

Manufacturing Industries (Easily find answers within the notes)

Introduction:

The Economy develops when all three sectors which are linked to each other, work with coordination and help each sector to grow well. Each sector has its own significance. In this chapter we will read about the role of manufacturing Industries under the secondary sector.

Manufacturing:

Production of goods in large quantities after processing **from raw materials to more valued products** is called Manufacturing.

For example :

- Paper (finished product) manufactured from wood (raw material).
- Iron and steel from iron ore.
- sugar from sugarcane.
- clothes are manufactured from yarn.

Manufacturing is the [Backbone of Economic Development](#).

Importance of Manufacturing:

1. Manufacturing helps in **modernizing agriculture** and **reduces the heavy dependence of people on agriculture** by providing jobs in secondary and tertiary sectors.
2. It helps in **eradication of unemployment and poverty**. (It was the main objective behind establishing Public and joint sector)
3. Establishing Industries in Backward Areas **Reduce the regional disparities**.
4. A country with a high level of Manufacturing activities(transforming raw material into finished goods of higher value) becomes prosperous.
5. Export of manufactured goods makes a nation economically strong as export brings much needed foreign exchange in the country.

Agriculture and Industry:

Agriculture and Industries are **dependent on each other**.

For example:

- **Cotton** (Agricultural Raw material) – Availability of cotton makes the process of manufacturing possible.
- **Shirt** (Industrial finished product) – Since it is a valuable product, it has importance.
- Similarly, **Land** – It needs to become efficient and it needs industries to provide required

implements for the increase in production.

- **Tractors** – These industrial goods are required because farmers have demand for such products.

In terms of Globalization : What do we need to do?

1. Our Industry needs to be more efficient and competitive.
2. Manufactured goods must compete with International market. If it has already accomplished self-sufficiency level.

Contribution of Industry to National Economy:

- Total Contribution of our Industries – 27%
- The share of manufacturing Industries – 17%

This is much lower in comparison to some east Asian Economies, where it is 25-35%

- Desired growth rate- 12%
- Actual growth rate – 07%

Since 2003, growth rate in manufacturing Industry has increased (09 to 10%)

Industrial Location:

The industrial location is influenced by many factors :-

1. Availability of raw material
2. Availability of labor.
3. Capital
4. Power
5. Market
6. Government policy
7. cost.

Industrialization and Urbanization:

- They **go hand in hand**.
- **Industrialization gives way to urbanization** which leads to settlements of many new cities around industries as it creates employment opportunities which attracts people.
- Likewise **urbanization attracts many industrialists to set up their industries near urban centers** because there they are provided with markets and other services such as banking, insurance, transportation, labor, consultants and financial advice etc.
- As a result, many industries tend to come together to make use of the advantages offered by the urban centers known as **agglomeration economies**.

Industry – Market Linkage :

Inputs — Factor of Production — Transportation

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Money Factory

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Market — Transportation — Outputs (products)

Classification of Industries:

1. On the basis of **source of raw material**

- Agro-based Industries
- Mineral based industries

2. **Raw material**

- Heavy
- Light

3. **Ownership**

- Private sector
- Public sector
- Cooperative sector
- Joint sector

4. **Size**

- Large scale
- Medium scale
- Small scale

Agro-based Industries:

Industries which are based on agricultural raw material known as agro-based Industries.

For example- Cotton, Jute, Silk, Woolen textile, Sugar and Edible Oil etc.

– **Textile Industry – Sugar Industry**

1. Cotton

2. Jute

Textile Industry:

1. Textile Industry occupies a unique position in the Indian Economy.
2. It **contributes significantly to :-**
 - Industrial production (14%)
 - Employment generation (35 million person and 2nd largest after agriculture)
 - foreign Exchange earnings (about 24.6 %)
 - Gross Domestic Product (4%)
3. It is the only industry in the country which is self-reliant and complete in the value chain.
 - For Example: From raw material to the highest value added products.

Raw cotton-**Ginning**-cotton fiber-**spinning**-yarn-**weaving**-Fabric-**Dyeing/finishing**-Garments-Shirt.

