Chapter - 9

Secondary Occupations

All the economic activities, whether they are primary, secondary, tertiary or quaternary, work to study the procurement and utilization of regional resources. These resources are essential for human survival. All those activities are termed as Secondary occupations which include refining natural resources, changing their appearance and activities which make them more useful for living. Secondary economic activities increase the value of natural resources. Secondary occupations may be divided into ten major groups (1) Engineering Industry (2) Manufacturing Industry (3) Electronics Industry (4) Chemical Industry (5) Power Industry (6) Textile Industry (7) Food and Beverage Industry (8) Metallurgical Industry (9) Plastic Industry (10) Transport and Communication Industry

Manufacturing Industry

The meaning of Manufacturing Industry is to change the raw materials procured from primary production with help of tools operated by physical or mechanical power by pre determined and controlled processes into articles of any desired form, shape or specific property. The term manufacturing industry often leads to a misconception that it is a large scale industry. But in fact it is not so, this industry can be started at any level. In this regard, from simple articles such as pottery and toys from clay to heavy finished goods like huge machines, vessels, heavy chemicals etc. are included in it. The natural substances used in manufacturing industry are known as Raw material such as metal ore, timber, cotton etc. There are also unmodified substances such as steel , from which instruments and spare parts are made. Paper pulp is produced from slitted wood. Cloth is weaved from cotton yarn.

With the development of the manufacturing industry in any country the national income rises. The country develops. Industrial development is the parameter of economic prosperity of a country. All developed countries of the world like USA, Japan, Germany and Great Britain are industrially developed countries.

Factors affecting the location of Industries

Industries can be established only in those places where necessary geographical conditions are available for their development. Factors affecting the location and development of industries are indicated in Chart 9.1. The following factors affect the location of industries :

(1) Raw Material : Raw material should be easily and abundantly available at affordable prices for the development of any industry. Hence, most of the industries are located near mines, forests, agricultural areas or coastal regions. This tendency is particularly observed in those industries which use heavy, cheap and raw material of weight losing

nature during manufacturing. Otherwise, transportation expenditure will increase. Most of the Iron steel industries are established on a suitable location near coal mines or iron-ore mines or in between coal and iron-ore mines. Industries based on perishable raw materials like fruits, vegetables, milk, fisheries are also established near source of raw material. But certain commodities do not lose weight during the process of manufacturing. For example from a ton of cotton a ton of yarn is produced. Therefore cotton is imported by Japan and Britain for cotton textile industry from USA, Egypt and India. There are some countries like Japan where raw material is not of a particular importance for development of industries. Most of the industries of Japan are based on imported raw material.

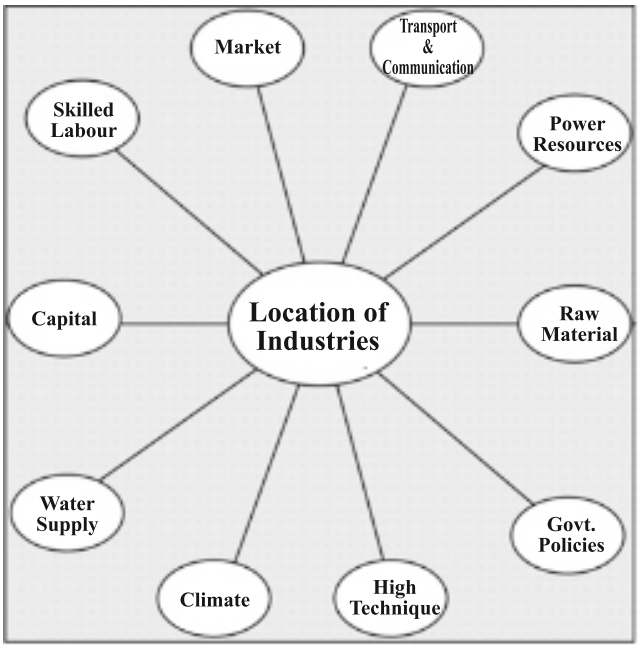

Chart 9.1 Factors affecting the location of Industries

(2) Sources of Energy : Availabilty of source of energy in a proper and approachable manner is important for centralization and development of industries. Major sources of energy are Coal, Petroleum, Hydro-electricity, Natural gas and Atomic power.

Heavy industry like Iron-steel industry gain power from coal. It is established near coal mines. Most of the iron-steel centres in USA, Russia and European countries are located near coal mines. India's major iron-steel centres are located near Jharia and Raniganj coal mines in the Damodar valley. Alluminium industries are established near cheap hydel power stations.

