Based Industries :**
  Those industries which obtain raw material from agriculture. e.g. Cotton textile, Jute textile, Sugar etc.
- **Mineral Based Industries :**
  The industry that receive raw material from minerals. e.g. Iron and steel industry. aluminium and cement industry.

➢ ACCORDING TO THEIR ROLE

1. **Cottage Industry :**
   Industries which artisans setup in their own houses, work with wood, cane, brass, stone are called cottage industries. e.g. Handloom, Khadi and Leather.
2. **Consumer Industry :**
   Consumer industries convert raw material or primary products into commodities which are directly used by the people. e.g. cotton textile, sugar industry, vegetable oil etc.

➢ FACTORS IN THE LOCATION OF INDUSTRIES

1. **Availability of Raw Material :**
   It is the major factor affecting the location of the industry. Agrobased industry will be located in agriculture dominating areas where as mineral based industry will be located in the mineral dominating areas.
2. **Power :**
   Power can be transmitted but those industries which consume large quantities of power are located near the source of power.
3. **Labour :**
   Labour intensive industries mostly concentrate in densely populated areas.
4. **Transport :**
   Transport system helps in the movement of goods and raw material.
5. **Market :**

   Nearness to market is essential for quick disposal of manufactured goods and for purchasing raw material. It reduces the cost of transportation.
6. **Government Policies :**

Government activity in planning the future distribution of industries, for reducing regional disparities, elimination of pollution of air and water and for avoiding their heavy clustering in big cities has become an important location factor.

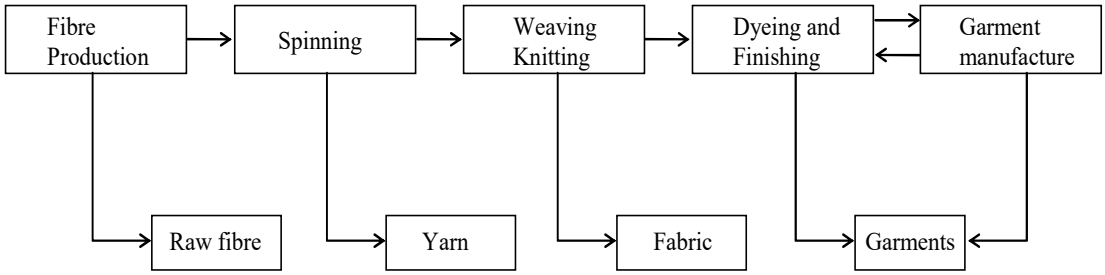
➢ AGRO BASED INDUSTRIES

◈ **Textile Industry :**

1. It adds about 14 % to the industrial production and about 4 % to the GDP.
2. It provides employment to about 35 million person. Together with allied agriculture sector, it provides employment to over 90 million people.
3. It is the only industry which is self-relient from raw material to the highest value added product.

◈ **Cotton Textiles :**

1. In ancient India, cotton textile were produced with hand spinning and hand loom weaving teachniques.
2. Today there are nearly 1600 cotton and human made fibre textile mills in the country. There are several thousands small factories with 4 to 10 looms.



Value addition in the textile industry

➢ FACTORS RESPONSIBLE FOR THE HIGH CONCENTRATION OF COTTON MILLS IN MAHARASTRA & GUJARAT.

1. **Climate :**
   Humid climate is essential for this industry because thread does not break so frequently.
2. **Transportation :**
   This help in the import of machinery and long staple cotton.
3. **Power :**
   Cheap hydroelectricity is readily available from the near by areas.
4. **Raw material :**
   The black cotton soil provided cotton as the basic raw material.
5. **Cheap Labour :**
   They have high density of population so both skilled and unskilled loabour is available in large number.
6. **Market :**
   There is ready market for Mumbai products both in India and abroad.
7. **Capital :**
   Mumbai is a great commercial and financial centre of India. So capital which is required is easily available.

➢ PROBLEMS OF INDIAN COTTON TEXTILE INDUSTRY

1. **Problems of Raw Material :**

   The industry faces the problems of building up a regular supply of its raw maeterial.

2. **Problem of Power :**

   Frequent power cuts and load shedding had affected the industry badly.

3. **Obsolete machinery and need for modernisation :**

   The mill sector has been working with obsolete machinery. The problem of replacement of obsolte machinery and modernisation have become really acute.

