

CHAPTER 9 ENVIRONMENTAL CONSERVATION

Objectives

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

- define the term ‘environmental conservation’.
- describe the various methods applied in environmental conservation.
- highlight the importance of environmental conservation.
- identify the problems associated with environmental conservation and proffer solutions to them.

9.1 Definition

Environmental conservation simply refers to every effort aimed at storing, utilizing and protecting resources within the physical environment by avoiding wastes and at the same time improving the quality of the environment. It seeks at arranging and utilizing resources in such a way that it is not wasted, abnormally used and at the same time protect them such that they will be available for future use without hampering or putting the environment at risk of danger.

Environmental conservation is specifically aimed at:

1. protecting and keeping limited environmental resources especially wildlife which by nature can become extinct and non-available;
2. minimizing and monitoring the use of resources in such a way that they are not wasted, over-used or abused; and
3. reducing the demand for resources, their consumption and saving them for future use. In this respect, it seeks to search for alternatives to resources that are fast depleting.

Based on the above, several countries of the world have initiated programmes aimed at identifying available environmental resources and how they can be effectively harnessed and used for the benefit of their citizens. Since environmental resources are those entities found within the physical environment that are useful for man and capable of sustaining life, it becomes essential that enough attention be given to how they are allocated, harnessed and exploited for man's use. For this to be, there is the need to evolve and develop appropriate methods that will guarantee the conservation and management of existing environmental resources.

9.2 Methods of Environmental Conservation

There are several methods so far devised on how to conserve environmental resources and help prevent wastes in their allocation and use. Some of the methods include:

1. Afforestation

These are efforts aimed at either planting new trees in a particular place that is devoid of vegetation cover or planting trees to replace the ones that have been felled. It is an expansive programme that covers every aspect of forest life and how to preserve and keep it for future use without hampering the immediate environment. It involves the creation of special areas where large forests are planted such as forest reserves. Here, all varieties of tree species are planted and they are protected from human interference in the form of lumbering, poaching, illegal hunting of games etc. In addition to these, legal enactments are made where penalties and sanctions are established for any form of violation. Publicity campaigns are also mounted wherein people are sensitized and made aware of the benefits of

planting and protecting trees from indiscriminate felling and destruction.

2. Erosion Control

These are measures aimed at controlling the rate of soil erosion in a particular place. Soil erosion is an environmental problem that is capable of

depleting the fertility of soils and render them useless for man. Measures taken in combating soil erosion include:

- (i) Planting of cover crops to help consolidate the soil and prevent it from being exposed to certain agents such as wind or water that can easily carry it away.
- (ii) The practice of planting special trees that serves as wind breakers that are capable of reducing wind velocity and its power to move exposed soil particles. The wind breakers are also known as **shelter belts**.
- (iii) The construction of water ways which serve as channels through which excess water can flow without having contact with exposed soil particles.
- (iv) The practice of specialized farming systems such as contour ploughing, strip farming, terrace farming etc. all of which are aimed at consolidating loose soil particles and preventing them from being washed or moved away.

3. Improved Farming Techniques

Over the years, a lot of farming techniques have been developed all aimed at improving soil fertility, limiting the level of land usage and producing crop varieties that do not make much demand on the soil and the physical environment. Such farming techniques include organic agriculture which seeks to discourage the use of chemical

fertilizers, supports the application of biotechnology to the development of new crop seedlings and mass application of mechanization in the cultivation, harvesting and processing of crops.

4. Environmental Education

This is a form of human instruction and learning based on the spread of information about the physical environment and how it can be better preserved and managed for the benefit of mankind. It is a learning process aimed at making people aware of the total environment (physical, biological and human) and its associated problems and how people can be made to develop necessary skills towards solving environmental problems and preventing the occurrence of new ones. Hence, environmental education aims at equipping people with essential skills with which they can manage the environment effectively. Through environmental education, people are better empowered to deal with issues and problems emanating from the workings and interactions within the environment. Knowledge from this will assist people to be better managers of the resources embedded in the environment and ensuring that such resources are used effectively to meet the needs of mankind in whatever place they find themselves. Environmental education stands as a tool for making people aware of the need to conserve available resources and protect them in store for future use. Conservation encourages the best use of resources and storing the excess to meet future demands.

5. Recycling

This is a conservation measure aimed at minimizing the generation of waste from the use of resources by recovering usable products that

might otherwise become waste. Examples include the recycling of aluminium or metal scraps through smelting processes, the production of fresh paper from waste papers especially tissue products, the recovery of plastic and rubber from disused plastics. Recycling of a product utilizes modern technology which involves the application of scientific processes in the production of fresh commodities from disused materials.

6. Resource Recovery

These are direct attempts at converting waste materials into productive uses and commodities. It involves the processing of wastes to recover an original raw material which can now be used in producing new commodities. It is similar to recycling but is slightly different in terms of technology and the fact that the end product is not yet a final one like that of recycling. It still has to go through further processing before it can now turn to a final product. In most cases, it involves the use of household wastes unlike industrial wastes that are used for recycling purposes. It is equally based on the use of modern technology and is expensive to operate.

7. Environmental and Waste Disposal Laws

In recent times, a lot of legislations and laws are made which are aimed at conserving resources, preventing waste and protecting the environment from disuse through inappropriate waste disposal methods. It has been discovered that where a lot of wastes are generated, it is capable of depleting available resources and thereby putting the environment at risk. To prevent such occurrences, laws have to be made. These laws prescribe sanctions and penalties against

behaviours that promote waste generation and inability to dispose them appropriately. The main objective of these laws is to discourage resource wastage, encourage prudent use of resources and instill in people, a culture that seeks to dispose wastes in an appropriate manner.

