



Basically industry was the production of a particular type of goods. Later on providing of a particular type of services was also included in it like information technology and tourism. Extraction of minerals is also an industry. Goods can be produced from minerals or agricultural products both of which are natural resources. Agricultural products include forest products and animal products. **Industry is an economic activity** as economics is the study of the way in which goods and money are produced and used.

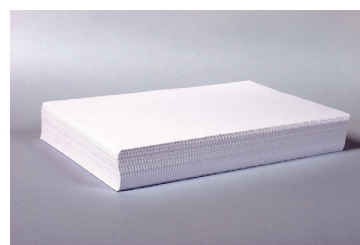
To define industrial activities clearly, we have to first understand the types of **economic activities**. Production of crops or livestock and extraction of minerals are **primary activities**. And crops, livestock and minerals are called primary products. Changing or processing raw materials (primary products) into **products of more utility and value** is called **secondary activity or manufacture**. The paper made from pulp and cloth made from cotton have had **value added to them at each stage** of the **production process or manufacture process**. **Secondary products** are more usable and hence are of greater value. We cannot write with raw graphite but a pencil lead made of graphite can be easily used to write. A notebook of paper made from wood pulp is more useful than wood. Thus, in short, the process of transforming primary products into secondary products to add to their value is called **manufacturing**. However, the word 'manufacture' also means process of making goods usually in large numbers or amounts using machinery or extensive labour.

A large organisation, large investment of money, specialised labour with specific jobs, extensive use of machines, qualified professionals who find ways to produce more goods with less effort at lower cost, research and development are all **features of modern manufacturing industry**.

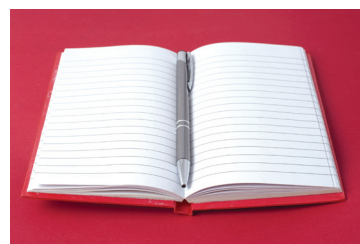
Service type of activities linking primary and secondary activities and supporting them are called **tertiary activities** like transport, banking, insurance, wholesaling, retailing, information technology,



Bamboo



Paper sheets



Notebook

etc. Some activities out of tertiary activities like education, research and development, science and technology and communication are now known as **quarternary activities**.

Classification of Industries

Industries can be classified/grouped on the basis of raw materials, size and ownership.

On the Basis of Raw Materials

On the basis of raw materials industries can be classified into following four categories :

1. **Agro based industries** use plant products and animal products as their raw materials. For example, food processing, vegetable oil, sugar, cotton textile, jute, dairy products and leather industries.
2. **Forest based industries** utilise forest produce as raw materials. For example, pulp and paper, plywood and hard board, furniture, pharmaceutical industries.
3. **Marine based industries** use marine animals or sometimes marine plants as raw materials. For example, sea food processing, fish oil industries.
4. **Mineral based industries** use mineral ores as their raw material. For example, iron and steel, aluminium, copper, chemical industries. The products of these industries are used as raw materials by other industries for the manufacture of a number of other products. For example, heavy machinery, aircraft, railway coaches, building materials, etc.

On the Basis of Size

Size of an industry refers to the amount of capital invested, number of people employed and the volume of production. On the basis of size industries can be classified into two categories :

1. **Large scale industries** invest higher amount of money, employ a large number of people and use superior technology. For example, production of automobiles and heavy machinery, cotton textile units etc.
2. **Small scale industries** use lesser amount of money and technology, employ less number of people. For example, making fans, cycles, weaving silks, etc.

On the Basis of Ownership

Industries can be owned and operated by individuals only, government only, jointly or cooperatively by the producers / suppliers or workers or both. On the basis of ownership industries can be classified into following four categories :

1. **Private sector industries** are owned and operated by private individuals or a group of individuals. They may be sub-classified




Fact File

New industries like Information Technology, Wellness, Hospitality and Knowledge are emerging now. They do not manufacture like the traditional industries, instead they give services. They are also called as 'Sunrise Industries' or 'Service Industries'.