4. **High cost and competition in foreign market :**

   It has been facing increasing competition in world market. This is largely due to low productivity and high cost and high prices of Indian cotton textile.

➢ JUTE INDUSTRY

◈ **Importance of the Industry :**

1. It is a labour inensive industry so it provides emplyment to the people.
2. Jute product are the major items of exports.
3. India is the second largest exporter of jute products.
4. It account for more than 20 % of the total export earning.

◈ **Distribution :**

There are about 70 jute mills in India. Most of these are located in West Bengal, mainly along the banks of Hugli river.

◈ **Factors responsible for their location in Hugli basin are :**

1. Proximity of the Jute producing areas.
2. Inexpensive water transport.
3. Supported by a good network of Railways, Road ways and Water ways to facilitate movement of raw material to the mills.
4. Abundant water for processing raw jute.
5. Cheap labour is available their.
6. Kolkata as a large urban centre provides banking, insurance and port facilitate for export of Jute goods.

◈ **Problems of the Indian Jute Industry :**

1. Problem of raw material.
2. International competition from synthetic substitutes and other competitions like Bnagladesh, Brazil, Egypt, Thailand.
3. Less Demand
4. High Prices.
5. High Production costs.

◈ **Steps taken by Indian governemnt to solve the problems :**

1. Internal demand has been increased due to the government policy.
2. In 2005 National Jute policy was formulated with the objective of increasing productivity, improving quality, ensuring good prices to the jute farmers and enhancing the yield per hectare.

◈ **Market :**

1. The main markets are U.S.A., Canada, Russia, U.K. United Arab Republic and Australia.
2. The growing global concern for environment friendly, biodegradable material, has once again opened the opportunity for jute products.

➢ SUGAR INDUSTRY

◈ **Importance of the Sugar Industry :**

1. India stands second as a world producer of sugar but occupies the first place in the production of gur and Khandseri.
2. It ranks as the third largest industry in terms of its contribution to the net value added by manufacture.
3. It is also an important source of excise duty for the central governemnt.

◈ **Distribution :**

The sugar industry is established in areas of sugar cultivation because :

1. Its raw material is heavy and perishable.
2. Sugar cane cannot be stored for long as the loss of sucrose is inevitable.
3. It cannot be transported over long distances because it may dry on the way.

➢ DIFFERENCE BETWEEN THE SUGAR INDUSTRY OF NORTHERN AND PENINSULAR INDIA

1. **Climate :**
   It is a tropical crop Peninsular India has tropical climate which gives higher yield per unit area as compared to north India.
2. **Higher sucrose :**
   The sucrose content is also higher in tropical variety of sugarcane in the south.
3. **Long Crushing period :**
   It is also much longer in the sourth than in the north.
4. **Better Management :**
   The co-operative sugar mills are better manged in South than in the North.

◈ **Problems of Sugar Industry :**

1. Low yield of sugarcane
2. Short crushing season.
3. High cost of production.
4. Old and obsolete machinery.
5. Under utilisation of by products.

➢ MINERAL BASED INDUSTRY

◈ **Mineral Based Industries :**
Those industries which use minerals as the basic raw material.

◈ **Iron and Steel Industry :**

1. It is the basic industry since all the other industries-heavy, medium and light depend on it for their machinery.

2. Steel is needed to manufacture a variety of engineering goods, construction material, defence material, telephonic, scientific equipment and variety of consumer goods.
3. It is a heavy industry becuase all the raw material as well as finished goods are heavy and bulky entailing heavy transportion cost.
4. Iron ore, cooking coal and lime stone are required in the ratio of approximately 4 : 2 : 1. Some quantities of manganse are also required to harden the steel.
5. India ranks ninth among the world crude steel producer. It is the largest producer of sponge Iron.
6. There are 10 primary integrated and many steel plants in India.
7. All public sector undertakings market their steeel through, Steel Authority of India India Ltd. (SAIL) while TISCO markets its produce through Tata Steel.
8. Chota Nagpur plateau region has the maximum concentration of iron and steel Industries because
   (A) Low cost of iron ore
   (B) High grade raw material in proximity
   (C) Cheap labour and vast growth potential in the home market.

◈ **Problems of Iron and Steel Industry :**

1. Shortage of raw material.
2. Shortage of power.
3. Lower productivity of Labour.
4. Poor infrastructure.
5. Lower investment in Research and Developement.