Industries have been decentralized due to transfer of hydro electricity through wires and easy transportation of petroleum and natural gas through pipelines. This is the reason that petroleum and natural gas producing regions could not become big industrial regions.

(3) Means of Transport and Communication : Frequent and efficient means of transport and communication are essential for industrial development to bring raw material to factories and to carry finished goods to the market. Cost of transportation plays a vital role in location of the industrial unit. In Western Europe and Eastern parts of North America heavy concentration of industries is due to developed network of transportation system. In many countries of Asia, Africa and South America industrial development is less because of under developed transportation system.

Like means of transportation, means of communication such as post, telegram, telephone, e-mail and internet are also helpful in industrial development. These easily reciprocate information regarding industry.

(4) Market : The most important factor in establishment of industry is the availability of market for the goods produced. Market refers to the demand of finished goods in that region and purchasing power of the residents there. There is a large global market in developed countries because of high purchasing power of residents and dense settlements. Densely inhabited regions of South and South-East Asia also provide large markets.

(5) Skilled Labour : Although automation and mechanization has grown rapidly in manufacturing

industries, still the industries need more skilled workers. Self- propelled factories which are controlled by computerized system with thinking capability are appearing across the world.

(6) Capital : It is imperative to have enough capital for the establishment and operation of any industry. Capital is required for establishing factories, purchasing machines and raw material and paying wages to the workers. In developing countries industrial development is not as expected due to lack of capital.

(7) Water supply : Water supply also affects the location of any manufacturing industry. Iron-steel industry, Textile industry, Chemical industry, Paper industry, Leather industry, Atomic power station etc. are few such industries which cannot develop without water. Therefore, these industries are established near sources of perennial water supply.

(8) Climate : Suitable and healthy climate increases the work efficiency of workers. Humid climate is required for Cotton textile industry. Cinema industry requires cloudless sky and sunlight all year round. Cinema industry has flourished rapidly in Mumbai and California due to suitable climate.

(9) Advanced technology : Controlling the quality of manufacturing, disposing of waste and checking pollution is possible by advanced technology only. Nowadays, it is essential to pay attention to aspects of environmental conservation with the establishment of industries. It is possible by advanced technical knowledge and tips only.

(10) Government policies : Policies of a country's government also affect the development of industries. If a government of any country is nationalizing industries there , then foreign companies won't be able to establish their industry. On the contrary, if tax exemption or any other facilities are given then the possibility of development of industries increase.

(11) Other factors : Cheap land, Political stability, Banking and Insurance etc. are other important factors.

Classification of industries is displayed in Chart 9.2

Classification of Manufacturing Industries

The manufacturing industries are classified on the basis of their size, raw material , products and ownership.

(1) Industries based on Size : Size of any industry depends upon the invested capital, number of workers employed and quantity of production. Industries can be divided into three categories depending on their size :-

(a) Cottage Industry

(b) Small scale industry

(c) Large scale industry

(a) Cottage Industry : This is the smallest unit of manufacturing. The craftsman use local raw material in it. Articles of daily use are produced in houses with the assistance of family members by using meager capital, skill and ordinary tools. After personal consumption the remaining goods are sold in the local market.

Fig. 9.1 : Cottage industry material in North Eastern India

There are some articles manufactured in cottage industries which are capable of competing with articles produced by modern technology.