Fact File

Cottage or household industry is a type of small scale industry where the products are manufactured by hand by the artisans. For example, basket weaving, wood carving and other handicrafts, making carpets, handloom textile, etc. However, simple small machines are used in cottage industries now a days.



into proprietary concerns, partnership concerns, private limited companies and public limited companies. The corporates (public limited companies) have a board of management elected by the shareholders. The profits, if any, are also distributed among the shareholders. Reliance, Tata, etc. are brand names of such industries.

2. **Public sector industries** are owned and operated by the government. For example, Hindustan Aeronautics Limited, Steel Authority of India Limited.
3. **Joint sector industries** are owned and operated by the state and individuals or a group of individuals for better results and efficiency. For example, Maruti Udyog Limited, Indian Oil Corporation.
4. **Cooperative sector industries** are owned and operated by the producers or suppliers of raw materials, workers or both. They pool in resources and share the profit proportionately. For example, Anand Milk Union Limited.

Factors Affecting Location of Industries

There are some **basic needs** of a particular industry. For example, humid climate is required by cotton textile industries because the thread does not often break if the atmosphere is humid. Therefore, Mumbai, near the sea, is an ideal location for the same. In the earlier years of industrial revolution, many industries used to be located around coal mines, coal was used both for heating and energy. Similarly, just about half a century back, fertiliser industries located in Vadodara (Gujarat) and Mumbai where natural gas was easily available. Now, gas is transported through pipes or cylinders, so these industries are now located near demand markets in Punjab, Haryana and Uttar Pradesh.

The main factors affecting the location of industries are the availability of raw materials, land, water, uninterrupted power supply at lower rate, skilled and semi skilled labour, capital, transport and market. Besides, suitable climate and terrain (relief), a good drainage with availability of water for cooling machines and disposal of wastes are other important factors that influence the location of industries. Sometimes, state governments provide incentives like subsidies on water, power, etc., rebate in taxes, industrial sheds at cheaper rates and other infrastructure like roads, drains etc. to attract the industrialists to backward states. Industrialisation of a region often leads to its development and growth into large towns and cities. Regions that have conditions favourable for the establishment and growth of industries develop into large industrial areas.

Industrial System

An industrial system consists of inputs, processes and outputs. The inputs are the costs of land, infrastructure, raw materials, labour, power and transport. The processes include a wide range of activities

that convert the raw material into finished products. The outputs are the end product and the money earned from it .



Industrial System in a Textile Industry

Industrial Regions

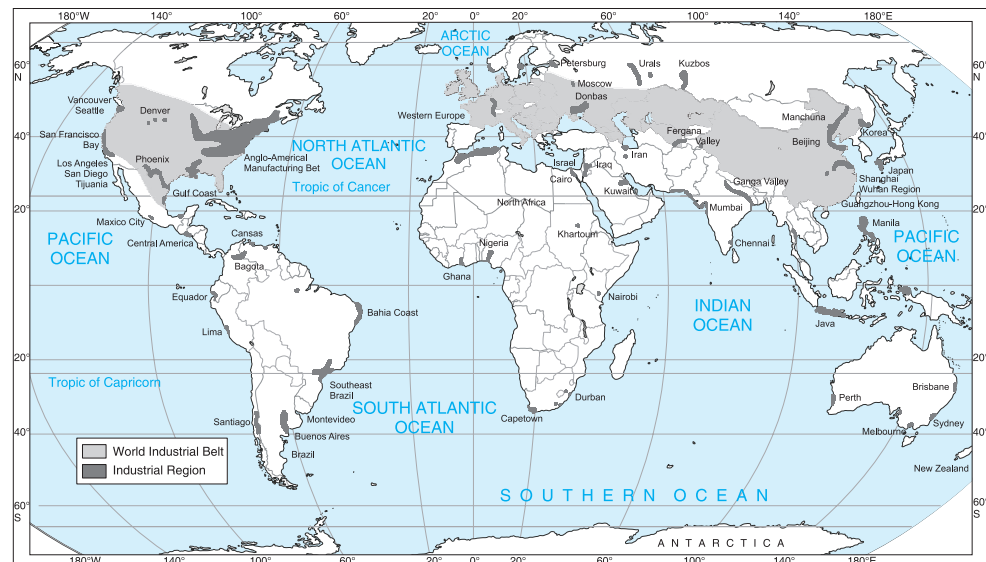
Industrial regions emerge when a number of industries related to each other and interdependent for products and by-products cluster together to take the benefits of availability of raw materials. For example, in the manufacture of sugar, bagasse and molasses are by-products. Some people purchase them from the sugar mill to produce paper from bagasse and ethyl alcohol from molasses. The former is called paper industry and the latter as distillery. Sometimes government makes a plan to establish an industrial region where all type of industries-related or unrelated- are set up. Sometimes the region has all industries of one type, say textiles with some industries supporting them.

