

#### Introduction

This is a learning as well as an exam preparation video.

At the end of the video are practice assignments for you to attempt.

Please go to www.eastpoint.intemass.com/ or click on the link at the bottom of this video to do the assignments for this topic.



#### Introduction

Production of goods in large quantities after processing from raw materials to more valuable products is called manufacturing. Industries contribute tremendously to the growth of the country. Industries are included in the secondary sector because they manufacture finished goods from raw materials.

#### Importance of Manufacturing:

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

• It help in modernising agriculture, which forms the backbone of our economy. Also, reduce the heavy dependence of people on agricultural income by providing them jobs in secondary and tertiary sectors.

#### Importance of Manufacturing:

- It helps in eradication of unemployment and poverty from the country.
- Export of manufactured goods brings foreign exchange.
- It helps in transforming raw materials into a wide variety of furnished goods of higher value.

**Contribution of Industry to National Economy:** 

The total contribution of industry to the GDP is 27% out of which 10% comes from mining, quarrying, electricity and gas. The growth of the manufacturing sector had been 7% in the last decade. Since 2003, the growth rate has been 9 to 10% per annum.

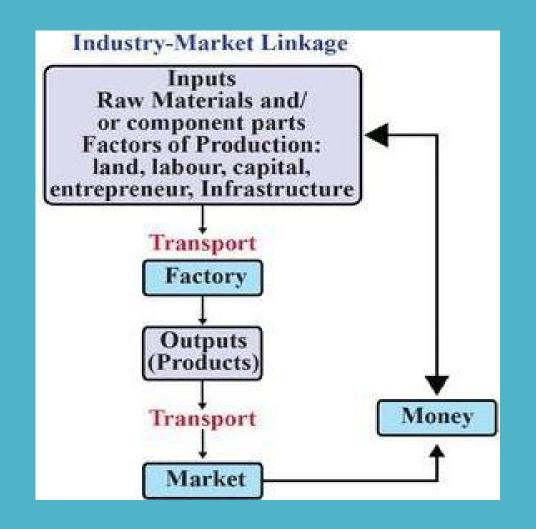
#### **Industrial Location:**

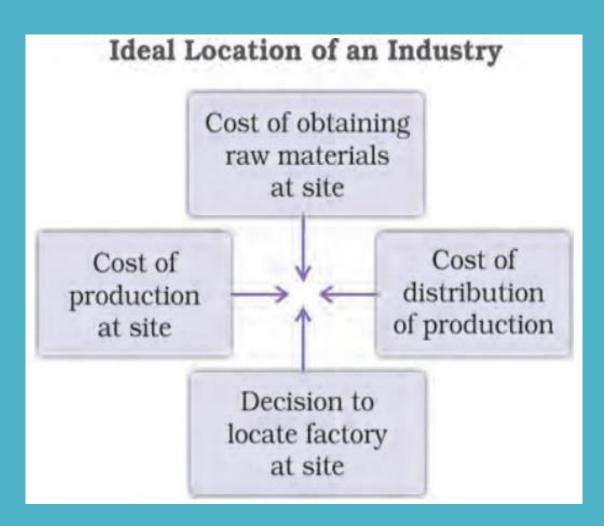
Industrial sites are inherently complex. They are affected by the availability of raw materials, labor, capital, power and market, etc. It is not often possible to find all of these available factors in the same location. As a result, manufacturing activity tends to be at the most appropriate location where all industrial location factors are available or can be arranged more cheaply. Cities provide markets and services such as banks, insurance, transportation, labour, consultants and financial advisory services, etc. to the industry.

#### **Industrial Location:**

Many industries tend to join forces to take advantage of the advantages offered by urban centres called agglomeration economies. Progressively, a major industrial agglomeration is taking place. In the period prior to independence, most manufacturing units were located in places from the standpoint of foreign trade such as Mumbai, Kolkata, Chennai, etc. As a result, pockets of industrially developed urban centres, surrounded by an immense agricultural rural back country, have emerged.

#### **Industrial Location:**





**Classification of Industries:** 

Industries are classified into various categories on the basis of ownership of products, capital investments and nature of raw materials.

