

CHAPTER 15 WORLD MANUFACTURING INDUSTRIES

Objectives

After studying this chapter, students should be able to:

- (i) define manufacturing industries and enumerate their types.
- (ii) outline the characteristics of manufacturing industries.
- (iii) describe the role of industrialization in Tropical Africa.
- (iv) outline the factors of industrial location.
- (v) enumerate problems affecting manufacturing industries.

15.1 Definition and Classification

Manufacturing industries are industries which process raw materials into finished goods such as sugar cane into sugar, rubber into tyres *etc.*

Manufacturing can be defined as the transformation of substances into new products with the work being performed by power-driven machinery or by hand either in a factory or in a worker's home. Manufacturing industries can be classified into four groups namely: primary, secondary, tertiary and quaternary industry.

- (a) **Primary Industry:** It involves the extraction of raw materials provided by nature *e.g.* mining, lumbering, farming, fishing and fruit gathering.
- (b) **Secondary Industry:** It refers to the industries that utilize machines, factory and human labour to convert raw materials into a processed final product.
- (c) **Tertiary Industries:** These are service based industries and include:
 - (i) Direct services such as trading, banking, teaching, medical and transportation services; and
 - (ii) Indirect services such as police services, custom, army and naval services.
- (d) **Quaternary Industries:** These are industries that deal with information and communication services.

Manufacturing industries can also be classified into:

- (a) **Light industries:** These are industries that produce relatively light weight goods such as clothes, furniture, books, household utensils *etc.*

Characteristics

1. They are found mainly in Tropical African countries such as Nigeria, Ghana, Benin *etc.*
 2. They make use of semi-processed goods.
 3. They produce light weight goods.
 4. They employ mostly the service of women.
 5. Such industries include leather industry, food processing industry, textile industry, printing and publishing industries
- (c) **Heavy Industries:** These are industries that produce heavy goods such as aeroplane, ship, motor vehicles, iron rod *etc.* They are secondary industries and most of their goods are capital goods.

Characteristics

1. They are producers of heavy or bulky goods.
2. They are capital intensive.
3. They required large expanse of land.
4. They are usually large-scale industries.
5. They are mostly found in developed countries of the world.

15.2 World Industrial Zones/Belts

Industrial zones of the world include:

- (a) The Ruhr region – Westphalia industrial district of West Germany (Europe)
- (b) The Pittsburgh industrial region of Eastern U.S.A.
- (c) Industrial Region of Southern Japan
- (d) The Damodar valley of India

(a) The Ruhr– Westphalia Industrial Region of Germany

This is a great industrial region of Germany. The region is bounded by the River Lippe in the north and the River Wupper in the south. The two rivers are tributaries of the river Rhine. Specialized products from this region include steel, cutlery, textiles and chemical products. Factors that have contributed to the rapid growth of this region include:

1. Availability of power due to the presence of Ruhr coal field.
2. Availability of water which is supplied by river Rhine
3. Efficient transport system provided by river Rhine for transportation of raw materials and finished goods. Also presence of road and railways make supply of raw materials possible.
4. Ruhr valley and a nearby Siegerland are sources of iron-ore which is a key factor in the development of iron and steel industry.

(b) The Pittsburgh Industrial Region of Eastern USA

This is one of the world regions that contains greatest concentration of industrial cities. Several industries including light and heavy industries are located in this region. Important products from this region include: steel, chemicals, refrigerators, computers, toys, textiles, automobiles, etc. factors that influence the rapid growth of this industrial region include:

1. Availability of raw materials such as coal, iron ore, limestone, petroleum, natural gas, chemicals etc.
2. Availability of power supply.
3. Efficient transportation network.
4. Availability of skilled labour.
5. Large market in terms of large population. More than half of all the major cities in the US are found in this region.
6. Location of the region which enables it to be accessible from different parts of the world.
7. A stable political system.
8. High technological level.

