

# CHAPTER 13 RESOURCES IN NIGERIA

## Objectives

After studying this chapter, students should be able to:

- (i) define resources
- (ii) list and classify the resources in Nigeria
- (iii) describe the various resources in Nigeria
- (iv) enumerate and describe the importance of resources in Nigeria

### 13.1 Resources

Resources are material found within a given area Nigeria that are useful and accessible to man. Resources are features of nature used by man to satisfy his needs and enhance comfortable habitation within the environment. Resources exist within the physical environment can be utilized when man has direct access to them.

Nigeria is endowed with several resources such as minerals, forests, water bodies and human resources, some of which have been harnessed and exploited for her benefits.

### 13.2 Types of Resources in Nigeria

The resources in Nigeria can be classified into the following groups

- (i) Mineral resources
- (ii) Water resources
- (iii) Vegetal resources
- (iv) Atmospheric resources
- (v) Power resources

#### Mineral Resources

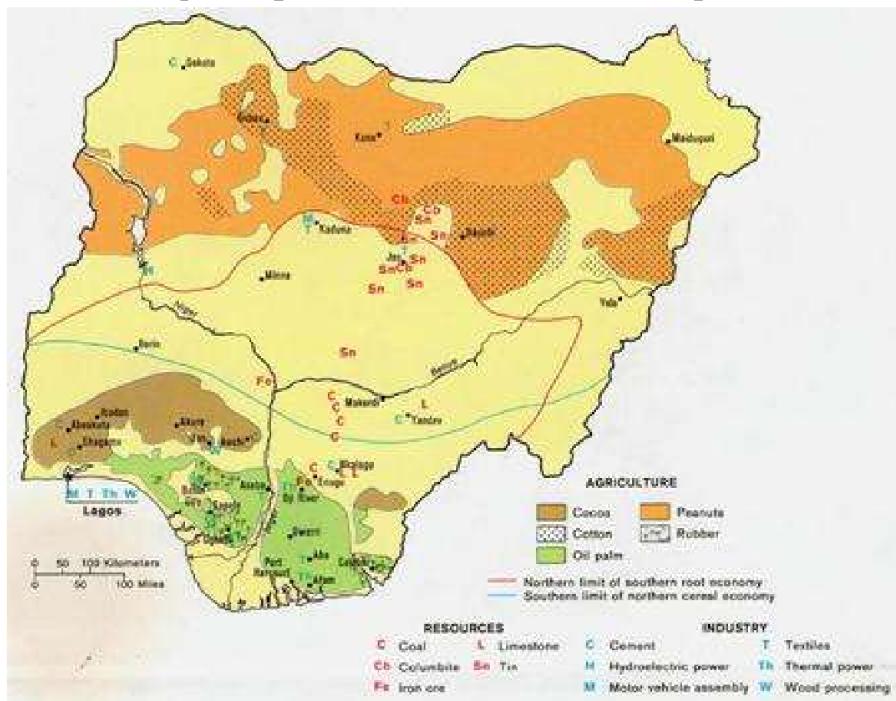
These are inorganic naturally occurring substances that have definite internal structures within the Earth crust with specific chemical properties. Mineral resources can be divided in two sub-groups; metallic and non-metallic or solid minerals. Metallic resources that are found in Nigeria include gold, tin, copper, silver, lead, zinc, iron, nickel, chromium and aluminium while solid or non-metallic resources include uranium, gravel, sand, gypsum, halite, emerald, sapphire and marble. Table 1 shows the various mineral resources in Nigeria and the places where they are found.

*Table 13.1: Minerals in Nigeria and Their Locations*

Petroleum/Crude oil	Port Harcourt, Warri, Afam, Ughelli, Egbema
Limestone	Nkalagu, Ewekoro, Ukpilla, Calabar, Sokoto
Tin and Columbite	Jos
Coal	Enugu, Okaba (Benue State)
Iron ore	Itakpe (Kogi State), Aladja near Warri
Lead and zinc	Enyigba (near Abakaliki, Ebonyi State)
Gold	Ilesa, Zamfara, Kano
Salt	Borno State, Katsina State
Kaolin	Ogun, Oyo, Sokoto, Kano, Jigawa

Uranium	Adama, Borno and Katsina States
Lignite	Abia, Akwa Ibom, Anambra and Edo States

In addition to the minerals mentioned above, other minerals found in Nigeria include granite, marble, gypsum, sandstone, pyrite, phosphate, feldspar, silica, bauxite, diorite, quartz, dolomite, mica etc. Fig. 13.1 shows the map of Nigeria with the locations of the important minerals.