**Classification of Industries:** 

Industries Classification on

the basis of

**Examples** 

Agro-based

Raw materials (forest and agricultural raw materials are used) Cotton textiles, jute textiles, tea

Mineral-based

Raw materials (minerals such as iron, bauxite are used) Iron and steel companies, petrochemicals

**Classification of Industries:** 

Industries Classification on

the basis of

Small-scale Capital Investments Cottage industries

Large-scale industries

industries

**Capital Investments TISCO** 

**Examples** 

**Classification of Industries:** 

**Industries** Classification on

the basis of

**Public Sector** Ownership (owned

by the Government)

BHEL, SAIL

**Private Sector** 

Ownership (owned Reliance, TISCO privately by individuals)

**Examples** 

**Classification of Industries:** 

Industries Classification on

the basis of

Joint Sector Ownership (owned Oil India Ltd.

by the Government

**Examples** 

and private

individuals)

Cooperative Sector Ownership (owned Amul

and operated by

producers and

suppliers)

**Classification of Industries:** 

Industries Classification on

the basis of

Heavy Industries Weight and

bulkiness of raw

materials

**Examples** 

Automobile

industries

**Light Industries** 

Weight and bulkiness of raw materials

**Electrical industries** 

**Agro-based Industries:** 

Cotton textiles, woollen textiles, jute and sugar industries are known as agro-based industries as they use agricultural products as raw materials.

#### **Textile Industries:**

It's the only industry in India that is autonomous and comprehensive in the value chain, i.e. from raw materials into higher value-added products. It contributes to industrial production, employment creation and foreign exchange income.

It contributes 14% to industrial production in India and the second largest provider of employment opportunities after agriculture. It contributes 4% towards the GDP of the country.

#### **Cotton Textiles:**

- It is one of the traditional industries of India. About 80% of the industries are owned privately, while 20% are owned by the Government and cooperative societies.
- Most of the cotton industries earlier were centred in Maharashtra and Gujarat because of the existence of humid climate and the availability of cotton, markets, transport facilities and cheap labour.

#### **Cotton Textiles:**

- Weaving is done by handloom, power looms and in mills. Khadi industries also provide employment opportunities to a large section of society.
- USA, UK, Russia, France, Singapore, Sri Lanka and many African countries import cotton textiles from India. We also export yarn to Japan.

#### **Cotton Textiles:**

• Some drawbacks of the cotton industries are that spinning and weaving units of the country cannot use high-quality yarn produced in the country. Production takes place in small factories which cater to only local markets. This is the reason that while we export cotton yarn, fabrics have to be imported. Low productivity of labour, irregular supply of electricity and tough competition from the synthetic fibre industry have hit the cotton textile industries hard.

#### **Jute Textiles:**

- India is the largest producer of raw jute and the second largest exporter of jute products in the world after Bangladesh.
- Most jute mills are located in West Bengal along the Hugli River. This is because this area has many jute-growing fields, cheap water transport, cheap labour and a good network of railways and roadways. Kolkata provides financial assistance to the jute industries.

#### **Jute Textiles:**

• The jute industry in India is currently facing many problems. There is stiff competition from Bangladesh, Brazil, Egypt and Thailand. Synthetic fibres have also hit the industry hard. To improve the condition of jute industries, the Government formulated the National Jute Policy. Main countries which import jute products are USA, Canada, Australia and the United Arab Emirates.

#### **Sugar Industry:**

- India is the second largest producer of sugar in the world and the largest producer of gur and khandsari.
- Sugar mills are located close to the sugar fields. This is because sugar is bulky to transport and can quickly lose sucrose content.
- Most of the sugarcane mills are located in Uttar Pradesh, Bihar, Karnataka, Tamil Nadu, Andhra Pradesh and Gujarat. Old and inefficient methods of production and delay in transport of raw materials are two main causes which are hitting the sugarcane industries hard.

#### **Mineral-based Industries:**

Industries which are using minerals as raw materials are known as mineral-based industries. Some important mineral-based industries are

**Iron and Steel Industry** 

• India is the fourth largest producer of steel in the world and the largest producer of sponge iron.

**Iron and Steel Industry:** 

• It is known as a basic industry as steel is needed for machinery of all industries whether heavy, medium or light. Steel is also required for manufacturing a variety of engineering, construction and defence goods. Day-to-day consumer goods such as containers and safety pins are made of steel. It is also a heavy industry as all its raw materials and finished goods are heavy and bulky.