Articles of daily use like edibles, cloth,

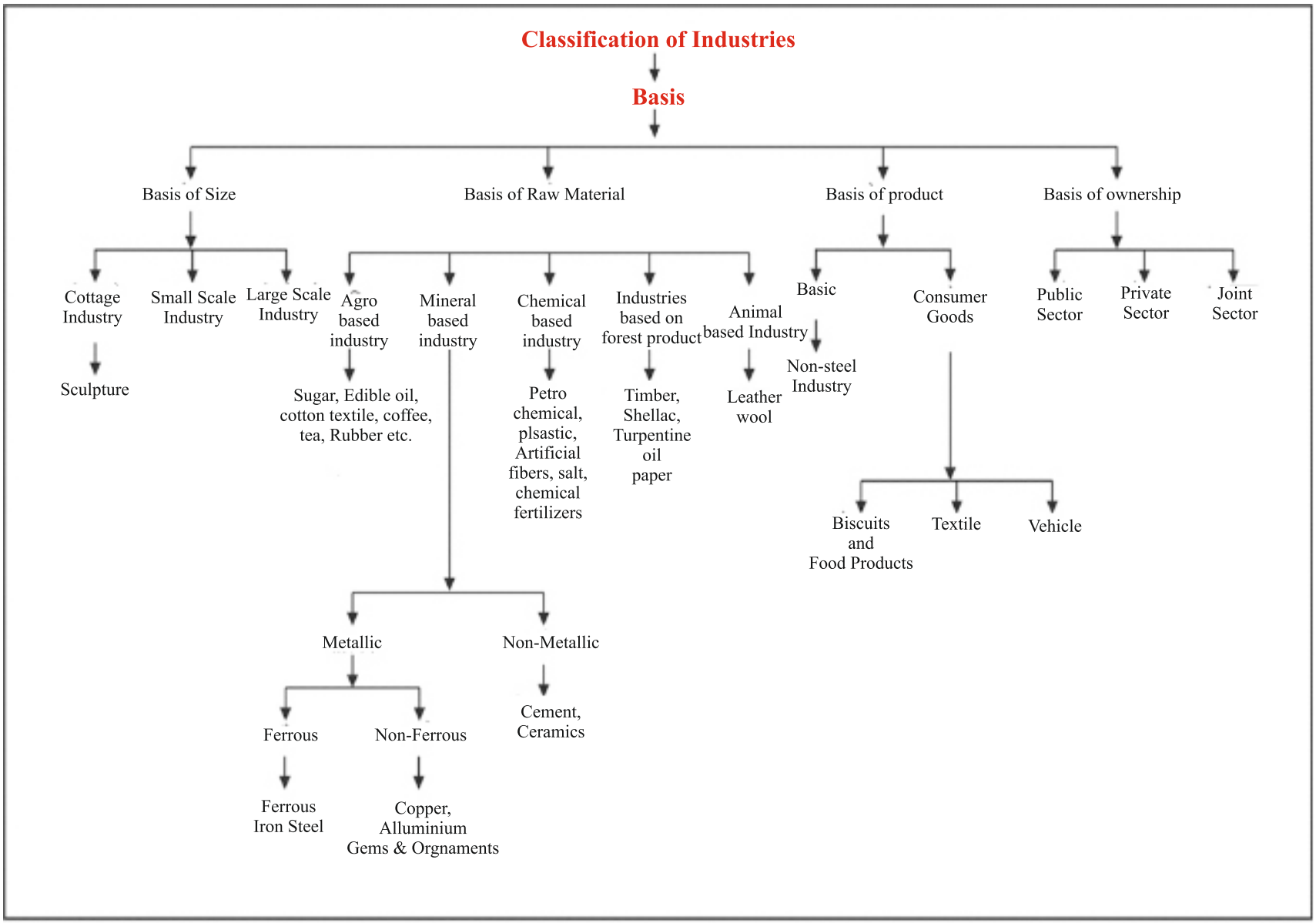

Chart 9.2 : Classification of Industries

furniture, utensils, tools, shoes, earthenware, jewellery, paper, leaf plate etc. are made in this industry. Indian villages were self-dependent due to development of the cottage industries. Blacksmith, Goldsmith, Potter, Barber, Cobbler, Carpenter etc. fulfilled the local needs in the villages.

(b) Small Scale Industry : These are also known as small scale industries. These utilize local raw materials. Semi-skilled labour and power driven machines are used in it. These industries provide employment on a large scale to densely populated population in developing countries.

Fig. 9.2: Pottery in Rajasthan (A Small Scale Industry)

Hence, increases the purchasing power of the local people. The major difference between small scale industry and cottage industry is that machines and energy is used in small scale industry and salaried workers are deployed , whereas it is not so in the cottage industries. Textile, Paper goods, Toys, earthenware, Furniture, Dairy products, Edible oil mills, metal utensils, leather articles etc. are examples of small scale industries.

(c) Large scale industry : Large scale industries require different kind of raw materials, means of energy, large market, skilled labour, Advanced technology and huge capital. These industries originated after the industrial revolution. Special attention is given to the quality of the product in these industries. Specialization in production is an important feature of large scale industry. Finished goods are exported. Initially the large scale industries were established in Great

Fig. 9.3 : Cement Production (A Large Scale Industry)

Britain, Western Europe , Russia, Japan etc. but these have expanded in all parts of the world. Cement, Cotton textiles, Petro-chemicals, Iron-steel etc. are examples of such industry.

