10th – Manufacturing Industries I

Production of goods in large quantities by processing raw materials to more valuable products is called manufacturing. Manufacturing industries fall in the secondary sector. People employed in the secondary activities manufacture the primary material into finished goods. The workers employed in steel factories, car, breweries, textile industries, etc fall into this category. The economic strength of a country is measured by the development of manufacturing industries.

Importance of manufacturing: Manufacturing sector is very important and is considered as the backbone of development because

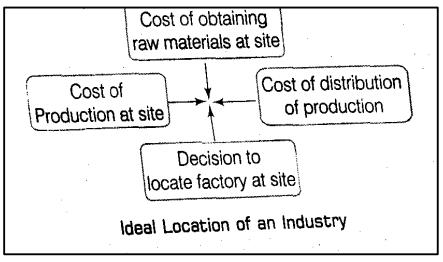
- Manufacturing industries help in modernising agriculture, which forms the backbone of our economy.
- Manufacturing also reduces the heavy dependence of people on agricultural income by providing them jobs in secondary and tertiary sectors.
- Industrial development helps in removal of unemployment and poverty. It also aim bringing down regional differences by establishing industries in tribal and backward areas.
- Export of manufactured goods expands trade and commerce and brings in much
- needed foreign exchange,
- Countries that transform their raw materials into a wide variety of furnished goods of higher value are prosperous. India's prosperity lies in increasing and diversifying its manufacturing industries.

Agriculture and Industries: Agriculture and industries move hand in hand, On one hand many industries sugar, textile, etc depend on agricultural products. On the other hand, many industries: products (fertilisers, insecticides) help in increasing agricultural productivity. Industries in India have given a major boost to agriculture by raising its productivity: Many industries depend on agriculture for raw materials and sell their products such as irrigation pumps, insecticides, PVC pipes machines and tools, etc to the farmer

Development and competitiveness of manufacturing industry has not only assisted agriculturists in increasing their production but also made production process very efficient.

Contribution of industry to national economy: During the last 20 years, the share of the manufacturing sector has stayed at 17 % of GDP. This is much lower some East Asian economies, where it is 25-35 %. However, since 2003 manufacturing is once again growing at the rate of 9 to 10 per cent per annum. To develop the sector of manufacturing industries, government has developed different policies. With these objectives, government has set-up the National Manufacturing Competitiveness Council (NMCC). The different industries also renewed their efforts to improve productivity. Due to these steps, economists assume that sector of manufacturing will achieve its target over the next decade.

Industrial Location: To location of a factory is decided by least cost of available material. Government policies and specialized labour also influence the location of industries. Industrial location is also influenced by availbility of raw material, labour, capital, power and market facilities, Manufacturing activity tends to locate at the places where all the factors of industrial location are either available or can be arranged at lower cost. An industrial



Ideal Location of an Industry

activity is always followed by urbanisation. Sometimes industries are located in or near the cities, thus, industrialisation and urbanisation go hand in hand. In pre-independence period, most manufacturing units were located at coastal areas such as Mumbai, Chennai etc from point of view of overseas trade.

Industry-Market Linkage: Cities provide market to the industry. They also provide services such as banking, insurance, transport, labour, consultants and financial advice, etc. Many industries tend to come together to make use of the advantages offered by the Urban centres known as Agglomeration economies. Gradually, a large industrial agglomeration takes place.

Classification of industries: Industries are classified on the basis of the following criteria

1. On the basis of Raw Materials used:

Agro-based industries: Cotton, woollen, jute, silk textile, rubber, sugar, tea, coffee etc. Mineral-based industries: iron and steel, cement, aluminium, machine tools, petrochemicals.

2. On the Basis of Role Played by them:

Basic or key industries: Industries which supply their products as raw materials to other industries. e.g. iron and steel, copper smelting, aluminium smelting.

Consumer industries: Industries which produce goods for direct consumer use. e.g. sugar, paper, toothpaste, sewing machines, fans etc.

3. On the Basis of Capital Investment:

Small scale industry: Industries with Investment upto 1 crore

Large scale industry: Industries with Investment above 1 crore.

4. On the Basis of Ownership:

Public sector: Owned and operated by government agencies e.g. BHEL, SAIL etc

Private sector: Owned and operated by individuals or a group of individuals e.g. TISCO, Bajaj Auto Ltd, Dabur Industries.

Joint sector venture: Jointly run by the state and individuals or a group of individuals e.g. Oil India Ltd (OIL).

Cooperative sector: Owned and operated by the producers or suppliers of raw materials, workers or both. They pool in the resources and share the profits or losses proportionately such as the sugar industry in Maharashtra, the coir industry in Kerala.