#### Iron and Steel Industry:

- Many iron and steel industries are located in the Chotanagpur Plateau as many iron ore fields are located in the surrounding regions. Availability of cheap labour and growth potential have led to the concentration of industries in the region.
- Despite India being a major producer of iron and steel, it is not able to perform to its potential. This is due to many reasons such as high costs and limited availability of coking coal, irregular supply of electricity and poor infrastructure facilities. However, liberalisation and foreign direct investments have given the industry a much-needed boost.

#### **Aluminium Smelting:**

#### **Aluminium Smelting**

• It is the second most important metallurgic industry in India. Because aluminium is light in weight, a good conductor of electricity, resistant to corrosion and easily malleable, it is used in the manufacturing of aircraft. It is also used in making utensils and wires.

#### **Aluminium Smelting:**

- Bauxite is the main raw material in the industry. Aluminium smelting plants are mostly located in places where there is a regular supply of electricity and steady assurance of raw materials.
- Aluminium smelting plants are mainly located in Odisha, West Bengal, Kerala, Uttar Pradesh, Chhattisgarh, Maharashtra and Tamil Nadu.

#### **Chemical Industries:**

#### **Chemical Industries**

• It is one of the fastest growing industries in India. It contributes about 3% to India's GDP. It is the third largest in Asia and twelfth largest in the world.

#### **Chemical Industries:**

- Chemical industries in India produce both organic and inorganic chemicals. Inorganic chemicals are used as raw materials for manufacturing many finished goods. These include synthetic fibres, plastics, paints and adhesives. Sulphuric acid is used for manufacturing fertilisers, while soda ash is used for making glass, soaps and detergents.
- Organic chemicals include petrochemicals which are used for making synthetic fibres, plastics and dyes.

#### Fertiliser Industry:

#### **Fertiliser Industry**

- The fertiliser industries mainly produce fertilisers which contain nitrogen, potash and ammonium phosphate. India is the third largest producer of nitrogenous fertilisers.
- The fertiliser industry expanded after the Green Revolution. Some main plants are located in Gujarat, Tamil Nadu, Uttar Pradesh, Punjab, Odisha and Rajasthan.

#### **Cement Industry:**

#### **Cement Industry**

- The cement industry is an important industry as it is important for the construction of houses, buildings, offices, bridges and dams.
- The industry uses bulky raw materials such as silica, limestone, alumina and gypsum. Coal, regular electric supply and good infrastructure facilities are other important requirements of the industry.

#### **Cement Industry:**

- The first cement plant was established in Chennai in 1904. Since then, it is continuously expanding because of many reasons. Decontrol of prices; promulgation of many reform movements related to the industry; the requirement of cement in building of roads, houses, railways and bridges; and the availability of international markets are some factors which have led to the development of cement industries in India.
- Indian cement is exported to the Middle East, East Asia, South Asia and Africa.

#### **Automobile Industry:**

- Many vehicles such as cars, trucks, motor cycles and three wheelers are manufactured in India. The demand for cars has drastically increased in the country.
- Foreign direct investments have brought new technology into the country.
- Automobile industries are located in Gurgaon, Delhi, Pune, Chennai, Mumbai, Indore, Jamshedpur and Bengaluru.

#### **Electronics Industry and Information Technology:**

- In India, there is a great demand for electronic products such as televisions, phones, pagers, radars and computers. The electronics industry is critical for the defence of the country.
- India has become a major hub of the information industry. Important technology parks are present in Bengaluru, Pune and Hyderabad.
- About 30% of this industry's workforce consists of women. The IT industry has been a major earner of foreign exchange for the country.

#### **Industrial Pollution:**

Four types of pollution are caused by industries. These are

Type of Pollution
Air Pollution

Sources

Release of gases such as sulphur dioxide and carbon monoxide by industries and vehicles.

**Impact** 

Hazardous to human health, animals and plants. Can cause irritation and respiratory problems

**Industrial Pollution:** 

Type of Pollution Water Pollution

Sources

Release of chemical discharges into rivers or lakes mainly by paper, chemical and heavy industries and refineries.

**Impact** 

Dangerous for human, aquatic organisms and plants.