(c) Industrial Region of Southern Japan

The industrial belt of Japan is mainly found in the southern Japan, running from Yokohama to Nagasaki. Unlike the industrial development in the USA and Europe, Japan's industrialization is relatively new, it

started almost 200 years after that of western countries. Today, Japan is one of the leading industrial countries of the world with rapid development in the automobile industry, ship building, iron and steel, chemical industry, electronics, textile and paper making. Factors that account for the rapid development of industries in Japan include:

1. Efficient hydro-electricity for power supply.
2. Availability of raw materials such as copper, manganese, iron ore, limestone etc.
3. Large market, particularly the proximity of Japan to mainland Asia that serve as market place for its finished goods.
4. Government policy that favours industrialization.
5. Research and innovation: The city of Tsukuba is a famous research city in Japan devoted to research and development.
6. Technological advancement such as robotic engineering, computer engineering etc.

15.3 Factors of Industrial Location

Since industries are not found virtually everywhere, there are definite locations where they are found. Certain factors are responsible for the location of industries and they include:

- 1. Availability of labour:** This is very essential in that labour is needed to supervise and operate the entire production activities of an industry. Since labour is mobile, they constitute an important factor that is considered as they fasten production and enhance the distribution of such goods after production.
- 2. Market:** This is the population that consumes the products of industries. Since the market is a motivating factor behind production, most industries settle in places where there is ample demand and patronage for their products. On an international level, a country where income levels are high is more likely to attract industries since the demand for industrial products is usually high.
- 3. Capital:** The availability of capital influences where industries are located especially where industries require much of it to operate effectively. The presence of financial houses such as banks where funds can be easily sourced is considered when establishing industries as there is ready supply of liquid capital in terms of funds.
- 4. Transportation:** This is important as goods and products have to be moved to the source of consumption. The presence of an efficient transport network will readily attract industries as there will be easy distribution of goods to meet peoples consumption and demand.
- 5. Political Considerations:** Government policies and considerations often decide where to locate industries since industries are regarded as opportunities that must be shared for people's benefit. Often times, industries may be established in a particular location not on the basis of economic consideration but the need to spread development over a given geographical area. A ready example is the location of a petroleum refinery in Kaduna, Nigeria which is far from the point of extraction. In most cases such locations may not be the best and may not even be economically justifiable but is taken mere to satisfy certain vested interests.
- 6. Source of power supply:** Industries locate in places where there is ready source of power supply especially for those industries that are into manufacturing which require constant power supply. Hence, places with regular power supply are often homes to large manufacturing industries.

15.4 Problems Affecting Manufacturing Industries

The following problems affect the operations of manufacturing namely:

1. Inadequate capital in the form of absence of credit facilities or fund to finance the operations of the industries.

2. Low purchasing power due to low demand for industrial products and increasing levels of unemployment.
3. Stiff competition from producers of foreign goods who are more technically efficient and advantaged than the local ones. This results in low demand for local products.
4. Inadequate supply of power which is caused by poor maintenance of power stations and this lowers the ability of manufacturing industries to produce at optimal level. Where power is available it is highly unreliable as power failure is a regular occurrence in most developing countries.
5. Shortage of raw materials due to limited local sources from where raw materials can be obtained which has made most industries to import them from abroad in addition to the low level of technology that would have assisted in the search for alternative sources.
6. Administrative and political problems: The imposition of certain administrative conditions which manufacturing industries have to fulfill in their daily operations often constitute a fundamental problem coupled with the delay in the processing of necessary applications by the manufacturing industries which does not take time in developed countries. Also, indeed here is the frequent change in industrial policies which makes foreign investors to shy away from investing in developing countries.

15.5 Why Light Industries Predominate in Africa

Light industries are the commonest in Tropical Africa. The reasons for this include:

1. Low population per capital income which result in low demand for goods and services.
2. Inadequate capital.
3. Low level of technological development.
4. Inadequate transportation.
5. Irregular power supply
6. Political instability
7. Poor industrial policy.
8. Over dependence on foreign expatriate which increase overhead cost.
9. Corruption and poor governance.

The key to rapid development of tropical Africa is industrialization. Industrialization will create jobs for the teeming youth population, increase local and foreign earning of countries, enable diversified economy and raise the standard of living of people. It is therefore imperative for government of tropical African countries to pursue program of rapid industrial development for their countries.