Cotton Textile:

1. Cotton textile production went through a shift in technique from hand loom to power looms after the 18th Century.
2. Earlier, the cotton textile industry was concentrated in the cotton growing belt of Maharashtra and Gujarat only.

Factors Responsible for the location:

Availability of raw cotton, market, transport including accessible port facilities, labor, moist climate etc.

Advantages of Cotton Industry:

1. This industry **generates employment** for farmers, cotton boll pluckers and workers engaged in dyeing, designing, packaging, tailoring and sewing.
2. **Cotton industry** also creates demands and provides support to many other industries such as chemicals and dyes, packaging materials and engineering works.

A Few other points about Indian Cotton Industry:

1. There were 1946 cotton and human made fiber textile mills in 2011.
 - 80% of these are in the private sector and rest in the public and cooperative sectors.
2. Spinning is centralized in Maharashtra, Gujarat and Tamil Nadu whereas weaving is decentralized.
3. India has world class production of yarn after spinning however. Weaving supplies low quality of fabric due to lack of advanced technology.
4. It exports yarn to Japan and also exports cotton goods to the U.S.A, U.K., Russia, France, East European countries, Nepal, Singapore, Sri Lanka, and African countries.
5. It has the second largest installed capacity of spindles in the world (43.13 million spindles- 2011-

12, after China)

6. One fourth of the total trade of cotton yarn is shared by India itself in the world.

Challenges faced by cotton Industry:

- Most of the production is in fragmented small units and cannot upgrade the machinery to huge scale therefore, need the up gradation of machinery in the weaving and processing sectors.
- Irregular power supply is another problem.
- The low output of labor.
- Stiff competition with the synthetic fiber industry.

Jute Textiles:

1. India has the first rank in jute production.
2. There are about 70 jute mills in India and located mainly along the banks of the Hugli river in West Bengal. Thus, West Bengal leads jute cultivation.
3. The first jute mill was set up near Kolkata in 1885 at [Rishra](#).

Factors Responsible for the location:

- Proximity (nearness) of the jute producing areas.
- Inexpensive water transport.
- Good Railway connectivity.
- Cheap labor from West Bengal and adjoining states of Bihar, Odisha and Uttar Pradesh.
- Kolkata as a large urban center provides banking, insurance and port facilities for export of jute goods.
- The jute industry was providing support to 3.7 lakh workers and 40 lakh small and marginal farmers (jute cultivators)

Challenges faced by the industry:

- Stiff competition in the international market from synthetic substitutes and from other competitors like Bangladesh, Brazil, Philippines, Egypt and Thailand.

Steps taken by Government:

- Government formulated the policy of mandatory use of jute packaging to increase internal demand for jute.
- 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.

The main markets are U.S.A., Canada, Ghana, Saudi Arabia, U.K., Australia.

Globally, Increasing opportunity for jute products:

Due to concern for environment friendly and biodegradable materials.

Sugar Industry:

1. India is the 2nd largest producer of sugar but occupies the first place in the production of gur and khandsari.
2. The raw material used in this industry is bulky.
3. This industry is seasonal.
4. It is ideally suited to the cooperative sector.
5. In 2010-11, there were over 662 sugar mills in the country spread over Uttar Pradesh, Bihar, Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh, Gujarat, Punjab, Haryana and Madhya Pradesh.
6. In recent years, there is a tendency for the mills to shift and concentrate in the Southern and Western states, especially in Maharashtra
 - This is because the cane produced here has a higher sucrose content.
 - The cooler climate here ensures a longer crushing season as it prevents drying of cane.
 - The cooperatives are more successful in these states.

Challenges faced by Sugar Industries:

- The Sugar Industry is seasonal in nature.
- India is still using old and inefficient methods of production.
- Delay in transportation.
- The need to maximize the use of [bagasse](#) (the dry pulpy residue left after the extraction of juice from sugarcane).

Mineral-based Industries:

Industries that use minerals and metals as raw materials are called mineral-based Industries.