*Fig. 13.1: Map of Nigeria show minerals and their locations*

## **Importance of Mineral Resources**

1. They serve as sources of income to the government in the form of foreign exchange and as internally generated revenue such as royalties, mining tax etc.
  2. It is a source of employment as the exploration and harnessing of minerals provide jobs for people such as skilled and unskilled manpower in the form of mining engineers, miners, drillers, mineral processors etc.
  3. They constitute important sources of fuel and power such as petroleum, natural gas which are used for domestic and industrial purposes, e.g. petrol which serve as fuel for motor vehicles, power generators and natural gas and kerosene that are used for cooking. All these products are available in the country.
  4. Some minerals such as iron ore, aluminium and zinc are used in the construction of buildings, houses, bridges, while zinc is used for making roofing sheets and lead is used for producing water and oil pipes, all of which are available in the country.
  5. There are some mineral resources that serve as raw materials for industries. Some of the minerals that are produced in Nigeria that falls under this category include iron ore which is used for producing steel and iron bars, lead and graphite used in the production of pencils etc.
  6. They serve as basic raw materials for some industries in the country e.g. petroleum for refinery industries, feldspar for ceramic tile factories and limestone for cement industries.
  7. The availability of mineral resources in Nigeria has opened up some mining areas for development through the provision of basic infrastructural facilities such as roads, water supply, electricity, hospitals etc.
  8. Several towns have emerged from the discovery of minerals e.g. Enugu (coal), Oloibiri (Petroleum), Jos (Tin), Ewekoro (Limestone) etc.

The effective utilization and harnessing of mineral resources in Nigeria is hampered by inadequate capital and funds to exploit the minerals, poor transportation network, inadequate skilled manpower needed to supervise mining operations, difficult physical terrain that impedes movement, conflicts with the local populace where the mines are located, fluctuation in world price of minerals, environmental pollution (e.g. oil spillage, collapse of mines etc.) and poor management.

## Water Resources

These are materials existing inside several water bodies that are of benefit to man, plants and animals. Water resources of Nigeria consist of surface water bodies such as rivers, streams, lakes, springs, reservoirs, etc and underground water from aquifers, wells and boreholes. They constitute the major source of freshwater in the country.

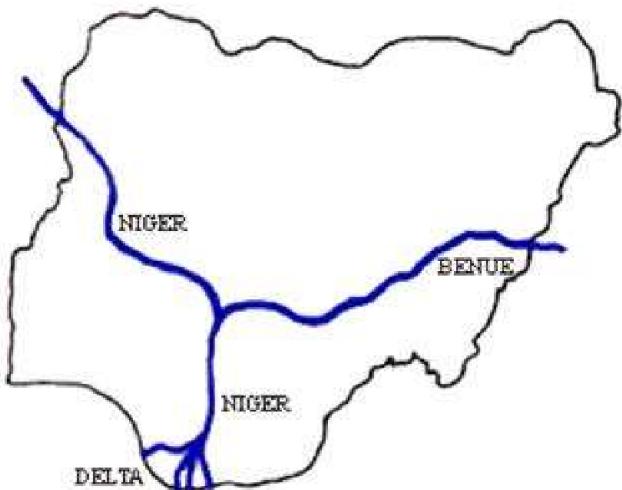
The following are major rivers and lakes of Nigeria

- (i) Rivers: The major ones are Niger, Benue, Gongola, Cross, Ogun, Osun, Sokoto, Kaduna etc.
- (ii) Lakes: Nike, Chad, Ado Awaye, Kainji, Shiroro

## Importance of Water Resources in Nigeria

1. They serve as the major sources of freshwater needed for domestic and industrial uses in the country.
2. They provide water needed for agricultural purposes such as crop cultivation, animal husbandry and irrigation for places that are deficient in water supply.
3. They serve as the basis for some sports, recreation and tourism, e.g. the Argungu Fish festival on the Sokoto River, Pattigi Boat Regatta on the River Niger and the Osun Osogbo Festival on River Osun.
4. They are sources of food supply in terms of aquatic animals such as fish, prawns, lobsters, crayfish, crab, etc.
5. Most surface water bodies in Nigeria especially the rivers serve as potentials for the production of hydro-electric power as they have waterfalls and cataracts along their courses.
6. They serve as medium for water transportation especially among the riverine communities.
7. They are sources of employment to some people such as fishermen, divers, tourist guides, canoe and ship builders etc.
8. They are sources of some minerals such as salt, potash, etc.
9. They are sources of raw materials used in making ornaments such as corals, beads etc.