Summary

- Manufacturing industry refers to industry that processes raw materials into finished and semi-finished goods.
- Industries are classified into primary, secondary, tertiary and quaternary industries. It can also be grouped into light and heavy industries.
- The features of manufacturing industries in Tropical African includes local sources of materials, small market, dependence on imported raw materials, labour intensive, production of inferior goods, low production, localization of industries, emphasis on production of consumer goods and absence of heavy industries.
- Industrialization is the key to economic development in the following ways – creation of employment opportunity, local and foreign earnings, diversification of economy, favourable balance of trade, encouragement of transfer of technology, large scale production and low cost of goods.

- The world major industrial zones are Ruhr or Germany in Europe, industrial region of Eastern U.S.A and industrial region of Southern Japan.
- Factors responsible for industrial location include raw materials, government policy, capital, political stability, transport, labour supply, energy supply, market and cost of land.,
- Most of the industries are faced with the problem of erratic power supply, political instability, shortage of raw materials, inadequate skilled labour, poor management, poor transportation network, foreign goods

Revision Questions

Objective Questions

1. Industries that are concerned with the extraction of raw materials from Nature are called
 - A. Secondary industries
 - B. Craft industries
 - C. Primary Industries
 - D. Tertiary industries
2. All the following except one encourages industrial growth in tropical Africa
 - A. Availability of capital
 - B. Availability of labour
 - C. Political stability
 - D. Availability of water
3. The followings factors are responsible for the low level of Industrial Development in Tropical Africa except
 - A. insufficient capital
 - B. International image
 - C. poor management
 - D. Inadequate power supply
4. The location of iron and steel industry at Abeokuta in Nigeria is best explained by the presence of
 - A. Tin at Jos
 - B. Limestone at Ewekoro
 - C. River port at Lokoja
 - D. Coal at Enugu
5. All the following are examples of heavy industry except
 - A. furniture making
 - B. ship building
 - C. refining of petroleum
 - D. iron and steel
 - E. Aluminium smelting (WASSCE 1995)
6. Which of the following is true of manufacturing industries in Nigeria?
 - A. Most of them produce consumer goods
 - B. Large quantities of their products are exported
 - C. They depend totally on local raw materials
 - D. They were established in pre-colonial times
 - E. They are evenly distributed throughout the country(WASSCE 1995)
7. A continuous urban or industrial stretch resulting from the merging of cities is called
 - A. A satellite town

- B. A squatter settlement
- C. A conurbation
- D. A holiday resort
- E. An urban centre

8. Which of the following is true of manufacturing industries in Nigeria?

- A. Most of them produce consumer goods
- B. Large quantities of their products are exported
- C. They depend entirely on local raw materials
- D. They were established in pre-colonial times
- E. They are evenly distributed throughout the country (WASSCE 1998)

9. Most of the industries located in rural areas are

- A. market-oriented
- B. high energy-oriented
- C. raw materials – oriented
- D. transport oriented (WASSCE 2002)

10. Which of the following is a service industry?

- A. Leather processing
- B. farming
- C. Petroleum refining
- D. Banking

Answers

1. C 2. D 3. B 4. B 5. A 6. A 7. C 8. A 9. C 10. D

Essay Questions

- 1a. Name three broad classes into which manufacturing industries can be grouped and one important area in the world where an example of each is located.
- b. Describe three main characteristics of each class of industry named in (a) above. (WASSCE 1988)
2. With the aid of specific examples, discuss the factors that limit industrial development in Tropical Africa. (Nov 1989)
3. Describe three ways in which light industries differ from heavy industries.
- b. Give four reasons why light industries are more prevalent than heavy industries in tropical Africa. (June 2003)
4. Give an example of a (i) light industry (ii) Heavy industry
- b. Describe any three favourable factors for the location of anyone of the industries.
5. Name two examples of local craft and two of manufacturing industries in Tropical Africa.
 - b. Outline any five factors which affect the location of manufacturing industries in tropical Africa.
 - c. What three problems face manufacturing industry in the sub-region?