(2) Industries based on Raw Material : Industries based on raw materials can be divided into five categories

(a) Agro-based industries : The finished product after various processes from agricultural produce is sent to rural and urban markets for sale. Some examples of this are Textiles (cotton,silk,jute), Beverages (tea,coffee,coco), Food processing, Vegetable ghee, Rubber etc. Food processing includes preparing packaged foodstuff etc. Edible products are preserved by drying them or by keeping them in oil or vinegar.

(b) Mineral based industries : Minerals are used as raw materials in these industries. Some industries use metallic minerals with ferrous content. Iron-steel industry, Machine and tools industry, Rail engines industry, Agricultural implements industry are main examples. Some industries use non-ferrous metallic minerals like Alluminium or Copper industry. Non-metallic minerals like Granite, Marble, Sandstone etc. are used as raw materials in Cement and Building-Road construction.

(c) Chemical based industries : Chemical minerals found naturally are used in this type of industry. Mineral oil is used in Petro-chemical industry. Chemical fertilizer , Paint, Varnish, Plastic,

Medicines are main examples of Petro-chemical industry. Natural minerals are also used in Salt, Sulphur and Potash industries. Chemical products are also used in Agriculture, Metallic textiles, Leather, Paper, Glass, Ceramics, Soap, Food processing etc. Synthetic fibres and Plastic making are other examples of Chemical industry.

(d) Industries based on forest produce : These industries use products obtained from forests. Paper and pulp industry, Furniture industry and match making industry, shellac are it's examples. Wood for paper industry, bamboo and grass, timber for furniture industry and shellac for sealing wax industry is procured from forests.

(e) Animal based industries : Main raw material obtained from animals is leather and wool. Leather for leather industry and wool for woolen textile industry is acquired from animals only.

(3) Industries based on Ownership : Industries can be divided in three categories on the basis of ownership

(a) Public Sector industries : These industries are owned by government. Many industries are under public sector in India. In communist countries most of the industries are owned by the government. In a mixed economy both private and public industries are found.

(b) Private Sector industries : The ownership of these industries lie with private investors. In the countries of capitalist economy most of the industries are in the private sector.

(c) Joint Sector industries : Industries of this type are jointly operated by any joint company or by joint efforts of any private or public sector enterprise.

World's major Manufacturing Industries

Today there are hundreds of industries in the world, of which we will study two major industries Iron-steel industry and Textile industry.

(A) Iron-steel Industry

Importance Iron-steel industry is the foundation stone of modern industrial age. It is itself a heavy industry and provides raw material to many other industries. It is henceforth also known as a Basic industry. We can't even imagine industrial development without this industry, therefore, it is also termed as a Pivot industry.

Fig. 9.4 : Iron Steel Industry in China

Fig. 9.5 : Iron Steel Industry in Russia

Three methods are prevalent in modern iron-steel manufacturing

(i) Bessemer method

(ii) The free furnace method and

(iii) The electric furnace method

To make iron-steel, iron-ore is melted with coke and limestone in furnaces. Melted iron when cools down outside is known as Cast iron. Manganese is added to this cast iron to form Steel.

Traditionally the heavy iron-steel industries

were located near sources of raw material where iron-ore, coal, manganese and limestone could be readily available so that transportation cost may be minimized. Some such industries were also established near sea ports so that raw material could be easily transported. Now a days, iron-steel industries are established near market also by using scrap as raw material.

Table 9.1 Iron-steel production in Leading countries of the World (2013)

S.No.	Country	Production (in million tones)
1	China	822.70
2	Japan	110.60
3	United States of America	88.17
4	India	86.50
5	South Korea	71.50
6	Russia	71.50
7	Germany	42.90
8	Turkey	34.00
9	Brazil	33.90
10	Ukraine	27.20
11	Italy	23.70
12	Mexico	19.00
13	France	16.10
14	Canada	12.70
15	United Kingdom	12.10
16	Poland	8.60
17	Austria	7.90
18	Belgium	7.30
	World	**1665**

Distribution of Iron-Steel Industry in the World

Iron-steel industry is widely distributed. It is centralized in developed countries of North America, Europe and Asia. China, USA, Japan, Russia and Germany are major producing countries of the world. Besides these South Korea, Ukraine, Brazil, Italy and India also produce Iron-steel. Map 9.1 shows major Iron-steel centres of the world.