◈ **To improve the production government of India had taken following steps :**

1. Government has adopted a new economic policy of Liberalisation, privatisation and globalisation.
2. Government is promoting Foreign Direct Investment in the sector.
3. Government has launched Duty Exemption Scheme.

➢ ALUMINIUM SMELTING

1. It is the second most important metallurgical industry in India.
2. It is light, resistance to corrosion, a good conductor of heat, mallable and becomes strong when it is mixed with other metals.
3. It has gained popularity as a substitute of steel, copper zink and lead.
4. There are 8 alluminium smelting plants in the country located in Orissa, West Bengal, Kerala, Uttar Pradesh, Chattisgarh, Maharashtra and Tamil Nadu.
5. Bauxite, the raw material used in smelters is a very bulky, dark reddish coloured rock.

◈ **Prime factors of Location of the Industry :**

1. Regular supply of electricity at minimum cost.
2. Assured source of raw material.

➢ CHEMICAL INDUSTRY

The industry has two components.

1. Inorganic chemicals.
2. Organic chemicals.

- **Inorganic chemicals :**
  It includes sulphuric acid (used to manufacture fertilizers, synthetic fibres, plastics, adhesives paints, dyes stuffs). Nitric acid alkalies, soda ash (used to make glass, soap and detergents, paper) and castic soda.
- **Organic chemicals :**
  It includes petrochemicals, which are used for manufacturing of synthtic fibres, synthetic rubber, plastics, dye-stuffs.

➢ IMPORTANCE OF CHEMICAL INDUSTRY

1. **Employment :**
   It is major source of employment for large number of people.
2. **Foreign exchange :**
   Export of chemicals and chemical products brings foreign exchange to India.
3. **Reduction of pressure on Land :**
   It reduce pressure on land by providing employment to workers.
4. **Development of Agriculture :**
   It supplies pesticides and weedicides to agriculture to control harmful insects and weds.
5. **Contribution to G..D.P. and national Income :**
   It contributes 3 % of the G..D.P. It also contribute 20 % of the excise duty to the government.

➢ FERTILISER INDUSTRY

1. The fertiliser industry is centred around the production of nitrogenous fertilisers phosphatic fertilisers and ammonium phosphate and the complex of fertilisers which have a combination of nitrogen (N) and Potash (K).
2. Potash is entirely imported.
3. India is the third largest producer of nitrogenous fertilizers.
4. There are 57 fertiliser units manufacturing nitrogenous and complex nitrogeneous fertilisers 29 for urea and 9 for producing ammonium sulphate as a by producing ammonium sulphate as a by product and 68 other small units produce single super phosphate.
5. There are 10 public sector undertakings and one is cooperative sector at Hazira in Gujarat under the fertiliser corporation of India.
6. Gujarat, Tamil Nadu, Uttar Pradesh, Punjab and Kerala contribute half the fertiliser production. Other are Andhra Pradesh, Orissa, Rajasthan, Bihar, Maharashtra, Assam West Bengal Goa, Delhi, Madhya Pradesh and Karnataka.

➢ CEMENT INDUSTRY

1. It is essential for all construction activities.
2. It earns valuable foreign exchange.
3. Indian cement export in Bangladesh, Indonesia, Malaysia, Nepal, Middle East and Affrica.
4. It requires bulky and heavy raw materials like lime stone, silica, alumina and gypsum, coal and electric power.
5. The first cement plant was setup in chennai in 1904. Decontrol of price and distribution since 1989 and other policy reforms let to the cement Industry to make rapid strides in capacity. process, technology and production.
6. There are 128 large plants and 332 minicement plants in the country.

7. Efforts are being made to generate adequate domestic demand and supply in order to sustain this industry.

➢ AUTOMOBILE INDUSTRY

1. Atuomobiles provide vehicles for quick transport of good serives and passengers. e.g. Trucks, Bus, Car etc.
2. After the liberalisation, the coming in of new and contemporary models stimulated the demand for vehicles which led to a healthy growth.
3. Foreign direct investment brought in new technology and aligned the industry with global development.
4. At present there are 15 manufactures of passenger cars and multiutility vehicles, 9 of commercial vehicles, 14 of two and three wheelers.
5. The industry is located around Delhi, Gurgaon, Mumbai, Pune, Chennai, Kolkata, Lucknow, Indore, Hyderabad, Jamshedpur and Bangalore.