- a. Iron and Steel Industry
- b. Aluminium Smelting
- c. Chemical Industry
- d. Fertilizer Industry
- e. Cement industry

A) Iron and Steel Industry:

1. Iron and Steel Industry is **basic as well as heavy Industry**

- **Basic:** Other Industries (heavy, medium, light) depend on it.
- **Heavy:** Raw material and finished products are bulky. Steel is needed to manufacture a variety of engineering goods, construction material, defense, medical, telephonic, scientific equipment and a variety of consumer goods.

2. Ideal Location:

- Iron ore, coking coal, limestone and some quantities of manganese are required to harden the steel :-
 - Availability of these will make the location perfect for such industries.
 - Efficient transport network for the distribution of finished products to the markets and consumers.
- 3. India ranked 3rd among the world crude steel producers with 95.6 million tonnes in 2016*
- 4. It is the largest producer of sponge Iron.
- 5. Per capita consumption of steel was recorded around 63 kg per annum in the country against the world average of 208 kg.
- 6. Most of the Public sector undertaking market their steel through [Steel Authority of India Ltd. \(SAIL\)](#)
- 7. China is the largest producer as well as consumer of steel.
- 8. Chottanagpur plateau region has the maximum concentration of Iron and steel Industries in India.
 - **Factor responsible for this:**
 - Due to the low cost of Iron ore.
 - High grade raw materials in proximity.
 - Cheap labor and vast growth potential in the home market.

Major Challenges faced by Iron and Steel Industries:

- High costs and limited availability of [coking coal](#).
- Lower productivity of labor.
- Irregular supply of energy
- Poor Infrastructure.
- Import of good quality steel.

9. The production of steel is sufficient to meet domestic demand but not for facing international competition.

Steps taken in this regard:

- Liberalization
- Foreign Direct Investment
- Privatization

B) Aluminium Smelting:

1. Aluminium smelting is the **second most important metallurgical industry** in India.
2. **Bauxite** is used as a raw material in the smelters to manufacture Aluminium.

3. It is used to **manufacture aircraft, utensils and wires.**
4. And It has also gained popularity as **substitute of steel, copper, zinc and lead** in a number of Industries because:-
 - It is light in weight.
 - A good conductor of heat.
 - Also, It is **malleable** in nature.
 - and it becomes strong when it is mixed with other metals.
5. **Aluminium smelting plants** in the country are **located in Odisha, West Bengal, Kerala, Uttar Pradesh, Chhattisgarh, Maharashtra and Tamil Nadu (7 states).**
6. India produced about 3.96 million tonnes of aluminium in 2014-15.
7. Two prime factors for location of the Industry are :
 - Regular supply of electricity.
 - An assured source of raw material at minimum cost.

C) Chemical Industries:

1. The chemical industry in India is **fast growing and diversifying.**
2. It **contributes** approximately **3%** of the **GDP.**
3. It is the **third largest in Asia** and occupies the **twelfth place in the world** in terms of its **size.**
4. The chemical industry is its own largest consumer.
5. Chemical industries has two sectors:-
 - Organic Sectors
 - Inorganic Sectors

Organic Sector : It uses organic chemicals like petrochemicals to manufacture synthetic fibers, synthetic rubber, plastic etc.

Organic chemical Industries are located near the oil refineries or petrochemical plants.

Inorganic Sector : Use of inorganic chemicals like sulphuric and nitric acid, Alkalies, soda, Ash to manufacture fertilizers, paints, glass soaps and detergents, paper etc.

Inorganic chemical industries are widely spread over the country.

D) Fertilizer Industry:

1. India is an agrarian country and agriculture depends a lot on fertilizers.
2. Its fertilizer industries are centered around the production of **Nitrogenous fertilizers** (mainly Urea) and **complex fertilizers** which have a combination of Nitrogen (N), phosphate (P) and Potash (K).
3. Our country India is the 3rd largest producer of Nitrogenous Fertilizers.
4. Potash is entirely imported in our country.
5. The Green Revolution helped the industry to expand in other parts to expand in other parts of the country.
6. No. of **fertilizer units for manufacturing** nitrogenous and complex nitrogenous fertilizers – **57**
7. Fertilizer units for urea – **29**

8. Fertilizer units for ammonium sulphate as a by product- **09**
9. No. of other small units produce single superphosphate- **68**
10. There are **10 public sector undertakings** and **one in the cooperative sector at Hazira in Gujarat** under the Fertilizer Corporation of India.
11. **Gujarat, Tamil Nadu, Uttar Pradesh, Punjab and Kerala** contribute towards half of the fertilizer production.
12. Other significant producers are Andhra Pradesh, Odisha, Rajasthan, Bihar, Maharashtra, Assam, West Bengal, Goa, Delhi, Madhya Pradesh and Karnataka.