China

China is the largest steel producing country of the world. China has enough raw material for this industry. Major iron-steel producing areas of China are as follows

- **Manchuria region :** It's the largest region of China. Here Anshan and Fushun are main centres.
- **North China region :** Many steel centres are developed near Shansi and Shensi coal regions.Centers are Paotow, Beijing, Tientsin.
- **Yangtese Valley region :** This region has the facility of raw material and water transport. Main centres of this region are Burhan, Shanghai, Hankou, Chungking.
- **Other centres :** Canton, Kunming, Chungching, Tsingtao.

Japan

Japan is the second largest steel producing country of the world. Inspite of unavailability of raw material, with the strength of excellent technology, means of transportation, adequate capital and government policies it has become a major steel producing country. Main areas are as follows

- **Nagasaki-Yawata region :** It is Japan's largest iron-steel producing area. It is situated in North Kyushu islands. Main centres are Yawata, Nagasaki, Kokura, Moji, Shimonoski.
- **Kobe-Osaka region :** It is situated in southern parts of Honshu island. Main centres are Kobe, Osaka, Hirohito, Sakai.
- **Tokyo-Yokohoma region :** It is situated in north-eastern parts of Honshu island. Tokyo,

Map 9.1 : Major Iron Steel Producing Areas of the World

Yokohoma, Kawasaki are main centres of this region.

- **Muroran region :** This region is situated in southern parts of Hokkaido island. Main centres are Muroran, Vanissie, Ishikari.

United States of America

It has been world's largest producer and consumer of iron-steel for many decades due to its resources. Here raw material has played an important role in localization of iron-steel industry. Major iron-steel regions are given below-

- **Pittsburgh Youngstown region :** This region is situated in Ohio river valley in North Applachian area. Main centres are Pittsburgh, Youngstown, Braddock, Georgetown, Hempstead.
- **Chicago- Gary region :** This region is situated in the south of Lake Michigan. Main centres are Chicago, Gary, Milwaukee.
- **Erie Lake region :** This region extends to the coast and adjoining areas of Erie Lake. Main centres are Detroit, Buffalo, Erie, Cleveland, Toledo etc.
- **Mid Atlantic region :** This region expands in Massachusetts and Maryland states. Main centres are Sparrows point, Allentown, Steelton etc.
- **Alabama region :** It is spread over Alabama and Tennessee states. Main centres are Alabama, Birmingham etc.
- **Western region :** Most of the factories of this region are small and scattered. Main centres are Los Angeles, Pueblo, San Francisco.

Russia

Russia is the fourth largest iron-steel producing country of the world. Major regions of iron-steel industry are given below-

- **Ural region :** It is the oldest and leading iron-

steel producing region . Main centres are Magnitogorsk, Nizhny Tagil.

- **Kuznetsk region :** This region is situated in Western Siberia. Main centres are Kuznetsk, Nova Kuznetsk.
- **Intermediate region :** This region is situated in adjoining areas of Moscow. Main centres are Tula, Lipetsk, Moscow, Leningrad, Gorki.

Other countries

Duisburg, Dortmund, Dusseldorf and Aachen in Germany, Krivoy rog and Donetsk in Ukraine, Jamshedpur, Durgapur, Rourkela, Bhilai, Bokaro, Salem, Vishakhapattnam and Bhadrawati in India are major iron-steel centres. Major iron-steel centres of Britain are Cardiff, Talbot, Heart fool, Sheffield, Glasgow, Falkirk, Lancashire.

Apart from these Canada, Brazil, Australia, South Africa, Algeria, Morocco, Zimbabwe etc. are other iron-steel producing countries.

(B) Textile Industry

The main requirement after food for man is clothing. This is one of the oldest industry of man. Although it started as a cottage and small scale industry but presently it has become a highly developed industry in major industrial countries of the world. Modern textile manufacturing originated in Britain during Industrial Revolution. This industry spread from Britain to other countries of the world. The following industries are included in the

Textile industry :-

(a) Cotton textile industry

(b) Woolen textile industry

(c) Silk textile industry

(d) Jute textile industry

(a) Cotton textile industry : The cotton textile industry is the most important industry in the textile industries.