5. On the Basis of the Bulk and Weight of Raw Material and Finished Goods

Heavy industries: Industry in which large machines and heavy or bulky raw materials are used to produce products which are heavy or bulky, including capital goods like automobiles and construction machinery.

Light industries: Industries that produce light utility goods. Electrical industries, toy industry.

National Manufacturing Competitiveness Council (NMCC): It has been set-up by the Government of India to provide a continuing forum policy dialogue to energise and sustain the growth of manufacturing industries in India.

Agglomeration Economies: Agglomeration economies occur when the larger market, lower transportation costs and other benefits outweigh added expenses (such as higher rent or taxes) of working in a city.

Types of industries on the basis of material used

Agro-based industries: Industries that are based on agricultural raw materials belong to this category. e.g. cotton, jute, silk, sugar, woollen textiles, edible oil etc.

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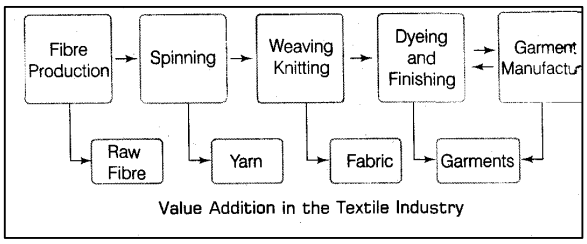
Textile Industry: This industry contributes significantly to industrial production (14%), employment generation (35 million persons directly) and foreign exchange earnings (about 24.6 per cent). It also contributes 4 per cent towards GDP (Gross Production). It is the second-largest industry after agriculture and possesses unique position in the Indian economy. It is the only industry in the country that is self-reliant and corn the value chain, i.e. from raw material to the highest value products.



Value Addition in the Textile Industry

Cotton Textiles: In ancient times, cotton textiles were produced with hand spinning and handloom weaving techniques. After the 18th century, powerlooms came into use. As on 30th November, 2011, there were nearly 1946 cotton and human-made fibre textile mills in the country. About 80% of these are in the private sector and rest are public & cooperative sectors.

First Cotton Textile Mill in India: The first successful cotton textile mill in India was established in Mumbai in 1854 Two world wars were fought in Europe during 1st half of 20th century. There was a demand for cloth in UK. India was a British colony and hence it gave a boost to the development of the cotton textile industry. Though India's traditional cloth industries suffered initially as they could not compete with mill made cloth from England.

Early Phase of cotton textile industry in India: In the early years, the cotton textile industry was concentrated in the cotton growing belt Maharashtra and Gujarat because of availbility of raw cotton, a good market, transport including accessible port facilities, easily available labour, moist climate, etc. In present time, spinning industry continues centralised in Maharashtra, Gujarat Tamil Nadu. Weaving industry is highly scattered for incorporating traditional skills and designs of weaving in cotton, silk, zari, embroidery etc.

Employment Generation through Cotton Mills: This industry provides livelihood to farmers, Cotton boll pluckers and workers engaged in ginning, spinning, weaving, dyeing, packaging, tailoring and sewing. By creating demands for additional material, it supports chemicals and dye industries, mill stores, packaging materials and engineering works. The handspun khadi provides large scale employment to weavers and is important as a cottage industry.

Indian as a cotton Exporter: India Exports yarn to Japan as well as to other countries like France, USA, UK, Russia, European countries, Nepal, Singapore, Sri Lanka & African countries. It has the second largest installed capacity of spindles (43.13 million) in the world in 2011-12 next to China. Now our country has spinning mills that can global level There are some large and modern factories in these segments, but most of the production is in fragmented small units, which cater to the local market. This mismatch between spinning and weaving results in many of our apparel/garment manufactures importing fabric while spinners export cotton yarn.

Challenges for Cotton Textile Industry: Cotton Industries have made significant increase in the production of good quality long staple cotton (356 lakh bales of 170 kg each during 2011-12), but the need to import is still there because of high demand. The industry suffers from problems like outdated machinery (leading to

low productivity), irregular power supply and stiff competition from the synthetic fibre industry.

Jute Textiles: India is the largest producer of raw jute and jute goods. It stands second in the jute export after Bangladesh. The jute industry supports 3.7 lakh workers directly and another 40 lakh small and marginal farmers who cultivate jute and mesta (a substitute plant for jute) in the year 2010-11. The first jute mill was set-up near Kolkata in 1859 at Rishra. After partition in India in 1947, the jute mills remained in India but three-fourth of jute producing area went to Bangladesh. As of 2010-11, there were about 80 jute mills in India. Most of these are located in West Bengal (mainly along the banks of Hugli river).

The factors responsible for the location of jute mills in Hugli basin are:

- Proximity of the jute producing areas reduces the cost of transportation.
- Inexpensive water transport and network of railways, roadways and waterways to facilitate movement of raw material to the mills.
- Abundant water supply from nearby rivers for processing raw jute.
- Cheap labour from West Bengal and adjoining areas i.e. Bihar, Odisha and Uttar Pradesh.