9.3 Processes and Steps in Environmental Conservation

All over the world, there is a growing awareness as to the rate at which environmental resources are being depleted and the need for their conservation. In conserving the resources, there are some major steps that ought to be taken. They include:

1. Investigating and determining the types of natural resources that are available, their volume of stock, the extent and the best uses for which they can be put. This is known as RESOURCE INVENTORY.
2. Protection of available natural (environmental) resources from misuse, abuse and willful destruction through laws and best management practices.
3. Repairing and recovering those natural resources that have been damaged, abused, wasted, misused and those that need repair or renovation.
4. Upgrading and improving the productivity of the natural resources so that they can be better put into maximal use and preventing waste.

9.4 Importance of Environmental Conservation

Environmental conservation is a practice that is considered important in view of the benefits it holds for mankind. Some of which include:

1. It ensures that environmental resources are better utilized, helps identify areas of possible wastes and provides means of reducing it

such that the resources are put into best use possible over a long period of time without adversely affecting the environment.

2. It provides an avenue for assessing the capacity of the environment to sustain human population and improve their quality of life.
3. It provides information on how man can improve the environment by preserving the various resources that are found within it.
4. It is a process by which countries can increase their revenue base and through that sustain their economy.
5. It is a means towards preserving the environment by ensuring the existence of living organisms especially the endangered species.
6. It has increased man's capacity to improve on the level of technology that can be used in maximizing the benefits of the resources especially through recycling and resource recovery.

9.5 Problems of Environmental Conservation

1. Absence of adequate awareness and publicity on the need to conserve resources and also preserve the environment for man's benefit.
2. Inadequate funding of agencies promoting conservation in Nigeria e.g. NHA (National Hydrological Agencies) and other related research institutes, etc.
3. Apathy and uncooperative attitude of the public towards resource conservation matters through the exhibition of certain behaviours such as non-readiness to report cases of resource wastage.
4. Unwholesome practices that affect the value of environmental resources such as bush burning, lumbering, poaching, illegal hunting, illegal mining activities, bunkering, pollution, etc.
5. Non-enforcement of laws on conservation by agencies responsible for these activities. Even where there are prosecutions, they are not properly executed or concluded.

6. Inability of government agencies to acquire latest technologies that will promote resource conservation.
7. Erroneous beliefs of Nigerians that the country is blessed with resources which are in abundance and hence no need for conservation as they can never be depleted. This has encouraged waste and misuse of available resources.

Summary

- Environment conservation consists of efforts and activities aimed at storing and protecting natural resources from misuse, abuse and waste.
- Conservation is aimed at protecting environmental resources, minimizing overuse and reducing demand for the resource by identifying possible alternatives.
- Methods of conserving environmental resources include: afforestation, erosion control, improved farming techniques, environmental education, recycling, resource recovery and waste disposal legislations.
- Steps involved in environmental conservation consists of the preparation of resource inventories, management of the use of resources, repairing and recovery of used resources and improving the productivity of the resources.
- Environmental conservation has several benefits such as better use of resources, provision of revenue, increasing man's capacity to manage the environment and improving the quality of the environment.
- Problems of environmental conservation include: late acquisition of modern technology, poor funding, public apathy to conservation, non-

enforcement of environmental laws, etc.

Objective Questions

1. Environmental conservation least focuses on
 - A. vegetation
 - B. human resources
 - C. wildlife
 - D. soils
2. Which of the following is not a reason for environmental conservation?
 - A. Prevention of wastes
 - B. Management of the use of resources
 - C. Avoiding misuse
 - D. Encouraging indiscriminate exploitation of resources
3. All but one of the following are methods of environmental conservation.
 - A. Afforestation
 - B. Resource recovery
 - C. Erosion control
 - D. Resource exploitation
4. Recycling is an appropriate method for processing
 - A. domestic wastes
 - B. industrial effluents
 - C. metal scarps
 - D. minerals
5. Which of the following is not an erosion control measure?
 - A. Cover cropping
 - B. Drainage trenches
 - C. Surface mining
 - D. Shelter belts

6. Which of the following is not an environmental resource?
 - A. Forests
 - B. Minerals
 - C. Labour
 - D. Wildlife
7. Environmental education is a means of increasing people _____ on resource conservation.
 - A. knowledge
 - B. experience
 - C. ability
 - D. perception
8. A fundamental problem affecting the practice of resource conservation in developing countries is
 - A. inadequate funding
 - B. dwindling environmental knowledge
 - C. indiscriminate resource exploitation
 - D. low living standards
9. Which is the most appropriate measure for conserving forest resources?
 - A. Creation of housing estate
 - B. Establishment of forest reserves
 - C. Planting of wind breakers
 - D. Construction of physical barriers
10. Which of the following activities affect the practice of environmental conservation?
 - A. Building of zoos
 - B. Lumbering
 - C. Recycling
 - D. Resource recovery

Essay Questions

- 1a. Give four reasons for supporting environmental conservation.
- b. Identify five benefits of environmental conservation to man.
- 2a. Briefly describe four methods of environmental conservation.
- b. Give three problems associated with the practice of environmental conservation.
- 3a. Give four measures that can be taken to protect the use of forest resources.
- b. Describe two ways in which resources can be recovered from water.
- 4a. Suggest three steps involved in the conservation of resources.
- b. Give three reasons why environmental conservation is difficult to operate in developing countries.
- 5a. What is the difference between recycling and resource recovery?
- b. Give three reasons why resource recovery is not common in developing countries.