MANUFACTURING INDUSTRIES

Production of goods in large quantities after processing of raw material to more valuable product is known as **manufacturing**. Example- Production of sugar from sugarcane, production of cloths from cotton.

Manufacturing sector is considered the backbone of development in general and economic development because-

- Manufacturing industries help in modernizing agriculture.
- They reduce the heavy dependence of people on agricultural income by providing them jobs in secondary and tertiary sectors.
- Helps in eradication of unemployment and poverty.
- Helps in bringing down regional disparities by establishing industries in tribal and backward areas.
- Exports of manufactured goods expand trade and commerce and bring much-needed foreign exchange.
- India should convert its raw materials into a wide variety of furnished goods in order to prosper.

Agriculture and industry-

Contribution of agriculture to industry

1. Agriculture provides raw material.
2. many industrial products are consumed in agriculture like- Tractor.
3. It provides food security to industrial workers.

Contribution of industry to agricultre

1. Industry provides input to agriculture such as fertilisers.
2. It provides farm eqipments.
3. It reduces the pressure on agriculture by creating jobs.

Contribution of industries to national economy-

1. The economic strength of a country is measured by the development of manufacturing industries.
2. It provides employment to unskilled people.
3. Industrial sector is expected to grow with high growth rate in coming years.

4. Growth in industrial sector acts as catalyst for other sectors of economy as well.

Industries are not found everywhere. They are located at certain places only where they get favourable conditions to thrive. Industrial Location is governed mainly by the following factors:

- Raw Materials
- Source of Energy
- Source of Water
- Availability of Capital and Finance
- Demand in Market
- Skilled Labourers and Workers
- Banking and Insurance
- Transport and Communication

Many industries come together at urban centres to make use of the advantages. These are known as **"agglomeration economies".**

Types or Classification of Manufacturing Industries:

A] ***On the basis of Raw Materials:***

- Agro Based: Those industries where raw materials come from agriculture, e.g. Cotton, Woolen, Jute, Silk Textiles, Sugar, Tea, Edible Oil
- Mineral Based: Those industries where minerals are used as raw materials, e.g. Iron & Steel, Cement, Aluminum, Machine Tools etc.

B] ***On the basis of their Main Role:***

- Basic Industries: Those industries which provide raw material to other industries are called basic industries. These industries help the development of other industries, e.g. Iron and Steel, Copper and Aluminum Smelting
- Consumer Industries: Those industries which produce goods for consumers are called consumer industries. Finished goods of these industries are directly sold in the market for consumers, e.g. Sugar, Toothpaste, Soap, Bread, Paper etc.

C] ***On the basis of Capital Investment:***

- Small Scale Industries: Those industries where investment of capital is less than Rupees one crore are called as small scale industries, e.g. Mat, Furniture, Toys, Bread, Tools etc.
- Large Scale Industries: Those industries where investment of capital is more than Rupees one crore are called as large scale industries, e.g. Iron & Steel, Petrochemicals, Cotton Textiles etc.

D] ***On the basis of Ownership:***

- Public Sector: These industries are owned, operated and maintained by Govt. e.g. BHEL, SAIL, IISCO

- ❖ Private Sector: These industries are owned, operated and maintained by individual or group of individuals, e.g. TISCO, Bajaj Auto Ltd., etc.
- ➢ Joint Sector: These industries are jointly run by Govt. and group of individuals. It is mixture of public and private sector, e.g. Oil India Ltd. [OIL].
- ➢ Cooperative Sector: These industries are owned, operated and maintained by supplier of raw materials and workers of the industries, e.g. Sugar industries in Maharashtra, Coir industries in Kerala.

E] ***On the basis of Finished Goods [Output]:***

- ▪ Heavy Industries: Those industries which use heavy and bulky raw materials and produce heavy goods in large quantity are called heavy industries, e.g. Iron and Steel, Copper Smelting.
- ▪ Light Industries: Those industries which use light and small raw materials and produce light goods are called light industries, e.g. Electrical, Toys, Tools, Utensils etc.

Miscellaneous Industries: The industries are also classified in to the following categories.

- ❖ Village Industries. Village industries are located in villages and primarily cater to the needs of the rural people. They usually employ machinery such as oil extraction. Flour – grinding and agricultural implements.
- ❖ Cottage Industries. Industries which artisans set up in their own houses work with wood, cane, brass, stone, etc, are called cottage industries. Handloom, Khadi and leather work at the artisans house fall in this category.
- ❖ Consumer Industries. Consumer Industries convert raw materials or primary products into commodities directly used by the people. Textile industry, bakeries etc, are some of the consumer industries.
- ❖ Ancillary Industries. The industries which manufacture parts and components to be used by big industries for manufacturing heavy articles like trucks, buses, railways engines, and tractors are called ancillary industries.
- ❖ Basic Industries. Industries on which depend many other industries for their manufacturing processes are called basic industries. Iron and steel industry and power generating industry are included in this category.
- ❖ Capital Intensive Industries. Industries requiring huge investments are called capital intensive industries. Iron and steel, cement and aluminium are capital – intensive industries.
- ❖ Labour – Intensive Industries. Such industries as require huge labour force for running them are called labour-intensive industries. In these industries, labour is more important than capital. Shoe-making and bidi-manufacturing, etc., are included in these industries.