Major Industrial regions of the world are (i) eastern North America, (ii) western and central Europe, (iii) eastern Europe and, (iv) eastern Asia (Fig. 7.3). Major industrial regions tend to be located in the temperate areas, near sea ports and especially near coalfields.


Eight industrial belts can be identified in India— (i) Mumbai -Pune cluster, (ii) Bangalore- Tamil Nadu region, (iii) Hugli region, (iv) Ahmedabad-Baroda region, (v) Chotta Nagpur industrial belt, (vi) Vishakhapatnam-Guntur belt, (vii) Gurgaon - Delhi - Meerut region, and (viii) Kollam- Thiruvananthapuram industrial cluster.

Distribution of Major Industries

The world's major industries are the iron and steel industry, the textile industry and the information technology industry. The first two are older and the last one an emerging industry. An automobile industry, commercial vehicles and ship building industry are dependent mainly on iron and steel industry for raw material.



World's Industrial Regions



Major **basic industries** like iron and steel are concentrated on or around coalfields. For example, the Ruhr coalfields sustain the iron and steel industry in Germany. The Damodar Valley coalfields and iron ore in the adjoining states of Jharkhand, Orissa, Chhattisgarh and Madhya Pradesh support the Chhota Nagpur industrial region in India. Coal from Appalachian mountains support the industrial belt in north east USA.

Industrial Disasters

Disaster is a sudden accident which causes great damage and suffering. Accidents in industries occur due to negligence in the handling of toxic or hazardous substances or technical failure.

- (i) Bhopal Gas Leak Disaster of 1984 was one of the worst industrial disasters. It was 00:30 a.m. of


3 December 1984 when highly poisonous Methyl Isocyanate gas along with Hydrogen Cyanide and other reaction products leaked out of the pesticide factory of the Union Carbide (name of the company). It affected the sleeping people up to several kilometres. People fled without knowing what happened and in which direction to go. Thousands died and more suffered from blindness and diseases like impaired immune system. The official death toll was declared 3598 in the year 1989.

- (ii) Gas Well Blow out in Gao Qiao, Chongqing, China left 243 people dead and 9000 injured on 23 December 2005. They could not run or escape. People suffered burns to their eyes, skin and lungs. About 64,000 people were evacuated.

Risk Reduction Measures

1. Stock of the toxic substances in a factory should be kept limited.
2. The workers should be well-trained and aware in the handling of toxic materials and their management in case of an accident.
3. Fire warning and fighting system should be improved.
4. Workers and their family living nearby should be aware of the store of toxic or hazardous materials and their possible effect in case of an accident.
5. Industrial areas should be set up far away from the residential areas. People must not be allowed to make settlements near the hazardous industries.

Rivers also provide the water required for the cooling of machines. Some industrial regions are concentrated near seaports, river ports or rail routes to enable convenient transportation of raw material and finished products, e.g., Vishakhapatnam steel plant, near sea port. **The rise of manufacturing industries in the suburbs** of major towns and cities is a result of 20th century influences like creation of industrial estates, population pressure and creation of jobs. Anyhow, the low cost of production and suitable transportation are the two main factors for the ideal location and development of an industry.



