



OBJECTIVES

At the end of this chapter, students should be able to:

- â—† define the meaning of forest and forestry.
- â—† state the importance of forest and forestry.
- â—† state forest regulations in Nigeria.
- â—† state and discuss forest management practices in Nigeria.

6.1 Introduction

A forest is an area of land that is covered with trees and bushes. It could also mean a woody ground, trees or pasture that grows in the wild or cultivated for a specific purpose.

6.2 Meaning of Forest

A forest is a plant community predominantly consisting of trees or other woody vegetation which occupies an extensive area of land. A forest is in a relatively fixed self-regulating condition in its natural state over a long period of time. The climate, soil and topography of where it is located determine the general characteristics of the trees of a forest. In local environments, the dominant tree species are usually associated with certain shrubs and herbs. The type of vegetation on the forest floor is influenced by the larger and taller plants because low vegetation affects the organic composition of the soil. Disturbances such as forest fire and timber harvesting associated with forests often result in a shift to other forest types. Forestry is the management of forestlands for maximum sustained yield of forest resources and benefits. Although forestry originally concerned mainly timber production, it now also involves the management of grazing areas for domestic livestock, preservation of wildlife habitats, watershed protection, and the development of recreational opportunities. The management of forestlands therefore helps to ensure that wooded areas are used for maximum benefit according to their nature.

6.3 Roles of Forests in the Ecosystem

Forests provide the following benefits to the ecosystem:

1. Wildlife habitat and recreational opportunities in forest reserves.
2. Prevent soil erosion and flooding.
3. Provide clean air and water and contain tremendous biodiversity.
4. Defence against global climate change
5. Provide life-giving oxygen and consume huge amounts of carbon (IV)oxide by the process of photosynthesis.
6. Reduce the effects of global warming by decreasing the amount of carbon dioxide in the atmosphere.
7. Provide habitat for a wide variety of plants and animals and perform many other important functions that are beneficial to humans.
8. The forest canopy and root systems provide natural filters for the water from lakes and rivers.
9. The forest canopy intercepts raindrops and re-distributes precipitation that can cause flooding

and erosion.

10. Forests also increase the ability of the land to store water. The forest floor can hold water as much as five times its weight and a tree contains water in its roots, trunk, stems and leaves.

11. Because of all the stored moisture, forests help to maintain an even flow of water in rivers and streams in times of flood or drought.

6.4 Important Tree Species in Nigeria

- 1.** Obeche
- 2.** Sapele
- 3.** Iroko
- 4.** Mahogany
- 5.** Teak
- 6.** Afara
- 7.** Black Afara
- 8.** Camwood
- 9.** Opepe
- 10.** Ukpaka

6.5 Importance of Forestry

Forests and forest management practices are important for the following reasons:

- 1.** Forest trees are used for making paper and cardboards; for example, southern pine, aspen, spruces, douglas fir and oaks. Poles and pilings are also obtained from forests.
- 2.** Forestry provides employment opportunities which stabilise rural communities and reduce rural–urban drift.
- 3.** Forests provide medicinal herbs.
- 4.** Forest resources are important in promoting rural development.
- 5.** Forests provide a very important source of fuel (firewood).
- 6.** Forests modify the climate of an area.
- 7.** Production and harvesting of trees for varied uses, as in the fabrication of telegraph poles and railroad ties, and in building construction, ship-building, and furniture manufacture.
- 8.** Forest serves the lumber industry. It provides support for various businesses that convert trees or timber into lumber products. Other industries convert timber into pulp and paper, chemicals or fuel wood.
- 9.** Forests help in recycling of essential nutrients such as nitrogen and phosphorus and absorbing carbon dioxide from the atmosphere.
- 10.** It helps in regulating atmospheric temperature, protects watersheds and harbours pollinators for agricultural crops.
- 11.** Forestry resources provide man with recreational facilities such as gardens and amusement parks.
- 12.** Forest products are a major source of industrial raw materials especially in the pulp and paper industries.
- 13.** They serve as tourist centres.

6.6 Forest Regulation

These are laws promulgated by the government in the form of decrees, edicts and bye law that prevent the indiscriminate felling of trees from the forest. The laws aim at conservation and

preservation of forest trees and other resources.

These regulations include the following:

1. Ban on indiscriminate felling of trees.
2. Timber companies must be duly licensed by government.
3. Hunting prohibition in forest reserves.
4. Ban on cutting down immature trees.
5. Ban on farming in forest reserves.
6. Ban on bush burning.
7. Ban on collection of leaves, firewood and other non-timber forest resources.
8. Law of mandatory replacement of cut down trees.
9. Allowing only authorised timber companies to cut down trees.

6.7 Forest Management Practises in Nigeria

Due to poor economies, people resort to clearing the forest and planting crops in order to survive. Huge areas of the richest forests in the world have been cleared for fuel wood, timber products, agriculture and livestock. These forests are rapidly disappearing and so, there is the need to put in place effective management practices that will preserve the forest. The following are common forestry practices in Nigeria:

6.7.1 Selective exploration

This is a deliberate plan or effort at obtaining a continuous timber yield through selective cutting of matured trees. Judicious cutting of matured forest trees enables the younger ones left to attain maturity before they are cut.

6.7.1.1 Advantages

- â This practice discourages erosion.
- â It allows younger trees to mature before cutting.
- â It ensures that the land is not left bare at any point in time.

