



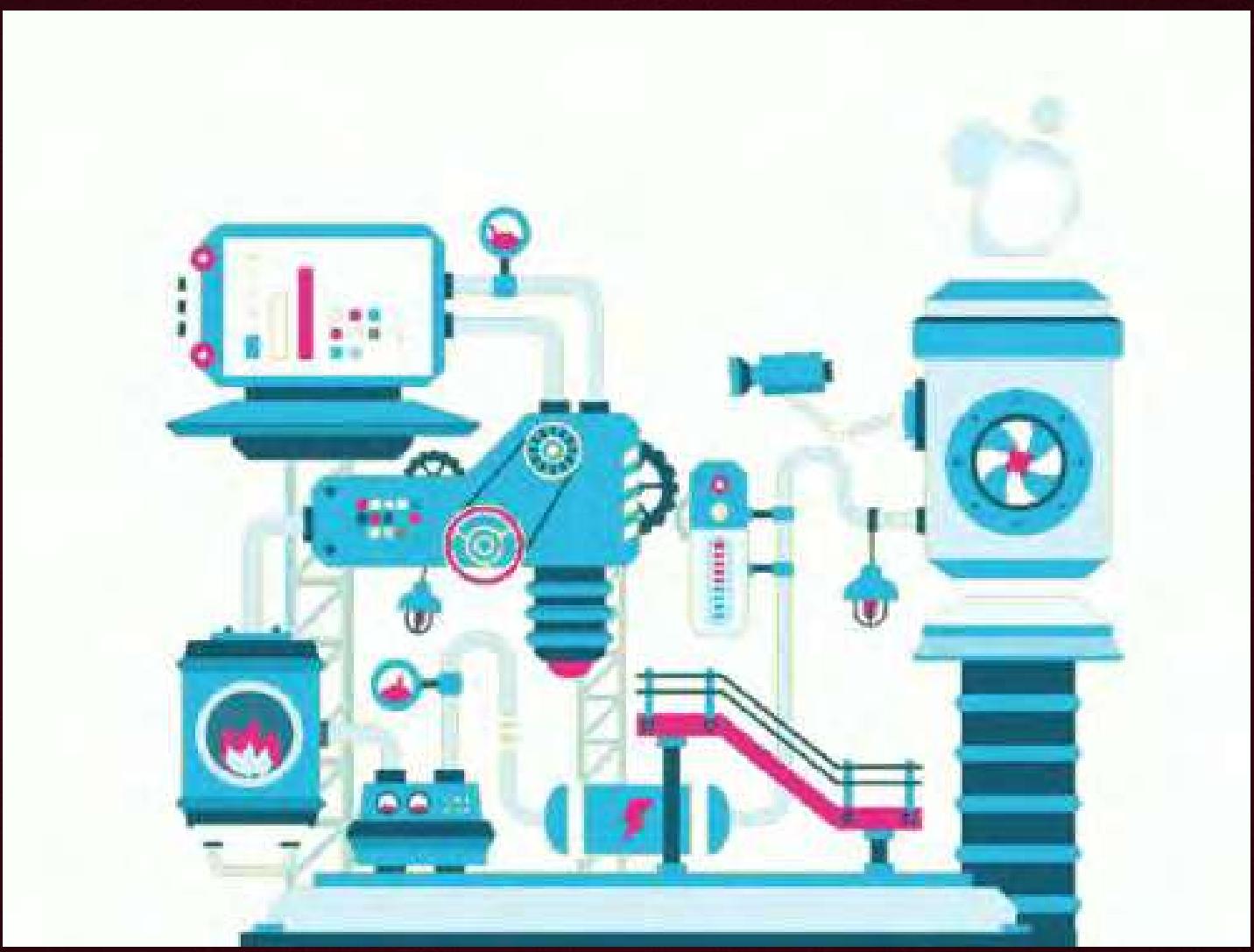
Topics

to be covered



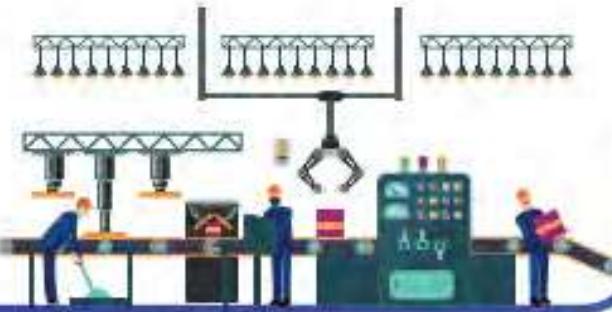
- 1 Industries-Importance ✓
- 2 Industries-Classification ✓
- 3 Agro and Mineral Based Industries ✓
- 4 Industrial Pollution ✓





1. Introduction

- Production of goods in large quantities after processing from raw materials to more valuable products is called manufacturing.
- Manufacturing industries fall in the secondary sector.
- The economic strength of a country is measured by the development of manufacturing industries.