Iron and steel industry is located in Germany, USA, China, Japan, Russia, India and others. Textile industry is concentrated in India, Hong Kong, South Korea, Japan and Taiwan. The major hubs of Information Technology industry are the Silicon Valley of central California in USA and Bangalore in India.

 **Key Words**

- » Capital : money invested in industries.
- » Skilled labour : labour trained to do a particular job.
- » Raw material : forest products, agriculture products or mineral products to make further processed goods.
- » Cottage industry : industry in which goods are produced in the home of the producer.
- » Basic industry : industry that supplies raw material to other industries for further manufacturing or machines.
- » Small scale industry : industry with lesser investment and lesser number of employees.

SUMMARY

- ▶ Industry refers to production of a particular type of goods and providing of a particular type of services.
- ▶ On the basis of raw materials, industries are agro based, forest based, marine based or mineral based.
- ▶ On the basis of size, industries are small scale or large scale.
- ▶ On the basis of ownership, industries are classified into private sector, public sector, joint sector and cooperative sector.
- ▶ Major basic industries like iron and steel are concentrated on or around coalfields.
- ▶ The rise of manufacturing industries in the suburbs is a result of 20th century influences like the creation of industrial estates, population pressure and creation of jobs.

Exercise Time

A. Tick (✓) the only correct choice amongst the following :

1. Which one of the following industries is known as sunrise industry ?
 - a. Iron and steel
 - b. Cotton textile
 - c. Information technology
 - d. Television
2. Industries owned and operated by the state and individuals are
 - a. private sector
 - b. public sector
 - c. cooperative
 - d. joint sector
3. Union carbide factory is located at
 - a. Delhi
 - b. Bhopal
 - c. Gurgaon
 - d. Meerut
4. Basket weaving is
 - a. small scale industry
 - b. cottage industry
 - c. large scale industry
 - d. public sector industry
5. Extraction of minerals is a
 - a. primary activity
 - b. secondary activity
 - c. tertiary activity
 - d. quaternary activity



B. Fill in the blanks :

1. Large clusters of industries form industrial _____.
2. An industrial system consists of _____, processes and outputs.
3. A humid climate favours the _____ industry .
4. Disasters mainly occur due to technical failure or _____ in handling of hazardous material.
5. Iron and steel industries are generally located near the _____.

C. Write true (T) or False (F) against the following statements in given brackets :

1. Public sector industries are under the control of public .
2. Cooperative sector industries are owned and operated by individuals.
3. Iron and steel industry is a basic industry .
4. Agro based industries use minerals as their raw materials.
5. Major industrial regions tend to be located in the temperate areas.

D. Identify (Give the term for) the following :

1. Industries owned and operated by the producers or suppliers of raw materials ,workers or both
2. Processing raw materials into products of more value to people
3. Production of a particular type of goods or providing a particular type of services
4. Inputs, processes and outputs
5. Cluster of related and interdependent industries

E. Answer these question briefly :

1. What is meant by the term industry ? Mention important activities connected with industry.
2. Name the 8 Industrial belts of India.
3. Classify industries on the basis of size.
4. How do you classify industries on the basis of ownership ?
5. What factors influence the location of an industry ?

F. Differentiate between :

1. Small Scale and Large Scale Industries
2. Agro Based and Forest Based Industries
3. Private Sector and Cooperative Sector Industries
4. Public Sector and Joint Sector Industries

G. Answer these questions in detail :

1. Explain basic needs of an industry with examples. What are the factors influencing the location of an industry ?
2. Classify the industries on the basis of raw materials, size and ownership.

PROJECT WORK

1. Categorise industries in your local area on the basis of ownership, raw materials and size.
2. Visit a small scale industry and prepare a project report on how to solve their problems.