Importance of textile industry-

1. Contribute to National GDP and earn valuable foreign exchange.
2. it is closely linked with agriculture and provides livelihood to farmers.
3. It is demand creative. i.e it creates demand for chemicals, packaging, dyes etc.
4. labour intensive industry.

why textile industry is concentrated around Mumbai?

1. Easy availability of raw material.
2. Favourable climate for production of cotton.
3. Easy export through ports.
4. Availability of capital in these areas.
5. Easy availability of labour.

Problems faced by textile industry.

- Raw material. production of cotton is low when compared to other countries.
- Problem of power. Frequent power cuts.
- old machinery and need for modernisation.
- tough comptetion from synthetic fibre.
- High cost and poor quality of Indian textile.

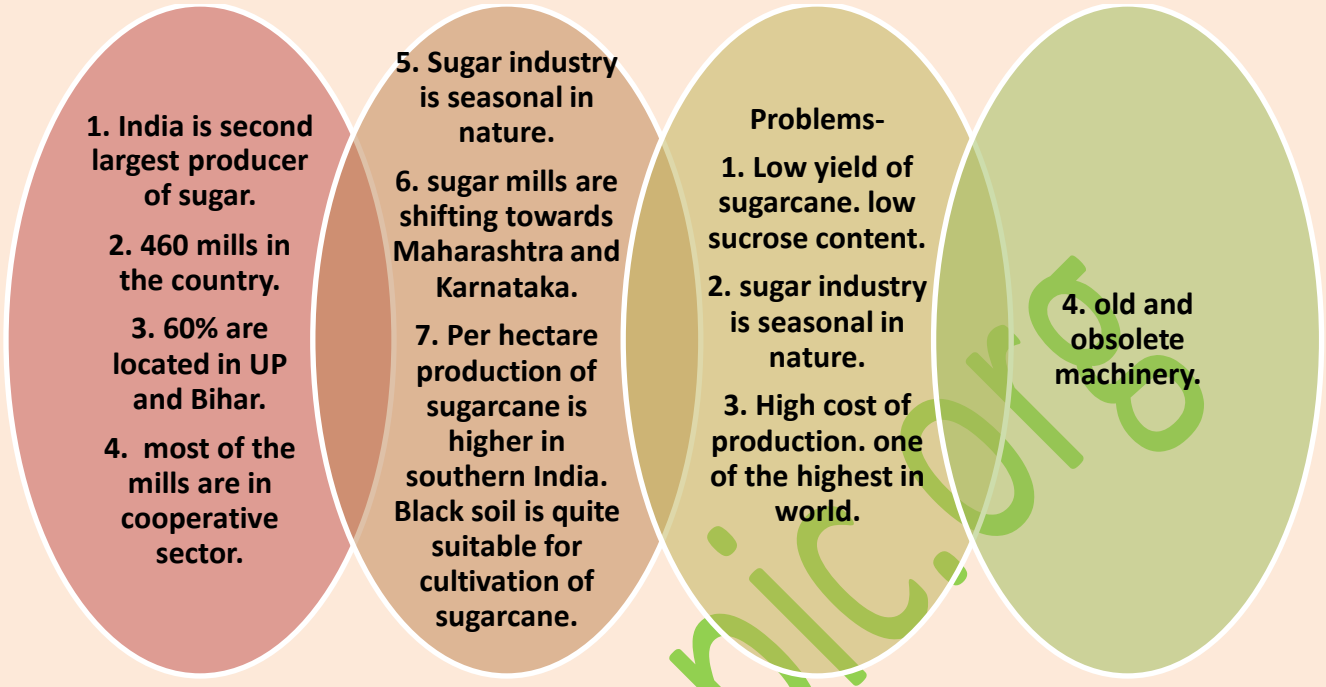
It is important to promote weaving sector because it is labour intensive and finished products fetch more amount when compared to semi finished goods.

why Jute mills are located in Bengal?

1. easy availability of raw material.
2. Good connectivity through Road, rail and waterways.
3. Abundent water is required for jute processing. Hoogly river provides required water.
4. Easy availability of labour from Bihar, Bengal and Odisha

Challenges of jute mills

1. Synthetic fibres are a big challenge.
2. Cost of production is high in comparision with synthetic fibres.
3. Tough comptetion from Bangladesh.
4. Industry failed to diversify its products.