E) Cement Industry:

1. Cement industry is **essential for construction activity** such as building houses, factories, bridges, ponds etc.
2. This industry requires bulky and heavy raw materials like **limestone, silica, and gypsum**.
3. The **first cement plant was set up in 1904 in Chennai**, Presently most of the plants are concentrated in Gujarat.
4. This industry is doing well in terms of production as well as Exports.
5. East Asia, Middle East, Africa and South Asia are some readily available markets because of improvement in the quality.
6. There is large demand within the country as well.
7. The cement industry made **rapid strides in capacity, process, technology and production** due to :-
 - Decontrol of price and distribution
 - Policy reforms
8. Efforts are being made to **generate adequate domestic demand and supply in order** to sustain this industry.

Automobile Industry:

1. Automobiles provide **vehicles for quick transport** of good services and passengers.
2. Trucks, buses, cars, motorcycles, scooters, three-wheeler and multi-utility vehicles are manufactured in India at various centers.
3. After **Liberalization**, the growth in the Automobile Industry is boosted in India.
4. Foreign Direct Investment (FDI) brought new technology which matched the Global standard.
5. At present, there are **15** manufacturers of **passenger cars** and **multi-utility vehicles**, **9** of **commercial** vehicles, **14** of the **two and three wheeler**.
6. The industry is located around **Delhi, Gurugram, Mumbai, Pune, Chennai, Kolkata, Lucknow, Indore, Hyderabad, Jamshedpur and Bengaluru**.

Information Technology and Electronics Industry:

1. **Electronics Industry :**
 - This industry covers a wide range of products from transistor sets to television, telephone, computers and many other equipment required by the telecommunication industry.
 - Bengaluru has emerged as the electronic capital of India.

- The other important centers for electronic goods are Mumbai, Delhi, Hyderabad, Pune, Chennai, Kolkata, Lucknow and Coimbatore.

2. Information Technology :

- Software technology parks of India have come across **46 locations at different centers in India.**
- However, the major industry **concentration is at Bengaluru, Noida, Mumbai, Chennai, Hyderabad and Pune.**
- This industry has **generated major portion employment** in India (30% of the people employed in this sector are women)
- This Industry has been a major foreign exchange earner in the last two or three years because of its :-
 - Fast growing **Business Processes Outsourcing (BPO)** Sector.
 - The **continuing growth in the hardware and software** is the key to the success of IT industry in India.

Industrial Pollution and Environmental Degradation :

Although India is emerging as an economically growing and developing nation due to the significant contribution of Industries, at the same time, it is becoming the cause of environmental degradation.

- Industries are responsible for four types of pollution:
 - Air
 - Water
 - Land
 - Noise.

The polluting industries also include **thermal** power plants.

Control of Environmental Degradation:

Since, Industries are the main reason for causing pollution. There is a need to focus on this problem seriously. So here are some suggestions :

1. **Minimizing the use of water** for processing by reusing and recycling.
2. **Harvesting of rainwater** to meet water requirements.
3. **Treating hot water and effluents** before releasing them in rivers and ponds.
 - Through **Primary treatment** : mechanical means.
 - Secondary treatment : biological process and
 - **Tertiary treatment**: Biological, chemical and physical processes.
4. **Regulation of use of ground water** by industries.
5. **Installing water treatment plants** at the industrial sites for recycling.

National Thermal Power Corporation Ltd.(NTPC):

- **NTPC** is a major power providing corporation in India.

- It has ISO certification for EMS (Environment Management System)

Category

1. Class 10th

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