● 2. Importance of Manufacturing

- helps in modernising agriculture, which forms the backbone of our economy. Also, reduces the heavy dependence of people on agricultural income by providing them jobs in secondary and tertiary sectors.
- helps in eradication of unemployment and poverty from the country.
- Export of manufactured goods brings foreign exchange.
- helps in transforming raw materials into a wide variety of furnished goods of higher value.

● 3. Agriculture and Industry ●

Agriculture and industry are dependent on each other.

- Industries give a major boost to agriculture by raising its productivity by providing their tools and products such as fertilisers etc. ✓
- Industry depends on agriculture for raw materials and sell their products such as irrigation pumps, fertilisers, insecticides, pesticides plastic and PVC pipes, machines and tools, etc. to the farmers.



4. Classification of Industry

a. On the basis of source of raw materials used:

- o Agro based: cotton, woollen, jute, silk textile, rubber and sugar, tea, coffee, edible oil.
- o Mineral based: iron and steel, cement, aluminium, machine tools, petrochemicals

b. According to their main role:

- o Basic or key industries → which supply their products or raw materials to manufacture other goods e.g. iron and steel and copper smelting.
- o Consumer industries → that produce goods for direct use by consumers – sugar, toothpaste.

c. On the basis of capital investment:

- o Small scale industry: Such industry which requires the maximum investment up to rupees 1 crore. It employs a small number of labourers.
- o Large scale industry: Investment is more than 1 crore





d. On the basis of ownership:

- o Public sector: Industries which are owned and operated by government agencies – BHEL, SAIL etc.
- o Private sector: Industries owned and operated by private individuals – TISCO, Bajaj Auto Ltd.
- o Joint sector: jointly run by the state and individuals or a group of individuals. Oil India Ltd. (OIL) is jointly owned by public and private sector.
- o Cooperative sector: owned and operated by the producers or suppliers of raw materials, workers or both.



e. Based on the bulk and weight of raw material and finished goods:

- o Heavy industries such as iron and steel
- o Light industries that use light raw materials and produce light goods such as electrical industries.



5. Agro Based Industries

Cotton, jute, silk, woollen textiles, sugar and edible oil industries are based on agricultural raw materials.