Table 9.2 Annual production of cotton yarn in the World 2013 (in %age)

S.No.	Country	% age of World
1	China	26.4
2	India	21.0
3	United States of America	14.7
4	Pakistan	10.7
5	Indonesia	7.0
6	Brazil	3.8
7	Turkey	3.7
8	South Korea	2.2
9	Italy	2.0
10	Egypt	1.5
11	Japan	1.5
12	Portugal	1.0
13	Greece	1.0
14	France	1.0
15	Uzbekistan	1.0
16	Germany	0.8
17	Syria	0.7
18	Bangladesh	0.5
19	Turkmenistan	0.4
20	Poland	0.4
	WORLD	100.0

Cotton as raw material, Coal and Hydro-electricity for power, Cheap and Skilled labour in abundance, Humid climate with sea breeze, large quantity of pure water, extensive market and government encouragement are the requirements for establishment of a cotton textile industry.

Although cotton yarn and cotton textiles are manufactured in all tropical and sub-tropical countries. China, India, Russia, USA, Japan etc. are the major cotton textile producing countries of world.

Fig. 9.6 : Production of Cotton Yarn in India

Fig. 9.7 : Cotton Textile Industry in China

China holds first position in cotton textile production. Shanghai, Canton, Tsingtao, Tientsin, Shantung and Darin are the main cotton textile centres. India holds the second position after China in cotton textile production. Main centres in India are Mumbai, Ahmedabad, Sholapur, Nasik, Surat, Baroda, Nagpur, Indore, Warangal, Gwalior, Kolkata, Delhi, Kanpur, Bhilwara, Beawar, Pali, Coimbatore, Madurai, Salem, Bangluru etc. In the United States of America cotton textiles is produced in New England, Central Atlantic States and in the South Appalachian states. At present, this industry has to compete with artificial fibres. Due to this negative trend is seen in this industry in many countries. This industry is shifting towards less developed countries instead of developed countries due to low labour cost.

(b) Woolen textile industry : Woolen textile industry is the second largest industry in the world after Cotton textile industry. Woolen textile industry has developed rapidly during seventeenth century in England. After the second world war , the invention of modern machines in Japan has accelerated the development of this industry. Woolen textile industry is an important industry in terms of value, although this industry is is only 10 to 15 percent of cotton textile industry. Market and easy approach to raw material are the most important factors for location of woolen textile industry. Skilled labour, fresh water supply, availability of power resources, access to capital and transportation are other important factors.

About two thirds of woolen textile industry is concentrated in Europe. At present, this industry has developed in more than 40 countries. Russia, China, Japan, Germany, India, United States of America , Romania, Poland, Great Britain etc are major woolen textile producing countries. Only five percent of woollen textile is produced in countries of the southern hemisphere such as Australia, New Zealand, South Africa, Argentina and Uruguay as these are countries of tropical climate and sparse population.

Table 9.3 : Annual production of woolen textile in the World 2013 (in %age)

S.No.	Country	% age of World
1	China	28.8
2	Italy	24.9
3	Japan	6.2
4	Turkey	5.7
5	Germany	5.0
6	Russia	4.2
7	United States of America	3.6
8	United Kingdom	2.4
9	France	2.3
10	Poland	2.2
11	Mexico	1.1
12	Lithuania	0.9
13	Austria	0.9
14	Spain	0.9
15	Czech Republic	0.9
16	Romania	0.8
17	Portugal	0.7
18	Belarus	0.6
19	Slovak Republic	0.6
20	Bulgaria	0.5
21	South Africa	0.4
22	South Korea	0.4
23	Egypt	0.4
	WORLD	100.0

(c) Silk textile industry : Silk textile industry initially developed as a cottage industry in China. From here, this industry developed in other countries of the world. It took the form of factory industry with the invention of automated looms. Since the beginning silk clothes have been a luxury article of wealthy people. Hence, this industry is a limited and concentrated industry as compared to cotton textiles and woolen textiles industry.

Natural silk is obtained from the substance derived from the saliva of an insect called bioximu. This insect which survives on leaves of mulberry wraps the sticky substance secreted from it's mouth over it's body. At this stage it is known as a cocoon. The matured cocoon is boiled in water to segregate the wrapped silk from the insect and then it is wrapped to form the thread separately. After this silk clothes are made. There are three phases of the silk textile industry : 1. Production of cocoons 2. Wrapping of silk thread from the cocoons 3. Weaving of silk textile

Amongst the raw silk producing countries in the world, Japan produces around 50 percent, China 28 percent , Russia 6 percent and India 6 percent silk. Silk textile industry is mainly influenced by demand and market. Silk textiles are quite expensive and this industry has flourished in the countries with sufficient child labour.