- Kolkata is a large urban centre which provides banking, insurance and port facilities for export of jute goods from Hugli.

Challenges for Jute Industry: Challenges faced by the industry include stiff competition in the international market from synthetic substitutes and from other jute growing countries like Bangladesh, Philippines, Thailand, Brazil and Egypt. The internal demand has increased due to the government policy of mandatory use of jute packaging in many products. It is advised that in order to stimulate demand, the products need to be diversified.

Government Policies for Jute Industry: In 2005, the National Jute Policy was formulated with the objective of improving productivity and quality, ensuring good prices to the jute farmers and enhancing the yield per hectare. The main markets of jute are USA, Canada, Russia, UK, Australia and United Arab Republic. The growing global concern for environment-friendly and biodegradable materials has again opened the opportunity for jute products.

Sugar Industry: India stands second in the world in sugar production. and the first in the production of gur and khandsara. The raw material used in this industry (sugarcane is bulky and in transport its sucrose content reduces. 2010-11, there were over 662 sugar mills in the country spread over many states like Uttar Pradesh, Bihar, Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh and Gujarat along with Punjab, Haryana and Madhya Pradesh. Out of which 60% mills are in UP and Bihar. This industry is seasonal in nature so, it is ideally suited to the cooperative sector. In recent years, there tendency for the mills to concentrate in the Southern and Western states, especially in Maharashtra. This is because the cane produced here has higher sucrose content and relatively cooler climate also ensures a longer crushing season.

Challenges for Sugar Industry: Major challenges include the seasonal nature of industry, old and inefficient methods of production, transport delay in reaching cane to factories and the need to maximise the use of by-products like baggase.

Mineral Based Industries

Iron & Steel Industry: It is a basic industry since all the other industries - heavy,

medium and light depend on it for their machinery. Steel is needed to manufacture engineering goods, construction material, a large variety of equipment and consumer goods. Its production and consumption are often regarded as the index of a country's development. Iron & steel is a heavy industry because all raw materials as well as finished goods are heavy and bulky involving heavy transportation costs. Iron ore, coking coal, limestone and some quantities of manganese are required in approximately 4:2:1 ratio as raw material to harden the steel for this industry.

Facts about Iron and Steel Industry

• India is the largest producer of sponge iron which is an intermediate product of this industry.

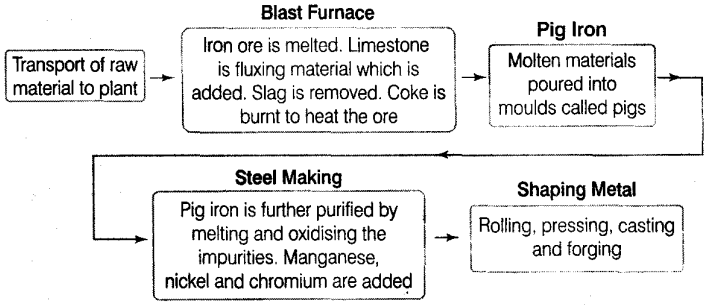
• In 2004, India was the largest exporter of steel which accounted for 2.25% of the global steel trade. However, China is the largest producer as well as consumer of steel.

• In 2010-11 India's steel production stood at 72.2 million tonnes (4th in the world). During same period, per capita consumption of steel in the country was only around 49 kg/annum against the world average of 182 kg/annum.

Location of Iron and Steel Industry: Chotanagpur plateau region has the maximum concentration of iron and steel industries because of the low cost of iron ore locally available, other high-grade raw materials available nearby and availability of cheap labour. Most of the public sector undertakings market their steel through Steel Authority of India Limited (SAIL), while Tata Iron and Steel Company Limited (TISCO) market its products by itself in the name of Tata Steel.

Processes of Manufacture of Steel

The processes of manufacture of steel is shown in the Figure



Challenges for Iron and Steel Industry

India is not able to perform to its full potential in this industry due to

• Limited availability and high cost of coking coal.
• Poor infrastructure.
• Low labour productivity.
• Irregular supply of energy.

Although India imports good quality steel from other countries, the overall production of steel is sufficient to meet its domestic demand. Liberalisation and Foreign Direct Investment (FDI) have boosted the industry, but to produce steel competitively, better research and development is needed in this area.

Mini and Integrated Steel Plants

Mini steel plants are smaller steel plants having electric furnaces. They use steel scrap and sponge iron. They have re-rollers that use steel blocks (ingots) as well. They produce mild and alloy steel of given specifications. An integrated steel plant is large. It handles everything in one complex—from putting together raw material to steel making, rolling and shaping.