In recent times, the use of water resources in Nigeria have been seriously affected by certain problems such as inadequate capital needed in developing hydro-electric power projects, fluctuation in the volume of river due to seasonal changes, the piling of silts and sediments thereby reducing the mouth of the rivers to accommodate navigation, the presence of rapids and waterfalls which reduces river navigation and the presence of weeds which choke rivers and thereby reduce effective water navigation.



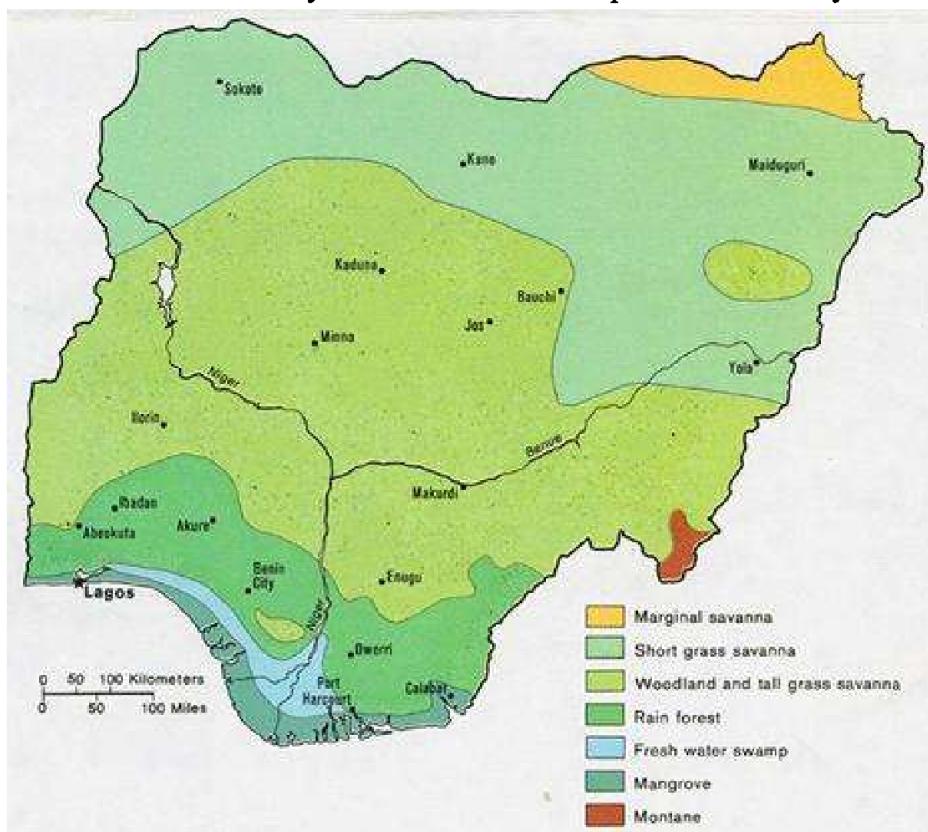
*Fig. 13.2: Map of Nigeria showing the major rivers*

### **Vegetal Resources**

These are resources that are found from the vegetation cover existing within the confines of Nigeria that are of immense benefits to the country. These resources include timber, roots, leaves, tree barks, latex, fruit, fibre, firewood and wildlife.

Vegetation resources of Nigeria can be classified into two namely:

- (i) **Forest Products:** These are resources that are contained in the various forests in Nigeria such as fresh water swamp forests, salt water swap forests, tropical rainforest, etc. which are found in the southern part of Nigeria.
- (ii) **Grassland Products:** These are resources that are contained in the various grasslands in Nigeria such as grasses, leaves, roots etc. The grasslands include Guinea savanna, Sudan savanna and Sahel savanna which are mostly found in the northern part of the country.



*Fig. 13.3: Map of Nigeria showing major vegetation*

### **Importance of Vegetation Resources**

Vegetation resources are important to Nigeria in the following ways:

1. They are the major source of food to Nigerians in the form food crops and animals such as rice, beans, grains (millet, sorghum, guinea corn etc.).
2. Important products such as planks, timber, wood can be gotten from trees contained in Nigeria's vegetation such as iroko, obeche, mahogany which are basic raw materials used for building and furniture.
3. It is a source of income to the government in the form of foreign exchange when the products are exported and revenue earned in the form of levies and charges imposed on lumbermen.
4. It is a source of energy e.g. the use of firewood for cooking and other domestic chores such as warming of houses, the roasting of fish and meat.
5. It is a ready source of employment as it provides jobs for people like lumbermen, forest guards, saw millers, hunters etc.
6. They serve as raw material needed in the production of furniture and other construction works.
7. They contain medicinal products that can be used in curing certain diseases and ailments. For example, quinine can be obtained from the Dongoyaro tree which can be used in curing malaria fever. Similarly, roots and tree barks are used in curing ailments such as stomach ache, dysentery and diarrhea.
8. The vegetation resources as an important component of an ecosystem has helped in regulating the various biogeochemical cycles (such as water, carbon and nitrogen) and by so doing make living comfortable in the country.
9. They assist in converting solar energy into biomass which forms the basis of food chain.
10. The vegetation especially forests serve as wind breakers which assist in the control of erosion in the country.
11. They help in conserving wildlife in the country and also boost tourism and recreation e.g. the Obudu Cattle Ranch in Cross River State.
12. They are sources of fibres for making clothes, ropes and twines, e.g. cotton that is extensively cultivated in Northern Nigeria.

Important as the vegetation resources are in Nigeria they are limited by factors such as indiscriminate bush clearing and burning, lumbering activities, promotion of environmental degradation through forest depletion, soil erosion, leaching, flooding and depletion of wildlife through poaching, illegal hunting etc.

### **Atmospheric Resources**

These are materials mostly gases that are found in the atmosphere that are beneficial to man such as wind, water vapour, sunlight and gases.

The atmospheric resources of Nigeria can be grouped into the following categories

- (i) Wind
- (ii) Atmospheric Gases
- (iii) Sunshine and Solar Energy
- (iv) Water vapour

**(i) Wind:** This is air in motion and it moves from areas of high pressure to areas of low pressure. Wind constitutes a valuable resource in Nigeria as there are several local winds that blow over the country

especially the North-East trade winds and the Southwest monsoon winds. These two winds take an active part in the formation of the wet and dry season in Nigeria.

- (ii) **Atmospheric Gases:** These gases are found in the atmosphere and are also found in abundance in Nigeria, examples include carbon dioxide, nitrogen and oxygen.
- (iii) **Sunshine and Solar Energy:** These are derived from the sun and they are abundant in Nigeria in view of her location which makes it possible for sunshine to be available all year round, since Nigeria is located close to the Equator.
- (iv) **Water Vapour:** These are condensed water droplets that are found in atmosphere that appear as clouds and are responsible for the formation of rain. Nigeria is blessed with abundance of water vapour particularly in the southern part.

### **Importance of Atmospheric Resources to Nigeria**

Atmospheric resources are very important because they are:

1. Useful in the construction of wind mills, and the pumping of water from wells and boreholes;
2. Provide solar energy used in drying clothes and semi-processed agricultural products such as cassava, tobacco, yams etc;
3. Useful in generating electricity through wind mills and solar energy;
4. Sources of income especially through tariffs charged on the supply of electricity through solar energy;
5. Aid the generation of weather forecast reports; and
6. Useful in purifying the atmosphere through the exchange of gases which aids comfortable living in the country.

Inspite of the above the exploitation and use of atmospheric resources in Nigeria is seriously limited by the expensive nature of acquiring the appropriate technology for using atmospheric resources *e.g.* construction of wind mills and solar panels, difficulty in storing atmospheric resources especially solar energy, fear of competition with established energy sources like thermal and hydro-electric energy, and the unreliability of certain periods during which atmospheric energy can be obtained.

### **Power Resources**

These are resources that are contained in the various sources of power such as thermal energy, geothermal energy *etc.* The resources are generally used in generating power which are further used in executing human activities. Power resources in Nigeria include hydro-electric power plants, thermal electric plants *etc.* Other major sources of power include coal, petroleum and natural gas. Coal, petroleum and natural gas are used to generate thermal power while water is used to generate hydro-electric power. The earliest hydro-electric power stations in Nigeria were built on the Jos Plateau at Kurra and Kwall Falls while the recent ones include those at Kainji, Shiroro and Jebba. Thermal stations that use natural gas are located in Egbin near Ikorodu in Lagos, Afam, Ughelli and Sapele in Delta State. The power station at Oji River near Enugu uses coal for generating power. In recent years, plans are under way to establish more power stations under the Nigerian Independent Power Project (NIPP) a joint venture between the Nigerian government and private investors.