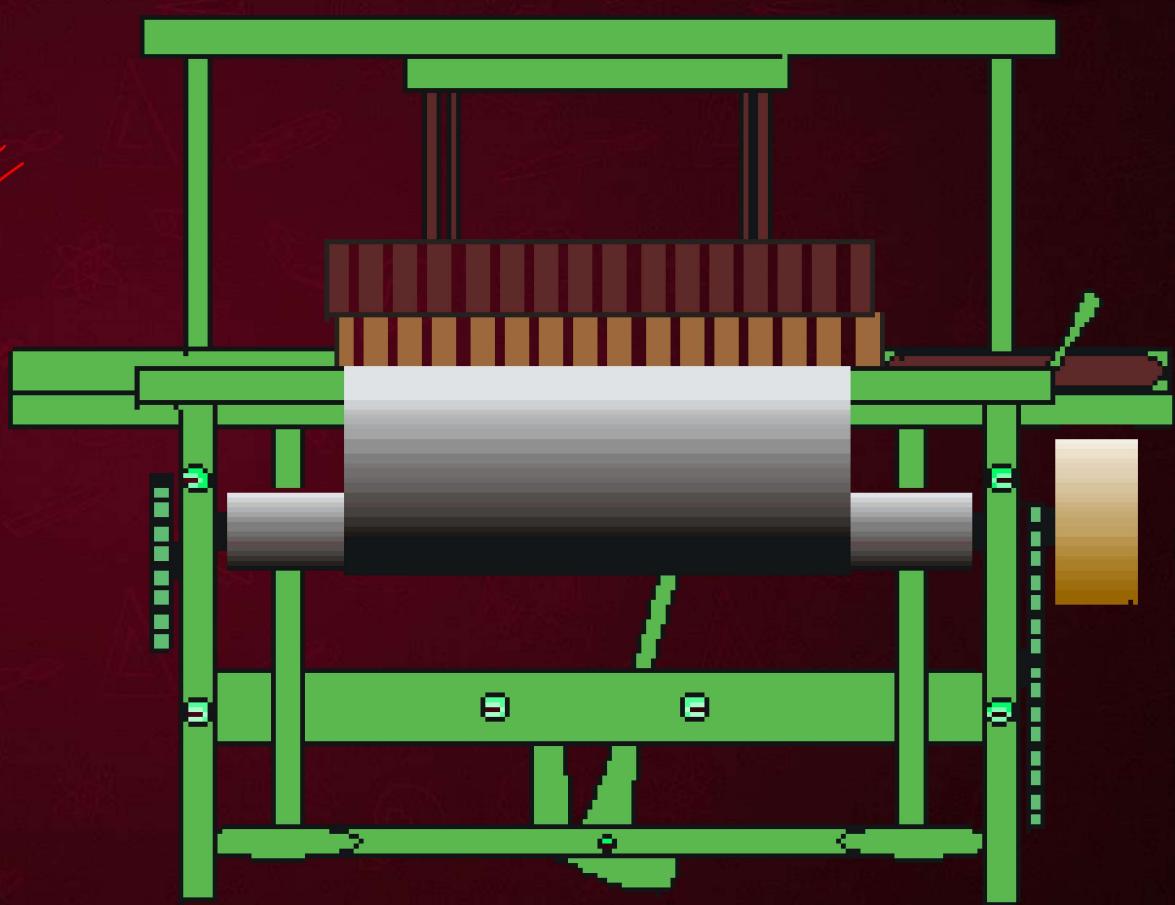
Textile Industry

- o It contributes significantly to industrial production, employment generation and foreign exchange earnings.
- o It is the only industry in the country, which is self-reliant and complete in the value chain i.e., from raw material to the highest value added products



Cotton Textiles

- o In ancient India, cotton textiles were produced with hand spinning and handloom weaving techniques.
- o After 18th century, power -looms came into use.
- o Our traditional industries suffered a setback during the colonial period because they could not compete with the mill-made cloth from England.
- o The first successful textile mill was established in Mumbai in 1854.
- o Spinning continues to be centralised in Maharashtra, Gujarat and Tamil Nadu however weaving is highly decentralised to provide scope for incorporating traditional skills and designs of weaving in cotton, silk, zari, embroidery, etc.





Jute Textiles

- o In India is the largest producer of raw jute and jute goods and stands at second place as an exporter after Bangladesh.
- o The first jute mill was set up near Kolkata in 1855 at Rishra.

Most of the mills are located in West Bengal, mainly along the banks of the Hugli River, in a narrow belt, because:

- Presence of the jute producing areas
- Inexpensive water transport
- Supported by a good network of railways, roadways and waterways to facilitate movement of raw material to the mills
- Abundant water for processing raw jute
- Cheap labour from West Bengal and adjoining states of Bihar, Orissa and Uttar Pradesh.
- Kolkata as a large urban centre provides banking, insurance and port facilities for export of jute goods.



Sugar Industry

- o India is the second largest producer of sugar in the world and largest producer of gur and khandsari.
- o In 2010-11 there were over 662 sugar mills in the country spread over Uttar Pradesh, Bihar,
- o Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh and Gujarat along with Punjab, Haryana and Madhya Pradesh.
- o 60 % mills are in Uttar Pradesh and Bihar.



6. Mineral based Industries

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

Minerals
↳ used as Raw Materials

1

Iron and Steel Industry

- The iron and steel Industry is the basic industry as it provides all types of machinery to run all the other industries.
- Steel is needed to manufacture a variety of engineering goods, construction material, defence, medical, telephonic, scientific equipment and a variety of consumer goods.
- Production and consumption of steel is often regarded as the index of a country's development.
- Chhotanagpur plateau region has the *maximum concentration of iron and steel industries.*

**2**

Aluminium smelting

- Second most important metallurgical industry in India.
- The raw material used in the smelters is called Bauxite. Al.
- It is light, resistant to corrosion, a good conductor of heat, malleable and becomes strong when it is mixed with other metals.
- Used to manufacture aircraft, utensils and wires.
- located in Odisha, West Bengal, Kerala, Uttar Pradesh, Chhattisgarh, Maharashtra and Tamil Nadu.