Major silk textile producing countries are Japan, United States of America, France, China, Taiwan, Germany, England and India. Eastern Asian countries produce about 85 percent of world's raw silk whereas these countries produce only 35 percent of silk textile. Japan's Yamagata, Fukushima, Nigita, Kinki and Kyoto are the major centres of weaving silk textile. Silk industry has been developed in China since ancient period. During ancient period China's silk reached Europe through land route. This route is termed as Silk route by historians. Shanghai, Kwangwai etc are major silk textile centres.

In the United States of America, Pennsylvania

is the leading state in silk textiles. Patterson City is the largest Silk garment manufacturer and is also known as 'Silk City'. The city of Lyons located in the Rhone valley is the largest silk textile manufacturer of France. In India, Kolkata, Mysore, Bangalore, Chennai are major centres.

(d) Jute textile industry : Jute industry is associated to production of sack, jute cloth, thick durries etc. Jute industry produces cheap, strong and durable material for packaging industry. At present, garments and other products are made by blending high quality jute with cotton or wool. India and Bangladesh are pioneers in jute cultivation. It is cultivated in Brahmaputra valley and delta region of the Ganges.

Fig. 9.8 : Jute crop in West Bengal

This industry is developed in countries like India, Bangladesh, Germany, Great Britain, France, Italy, Belgium, Sweden, Japan, Canada, United States of America, China, Thailand etc. India and Bangladesh are the major jute products exporters.

IMPORTANT POINTS

1. All those activities are termed as Secondary occupations which refine natural resources, change their appearance and which make them more useful for living.
2. Secondary occupations include industries of engineering, construction, electronics, chemicals, textiles, food and beverages, metallurgy and plastic.
3. The important factors affecting industries are raw material, sources of power, means of transport and communication, market, capital, water supply, climate, technology and government policies etc.
4. Industries may be divided in three categories on the basis of size : cottage, small scale and large scale industries.
5. Iron- steel industry is the world's major and basic manufacturing industry.
6. China, Japan, United States of America, Russia, Germany, Ukraine, India etc. are the major iron-steel producing countries of the world.
7. Textile industry includes cotton, wool, silk, jute and synthetic textile industries.
8. Cotton textile industry is being transferred to developing countries from the developed countries due to rise in the labour cost.
9. Woolen textile industry in terms of value is only 10 to 15 percent of cotton textile industry.
10. India and Bangladesh are the major jute products exporters.

EXERCISE

Multiple Choice Type Questions

1. Which of the following is not a power resource ?

   (a) Coal (b) Petroleum

   (c) Hydro electricity (d) Copper

2. The country in which industries have developed inspite of scarce raw material, is-

   (a) Japan (b) India

   (c) China (d) Russia

3. Which of the following sources of power is not helpful in the decentralization of industries ?

   (a) Hydro electricity (b) Coal

(c) Petroleum (d) Natural gas

4. Which of the statement is not related to cottage industries ?

   (a) Local raw material

   (b) Labour by family members

   (c) Less quantity of product

   (d) More capital

5. Which of the following is not an agriculture based industry ?

   (a) Cotton textile industry

   (b) Rubber industry

   (c) Cement industry

   (d) Vegetable oil industry

6. Forest produce based industry is

   (a) Leather industry

   (b) Sugar industry

   (c) Paper industry

   (d) Aluminium industry

7. Which of the following is China's leading iron-steel manufacturing region ?

   (a) Manchuria

   (b) Nagasaki- Yawata

   (c) Pittsburgh Youngstown

   (d) Ural region

8. Is not an iron-steel centre of India

   (a) Jamshedpur

   (b) Durgapur

   (c) Rourkela

   (d) Pittsburgh

Very Short Answer Type Questions

9. Major iron-steel centres of India are located near which coal region ?

10. Name the methods of iron-steel manufacturing.

Short Answer Type Questions

11. Name the iron-steel manufacturing countries of the world.

12. Give a brief description of the textile manufacturing industry.

13. What are large scale industries ?

14. Describe the iron-steel industry of Japan.

15. Describe the woolen textile industry.

Essay Type Questions

16. Describe the factors affecting the location of industries.

17. Write a classification of industries.

18. Write an essay on iron-steel or cotton textile industry.

Map / Skill Based Questions

19. Show the major iron-steel producing centres of world on a map of world.

20. Show the major cotton textile producing countries of world on a map of world.