6.7.2 Forest regeneration

This involves natural or artificial method of growing cut trees as well as improvement of tree stands to ensure continuity of species. Forest regeneration is a vital process that leads to healthy and diverse forests. Artificial planting by direct seeding or transplants is done in conjunction with clear cutting; treatment with fertilizers to increase production; selection and breeding of quality timber trees and producing strains that excel in growth, pest and disease resistance or other desirable characteristics. These measures fit into the pattern of an intensive forestry in which greater production is obtained through technical knowledge and increased mechanisation.

6.7.3 Afforestation

Afforestation involves establishment of plantations of trees. This process involves acquiring a piece of land for growing tree seedlings to make a forest. The chief objective of afforestation projects is the creation of forests in areas which do not have natural forests.

6.7.3.1 Advantages

Afforestation helps to

- â Check desert encroachment in the North

â Check erosion in the South.

6.7.4. Clear-cutting

Clear-cutting is a forestry harvesting technique in which all the trees in a given area are removed.

6.7.4.1 Advantages

â The eventual production of trees of approximately the same age and height, which are easy to harvest using mechanised equipment.

6.7.4.2 Disadvantages

â The elimination of old-growth forest and animal habitat.

â Excessive erosion and an unappealing landscape.

In an effort to conserve forest resources, the timber industry is modifying clear-cutting techniques to include the complete use of all harvested trees and the replanting of clear cut areas.

6.7.5 Taungya system

This is a system of crop husbandry and forest management. This system involves the development, care and reproduction of stands of timber species as well as planting food crops. The arrangement in this system of cultivation of crops allows for the annual or biennial crops. Adequate care for young trees is achieved in this system.

6.7.6 Deforestation

This is indiscriminate cutting or over-harvesting of trees for lumber or pulp. It also includes the clearing of land for agriculture, ranching, construction, or other human activities. For example, arable crop farmers regard forests as impediments to cultivation and therefore remove them as quickly as possible. This attitude encourages the "cut and get out"™ philosophy

among timber operators.

The practice of technical forestry must be encouraged in order to avoid problems associated with deforestation and these include

â clear-cutting

â selection

â seed tree

â shelterwood.

In clear-cutting, all trees in a given area are cut, and reproduction is obtained by artificial planting or by natural seeding from trees bordering the cleared areas.

6.7.6.1 Implications of deforestation

In a continuous deforestation

â There is no longer a good root system to anchor the topsoil.

â The decaying plant matter is exposed and prevented from replenishing soil nutrients.

â If the deforestation cycle continues, the area may eventually resemble a desert.

Activity

Visit a nearby forest resource centre and identify the tree species that are available. Write out both

the local and scientific names and the uses of these tree species. Thereafter, obtain some tree seedlings and let each student plant a tree in appropriate locations within the school premises.

SUMMARY

A forest is an area of land that is covered with trees and bushes.

â—† It is a plant community predominantly consisting of trees or other woody vegetation which occupies an extensive area of land.

â—† Forestry is the management of forestlands for maximum sustained yield of forest resources and benefits.

â—† Forests provide benefits such as wildlife habitat and recreational opportunities, prevent soil erosion and flooding, provide clean air and water and contain tremendous biodiversity in the ecosystem.

â—† Forests also provide defence against global climate change; provide life-giving oxygen and consume huge amounts of carbon (IV)oxide by the process of photosynthesis.

â—† The forest canopy and root systems provide natural filters for the water from lakes and rivers and also intercept raindrops and re-distribute precipitation that can cause flooding and erosion.

â—† The important tree species in Nigeria are obeche, sapele, iroko, mahogany, teak, afara and camwood.

â—† Forests and forest management practices are important for the following reasons among others:

âœ§ Forestry provides most hardwood species suitable for building materials.

âœ§ Forest trees are used for making paper and cardboards, poles and pilings.

âœ§ Forestry provides employment opportunities which stabilise rural communities and reduce rural–urban drift.

âœ§ Forestry provides medicinal herbs.

â—† Forest and forest product uses and management are regulated by statutory law enacted by a legislative body at the federal, state and local level in order to conserve or preserve forest trees and other resources.

â—† Exploitative logging damages the forest and also brings about absolute destruction of animals.

REVISION QUESTIONS

Essay Questions

1. Define forest and forestry.
2. State six importance of forest and forestry.
3. What is selective exploration and state two advantages of this practice.
4. What is deforestation and state two implications of this practice to the environment?
5. Describe the taungya system and state two major advantages of the practice.

Objective Questions

1. An area of land that is covered with trees and bushes is called
 - (a) forest.
 - (b) farmland.
 - (c) savanna.
 - (d) swamp.
2. A plant community predominantly consisting of trees or other woody vegetation which occupies

an extensive area of land is called

- (a) swamp.
- (b) farmland.
- (c) savanna.
- (d) forest.

3. The management of forestlands for maximum sustained yield of forest resources and benefits is called

- (a) monastery.
- (b) forestry.
- (c) industry.
- (d) nursery.

4. Forests provide the following benefits to the ecosystem except

- (a) wildlife habitat and recreational opportunities.
- (b) prevent soil erosion and flooding.
- (c) contain tremendous biodiversity.
- (d) pollute clean air and water.

5. The following are examples of important tree species in Nigeria except

- (a) obeche.
- (b) hibiscus.
- (c) mahogany.
- (d) iroko.

6. Forests and forest management practices are important for the following reasons except

- (a) they provide medicinal herbs.
- (b) as parks for motor vehicles.
- (c) forest trees are used for making paper and cardboards.
- (d) forestry provides hardwood species suitable for building materials.

Answers

1. a 2. d 3. b 4. d 5. b 6. b