#### **Industrial Pollution:**

Type of Pollution

Land Pollution

Sources

Dumping of industrial wastes causes the degradation of soil. Rainwater seeps into the soil carrying these pollutants underground.

**Impact** 

Loss of soil fertility which further reduces agricultural production and deterioration of the quality of underground water.

#### **Industrial Pollution:**

Type of Pollution

Thermal and Noise Pollution

Sources

Thermal plants cause thermal pollution when they discharge hot water into water bodies. Noise pollution is caused by construction activities, heavy industries and generators.

**Impact** 

Thermal pollution affects marine and plant life. Noise pollution can cause hearing impairment, increase in heart rate and blood pressure.

#### **Steps to Control Environment Degradation:**

- Minimising use water for processing by reusing and recycling it in two or more successive stages.
- Harvesting of rainwater to meet water requirements.
- Treating hot water before releasing it into water bodies
- Overdrawing of ground water reserves by industry where there is a threat to ground water resources also needs to be regulated legally.

#### **Steps to Control Environment Degradation:**

- Particulate matter in the air can be reduced by fitting smoke stacks to factories with electrostatic precipitators, fabric filters, scrubbers and inertial separators. Smoke can be reduced by using oil or gas instead of coal in factories.
- Machinery and generators should be fitted with silencers to reduce noise pollution.

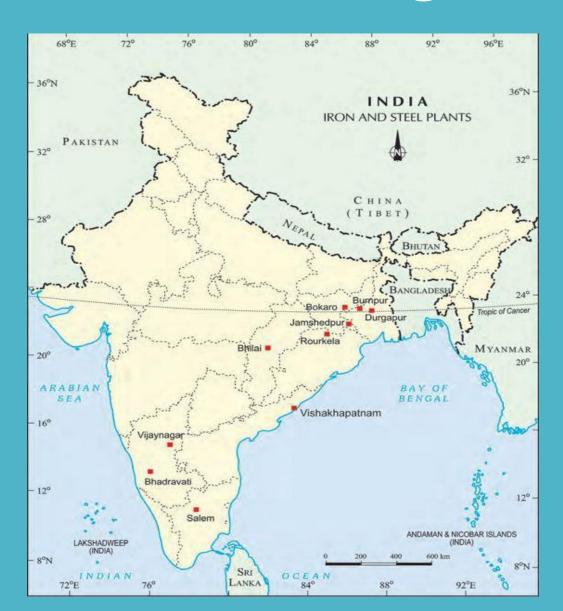
Efforts Made by NTPC towards Cleaning the Environment:

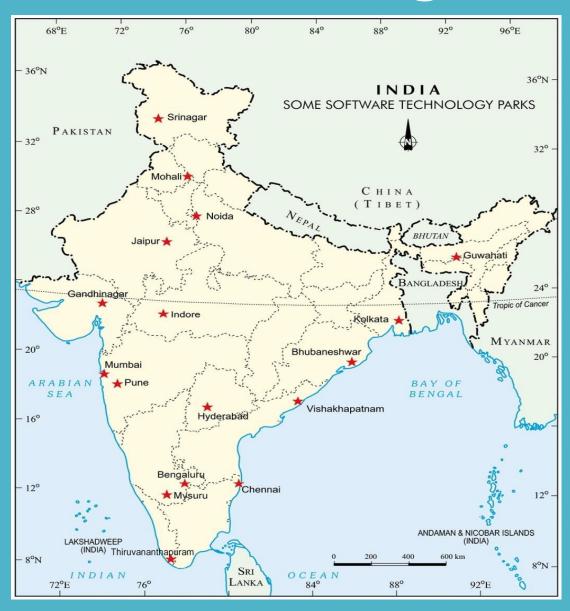
- NTPC has been using the latest techniques and has upgraded its existing equipment. This has helped in reducing wastage of resources.
- It has been able to minimise the generation of waste materials by maximising the use of ash.
- It has been making efforts to reduce environmental pollution by liquid waste management and ash water recycling systems.

Efforts Made by NTPC towards Cleaning the Environment:

- NTPC also supervises and reviews ecological parameters of the surrounding areas where its power stations are located.
- It has laid down green belts to maintain ecological balance in regions surrounding its power stations.







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