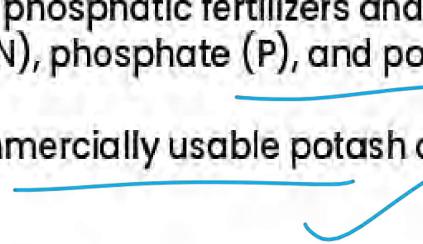


7. Chemical Industries

- o This Industry in India is fast growing and diversifying.
- o It comprises both large and small-scale manufacturing units.
- o Organic and inorganic sectors of the Chemical industry are rapidly growing.
 - Organic chemicals include petrochemicals (used for manufacturing of synthetic fibres, synthetic rubber, plastics, dye-stuffs, drugs and pharmaceuticals).
 - Inorganic chemicals include sulphuric acid (used to manufacture fertilisers, synthetic fibres, plastics, adhesives, paints, dye-stuffs), nitric acid, alkalies, soda ash (used to make glass, soaps and detergents, paper) and caustic soda.



● 8. Fertiliser Industry ●

- o This industry is centred on the production of nitrogenous fertilizers (mainly urea), phosphatic fertilizers and ammonium phosphate (DAP) and complex fertilizers which have a combination of nitrogen (N), phosphate (P), and potash (K). 
- o The potash is entirely imported as the country does not have any reserves of commercially usable potash or potassium compounds in any form. 
- o After the Green Revolution the industry expanded to several other parts of the country. 
- o Gujarat, Tamil Nadu, Uttar Pradesh, Punjab and Kerala contribute towards half of the fertilizer production. 
- o Other significant producers are Andhra Pradesh, Odisha, Rajasthan, Bihar, Maharashtra, Assam, West Bengal, Goa, Delhi, Madhya Pradesh and Karnataka 



● 9. Cement Industry ●

- Used for construction activity such as building houses, factories, bridges, roads, airports, dams and for other commercial establishments.
- This industry requires bulky and heavy raw materials like limestone, silica, alumina and gypsum.
- The industry has strategically located plants in Gujarat.
- The first cement plant was set up in Chennai in 1904.
- Decontrol of price and distribution since 1989 and other policy reforms led the cement industry to make rapid strides in capacity, process, technology and production.
- This industry is doing well in terms of production as well as export.

● 10. Automobile Industry ●

- This industry provides vehicles for quick transport of goods and passengers.
- Foreign Direct Investment brought in new technology and aligned the industry with global developments.
- The industry is located around Delhi, Gurugram, Mumbai, Pune, Chennai, Kolkata, Lucknow, Indore, Hyderabad, Jamshedpur and Bengaluru



11. Information Technology and Electronics Industry

- o The electronics industry covers a wide range of products from transistor sets to Televisions, telephones, cellular telecom, pagers, telephone exchange, radars, computers and many other equipment required by the telecommunication industry.
- o Bengaluru has emerged as the electronic capital of India.
- o Other important centres for electronic goods are Mumbai, Delhi, Hyderabad, Pune, Chennai, Kolkata, Lucknow and Coimbatore
- o The IT industry has employed a mass number of people.

12. Industrial Pollution and Environmental Degradation



Industries are responsible for four types of pollution:

- (a) Air
- (b) Water
- (c) Land
- (d) Noise



a. Air pollution

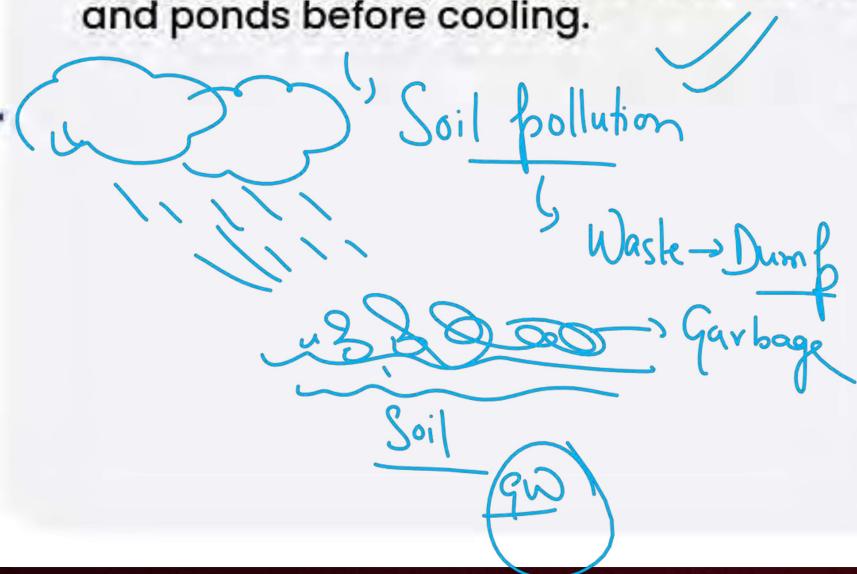
- o It is caused by the presence of high proportion of undesirable gases, such as sulphur dioxide and carbon monoxide.
- o Smoke is emitted by chemical and paper factories, brick kilns, refineries and smelting plants, and burning of fossil fuels in big and small factories that ignore pollution norms.
- o It adversely affects human health, animals, plants, buildings and the atmosphere as a whole.