➢ INFORMATION TECHNOLOGY & ELECTRONIC

1. The electronic industry covers a wide range of products including T.V. sets, transistore sets, telephone exhange, cellur telecom, compute and many other equipments required by the telecommunication industry.
2. Bangalore has emerged as the electronic capital of India. Others are Mumbai, Delhi, Hyderabad, Pune Chennai, Kolkata, Lucknow and Coimbatore.
3. 18 software technology parks provide single window service and high data communication facility to software experts.
4. It has provided employment to over million people.
5. This industry is major foreign exchange earner.
6. It has helped the growth of service centre.

➢ INDUSTRIAL POLUTION AND ENVIRONMENTAL DEGRADATION

Industries are responsible for four types of pollution
(a) Air, (b) Water, (c) Land, (d) Noise

◈ **Air pollution :**

1. It caused by presence of high proportion of undesirable gases such as sulphur dioxide and carbon monoxide.
2. The smoke emitted by the industries pollute air and water very badly.
3. Toxic gas leaks can be very hazardous with long term effects.
4. It adversely affects human health, animals plants and the atmosphere as whole.

◈ **Water Pollution :**

1. It is caused by organic and inorganic industrial wastes and affluents discharged into rivers. Paper, pulp, chemical, textile and dyeing, petroleum refineries, tanneries and electro plating industries let outdyes detergents acids, salt, soap and heavy metals like lead and mercury etc into the water bodies.
2. Fly ash phospo-gypsum and iron and steel slags are the major solid wastes in India.

◈ **Thermal :**

It occurs when hot water from factories and thermal plant is drained into rivers and ponds before cooling.

- **Nuclear Pollution :**
  Wastes from nuclear power plants, nuclear weapon production causes cancer birth defects and miscarriages.
- **Noise Pollution :**
  Unwanted loud noise is also pollution. It can cause hearing impairment, increase heart rate irritation and anger etc.

➢ CONTROL OF ENVIRONMENTAL DEGRADATION

1. Minimising the use of water for processing by reusing and recycling it in two or more successive stages.
2. Harvesting of rainwater to meet water requirement.
3. Overdrawing of ground water reserves needs to be regulated legally.
4. Smoke can be reduced by using oil or gas instead of coal in factories.
5. Machinery and equipment and generators should be fitted with silencers.
6. All machinery can be redesigned to increase energy efficiency and reduce noise.
7. Particulate matter in the air can be reduced by fitting smoke stake to factories with electrostatic precipitators, fabric filters, scrubbers and inertial separators.
8. Treating hot water and effluents before releasing them in rivers and ponds

GLOSSARY.

1. **Agro based Industries :** The industry which converts the agricultural products into industrial products.
2. **Basic Industry :** It is a heavy industry which is fundamental to other industries. e.g. iron & steel.
3. **Co-operative Industries :** These industries are organised by a group of people who are also the producer of raw material and help in running industries by Co-operating each other.
4. **Consumer Industries :** These industry provides goods primarily for the consumption of people.
5. **Cottage Industry :** These industries are the ones which are pactised on a small scale in homes villages.
6. **Heavy Industries :** These industries use heavy raw material and manufacture of finished products. e.g. Iron steel industries.
7. **Industry :** Industry is the enhancement of the value of the raw material through the manufacturing process of factory.
8. **Joint Sector Industries :** These industries are owned by both the state and some private industrialists or firms.
9. **Light Industries :** These industries use light rewmaterial and make light finished product in weight. e.g. electronics and fans.
10. **Large Scale Industry :** The industries employing large number of persons in each unit and having large production level e.g. jute textile.
11. **Mineral based Industries :** The industry in which mineral procducts are processed and turned into finished goods.
12. **Public Sector Industries :** These industries are owned by the central or the state government. e.g., BHEL and NTPC.
13. **Primary Industry :** It is an industry producing raw material.
14. **Private Sector Industries :** These industries are owned and controlled by individuals, firm or component.
15. **Secondary Industry :** These industries manufacture goods by using processed material of primary industry.
16. **Small Scale Industry :** The industry employing small number of persons and invest capital of about 1 crore e.g. Ready made garments.