Iron & Steel Industry and its problems:

- ✓ This industry is called as basic industry because it provides raw material to many other industries such as machine tools, transport equipment, construction material etc.
- ✓ It is also called as heavy industry because raw materials [iron ore, coal, limestone] are bulky in nature.
- ✓ Iron ore mixed with limestone is smelted in the blast furnace using coking coal to produce pig iron. The ratio of iron ore, limestone and coking coal used in 4:2:1. Pig iron is mixed with manganese, chromium and nickel which make it more stronger steel.
- ✓ Most of the steel plants are located in Chotanagpur region due to its favourable conditions.
- ✓ Important integrated steel plants are Jamshedpur, Durgapur, Bokaro, Bhilai, Burnpur etc.
- ✓ India produces about 33 million tons of steel every year even though per capita consumption of steel is very low i.e. 32 kg. It is low because India has low economic and industrial development.
- ❖ Today steel industries in India are facing many problems: a) High cost of production, b) Limited availability of coking coal, c) Low productivity of labour, d) Irregular supply of energy, e) Raw materials are found in a certain pockets of India only, f) Poor infrastructure like transport and communication etc.

Aluminum Smelting:

- ➢ It is the second most popular metallurgical industry in India

- The raw material used is a bulky dark reddish rock known as bauxite.
- It is light, corrosion resistant and a good conductor of heat and is malleable.
- It becomes stronger when mixed with other metals.
- It is used to manufacture aircraft, utensils and wires.
- Major sources are located in Orissa, West Bengal, Kerala, UP, Chattisgarh, Maharashtra and Tamil Nadu.

Chemical Industry:

- Contributes approximately 3 percent of annual GDP.
- In terms of size, it is the third largest industry in Asia and the twelfth largest in the world.
- Organic and inorganic sectors of the industry are rapidly growing. Organic chemicals include petrochemicals. Inorganic chemicals include sulphuric acid, nitric acid, alkalis, soda ash, caustic soda, etc.

Fertiliser Industry:

- India is the third largest producer of nitrogenous fertilizers.
- Fertiliser industry is centred around the production of nitrogenous fertilisers, phosphatic fertilisers and ammonium phosphate and complex fertilisers. Complex fertilisers have a combination of nitrogen (N), phosphate (P) and potash (K). Potash is entirely imported because India does not have any reserves of commercially viable potash or potassium compounds.

Cement Industry:

- Cement industry requires bulky raw materials like limestone, silica, alumina and gypsum.
- There are many cement plants in Gujarat because of proximity to ports.
- There are 128 large and 323 mini cement plants in India.
- Improvement in quality has found the Indian cement a readily available market in East Asia, Middle East, Africa and South Asia. This industry is doing well in terms of production as well as export.

Automobile Industry:

- After liberalisation, many automobile manufacturers set their base in India.
- At present, there are 15 manufacturers of cars and multi-utility vehicles, 9 of commercial vehicles, 14 of two and three-wheelers.
- Delhi, Gurgaon, Mumbai, Pune, Chennai, Kolkata, Lucknow, Indore, Hyderabad, Jamshedpur, Bangalore, Sanand, Pantnagar, etc. are the major centres of automobile industry.

Information Technology and Electronics Industry:

- ***B***angalore is often termed as the electronic capital of India. Mumbai, Pune, Delhi, Hyderabad, Chennai, Kolkata, Lucknow and Coimbatore are the other important centres.
- There are 18 software technology parks in the country and they provide single window service and high data communication to software experts.
- This industry had generated a large number of employment. Upto 31 March 2005, over one million persons were employed in the IT industry. Because of fast growth of BPO (Business Process Outsourcing); this sector has been a major earner of foreign exchange.

Industrial Pollution and Environmental Degradation:

1. Air pollution is caused by the emission of CO2, Carbon Monoxide, Sulphur Dioxide etc. Chimneys of the industries produce heat leading to Global Warming and Green House Effect. The use of CFC in various industrial products depletes ozone layer which filters ultraviolet rays of the sun.
2. Dumping of organic and inorganic industrial waste into water bodies pollutes the water. Industries which produce paper, pulp, chemical, leather, acids, dyes, fertilizers etc generate lots of toxic waste which kills the aquatic life.
3. High intensity sound generated by running machines, sirens, drilling, fans etc leads to noise pollution. It causes irritation, hearing impairment, heart attack etc. among the nearby residents.
4. Mining activity to get raw material for industries also degrades the environment. Land degradation, deforestation, soil erosion, water logging etc. are the results of mining activities.

Measurement [Methods] for Controlling Environmental Pollution and Degradation:

1. Industries should be located with careful planning and better design.
2. Quantity of smoke can be reduced by using oil instead of coal.
3. Non-conventional sources of energy should be used instead of fossil fuels.
4. Modern equipment should be used which controls, filters and separates harmful materials from the waste.
5. Waste water should be properly treated before discharging into rivers.
6. Land filling method should be adopted for dumping of waste.
7. Polluting industries should be located away from towns and cities.

Read NTPC Shows the way given on page Number 79