b. Water Pollution

- o It is caused by organic and inorganic industrial wastes and effluents discharged into rivers.
- o Fly ash, phospho-gypsum and iron and steel slags are the major solid wastes in India.

c. Thermal pollution

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



d. Noise pollution

- Industrial and construction activities, machinery, factory equipment, generators, and electric drills also make a lot of noise.
- It causes hearing impairment, increased heart rate and blood pressure among other physiological effects.

13. Control of Environmental Degradation

Some suggestion to reduce the industrial pollution of fresh water are:

- 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 and effluents before releasing them in rivers and ponds.

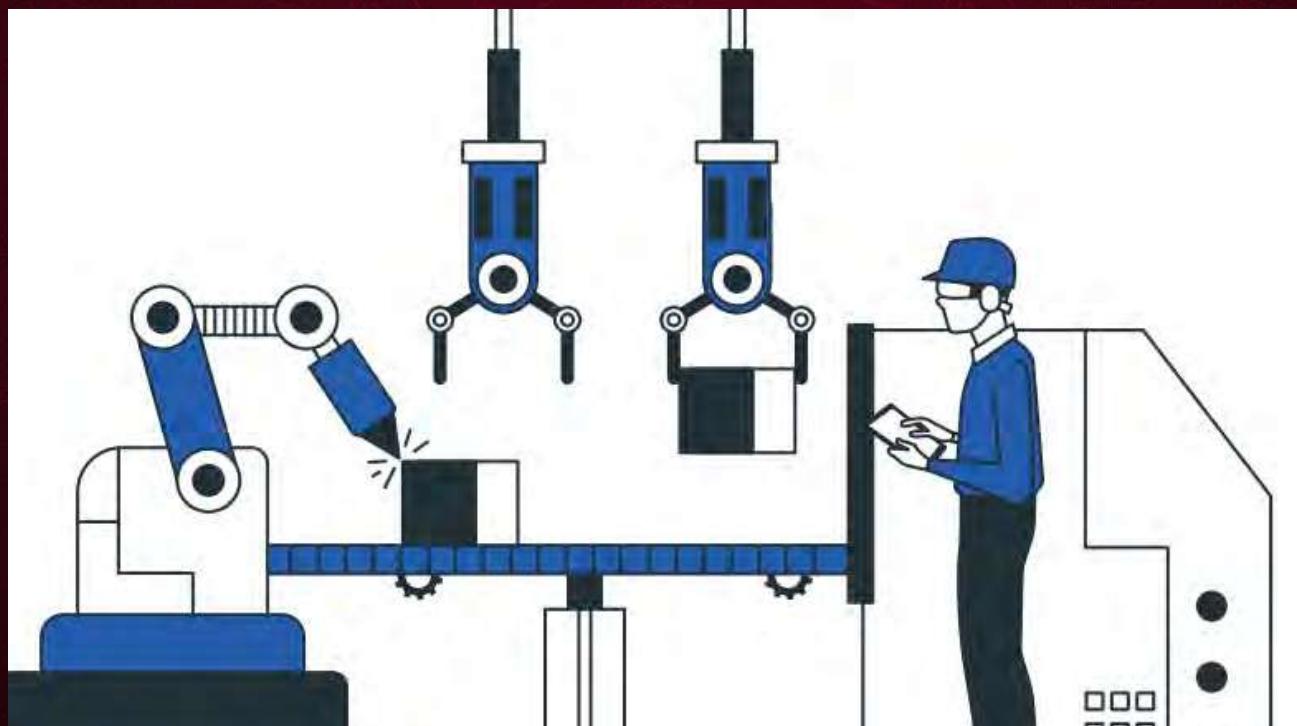
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Measures to control air pollution:

- 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.

Measures to control noise pollution:

- Machinery and equipment can be used and generators should be fitted with silencers.
- Noise absorbing material may be used apart from personal use of earplugs and earphones.





Ques

Two steps to reduce pollution
of freshwater ?