### **Importance of Power Resources**

The various power resources in Nigeria are important in the following ways:

1. They provide energy for executing human activities such as domestic, industrial, agricultural and commercial activities.
2. They are a source of revenue to the government through the imposition of electricity tariffs and levies.
3. They provide employment to Nigerians as engineers, fault men, technicians and marketers etc.
4. They constitute a basis for the provision of infrastructural facilities to the places where power stations are found. For instance, Egbin and Ijora which are hitherto rural communities have witnessed the provision of infrastructures such as roads, schools, and hospitals due to the establishment of power stations there.
5. They encourage the establishment, growth and concentration of several industries through the supply of electricity to aid their operations.
6. They support the production of household goods which assist in improving the living standards of Nigerians.

The effective utilization of power resources in Nigeria has been seriously influenced by inadequate funding, low acquisition of modern technology, poor maintenance of existing power stations, late completion of existing power projects, financial recklessness and sabotage of government's efforts at revitalizing the power industry through acts of vandalism.

### **Summary**

- Resources are useful for living and non living things within a geographical location.
- The major mineral resources of Nigeria include Gold, Petroleum, Limestone, coal, tin and Columbite.
- Minerals contribute to the economic development of a country through raw materials provision, employment generation, infrastructural development, growth of towns, source of power, improved standard of living, foreign exchange earning, acquisition of skills, income to miners and production of geological maps.
- Problems of mineral exploitation include soil erosion, environmental pollution, oil spillage, environmental hazard, conflicts, government regulations and reduction in agricultural land.
- Power refers to anything used in generating energy. The major power resources are Hydro Electric Power (H.E.P) and thermal power plants.
- Water is a unique resource that has no substitute. These are renewable and non renewable water resources. Rivers in Nigeria include R.Niger, Benue, Osun, Ogun, Osse, Sokoto, Kaduna, Cross River, Anambra, and Donga. The lakes in Nigeria are Lake Chad (natural), Kainji and Shiroro lakes (artificial).
- The importance's of Nigerian rivers/ lakes/ basins are irrigation, tourism and recreation, transportation, H.E.P generation, employment opportunity and food supply.
- Vegetation resources of Nigeria are divided into Forest, Savanna, and Montane vegetation.
- Nigeria in response to previous attempts at environmental management and is currently embarking on sustainable forest development in order to sustain and protect her environment.

### **Revision Questions**

#### **Objective Questions**

1. All the following minerals are found in Nigeria except  
A. coal B. bauxite C. tin ore D. columbite (WAEC 1990)
2. What is closely associated with petroleum?  
A. Tine B. Coal C. Natural gas D. Limestone
3. Petroleum is a sedimentary rock mineral found in one of the following states.  
A. Borno state B. Rivers state C. Kano state D. Osun state

4. The largest of all vegetation belts in Nigeria is
  - A. rainforest
  - B. guinea savanna
  - C. Sudan savanna
  - D. Sahel savanna
5. Montane vegetation is found in highland area like
  - A. Port Harcourt
  - B. Lagos
  - C. Lokoja
  - D. Jos
6. The Shiroro H.E.P. station is located on the river
  - A. Gongola
  - B. Shiroro
  - C. Niger
  - D. Kaduna (WAEC June 1992)
7. River Niger takes its sources from
  - A. guinea highlands
  - B. north central highlands
  - C. Enugu scarp
  - D. Adamawa highlands
8. Which of the following rivers in Nigeria provides irrigation, water and hydro-electricity?
  - A. Sokoto
  - B. Kainji
  - C. Cross River
  - D. Ogun
9. All the following are ways in which rivers are useful to man except the
  - A. formation of political boundaries between countries
  - B. provision of rich agricultural land
  - C. generation of hydro-electricity
  - D. relocation of settlement after flooding
  - E. promotion of trade and commerce
10. Vegetation resources can be utilized by man for all the following except
  - A. food
  - B. habitat
  - C. timber
  - D. medicine (June 1999)

### **Answers**

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

### **Essay Questions**

- 1a. Describe the significance of minerals as an environmental resource.
- b. Highlight three major problems resulting from the exploitation of mineral resources. (SSCE June 1995)
- 2a. Describe the factors which favour the development of hydro-electric power (H.E.P.) resources.
- b. State four ways in which minerals are of economic importance in Nigeria. (SSCE June 2002)
3. Outline 5 ways in which crude oil contribute to the economic development of Nigeria (WASSCE June 2004)
4. State the benefits of hydro-electric power supply to the people of Nigeria.
- 5a. On an outline map of Nigeria, name and locate:
  - (i) Rivers Donga, Benue, Sokoto, Niger and Cross
  - (ii) One natural lake and one artificial lake
  - (iii) The Jos Plateau and the Western highlands
- b. Describe the importance of rivers to the economy of Nigeria.