

Notes

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SOCIETY AND ENVIRONMENT

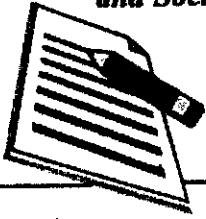
*E*nvironment can be described as the natural world of land, water, air, plants and animals that exist around us. It forms the basis of our existence and development. The dictionary meaning of the word 'environment' is 'surrounding' - the external conditions influencing development or growth of people, animals or plants; living or working conditions etc. In the beginning, the environment of early man had consisted of only physical aspects of the planet earth (land air, water) and biotic communities (plants and animals including man and his functions, organizations and institutions) but with the march of time and advancement of society, man extended his environment through his social, economic and political functions. Environment, therefore, refers to the sum total of conditions, which surround man at a given point of time.

In this lesson, we are going to learn about our environment. Environment, once the focus of only geographical study, had been neglected and pushed to the background. It has recently regained its position. As of today, Environmental issues are no longer confined to geography and allied disciplines but have also drawn the attention of the common man.

OBJECTIVES

After reading this lesson, you will be able to:

- explain the meaning of environment;
- explain the relationship between man and his environment;
- explain bio-sphere and socio-sphere; and
- explain the effects of environment on human society.



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22.1 MEANING OF ENVIRONMENT

Environment is viewed in different ways and angles by different groups of people and disciplines. It may be safely argued that environment is an inseparable whole and is constituted by the interacting systems of physical, biological and cultural elements which are inter-linked individually as well as collectively in many ways.

Physical elements (space, landform, water bodies, climate, soils, rocks and minerals) determine the variable character of the human habitat, its opportunities as well as its limitations. Biological elements (plants, animals, micro-organisms and man) constitute the biosphere; cultural elements (economic, social and political) are essentially man-made features, which go into the making of cultural milieu.

The term 'environment' originates from the French word 'environ' or 'environner' meaning 'around', 'round-about', 'to surround' or 'to encompass'.

22.2 TYPES OF ENVIRONMENT

The environment is both physical and biological concept, it includes both the non-living (abiotic) and living (biotic) components of the planet earth. Thus based on basic structure, the environment can be divided into two basic types i.e.

- 1) Physical or abiotic environment and
- 2) Biological or biotic environment.

Based on physical characteristics and state, abiotic or physical environment is sub divided into three broad categories –

- (i) Lithosphere (solid earth)
- (ii) Hydrosphere (water component) and
- (iii) Atmosphere (gas).

The biotic components of the environment consist of plants (Flora) and animals (Fauna) including man as an important component and micro organisms.

22.3 RELATIONSHIP BETWEEN MAN AND ENVIRONMENT

The study of relationship between man and environment has always attracted attention. The relationship of man and environment has also influenced the

development of human society. It may be noted that, of all the organisms, man is the most skilled and civilized and therefore, it is significant to note the following three aspects of man.:

- (i) **Physical** man is a component of the biological community and as such, requires basic elements of physical environment such as air, water, food and habitat etc, like other biological population and release wastes in the eco-system.
- (ii) **Social** man establishes the social institutions, forms the social organizations and formulates laws and policies to safeguard his existence, interests and welfare.
- (iii) **Economic** man derives and utilizes resource from the physical and biological environment with his skills and technologies.

The changing relationship of man with the environment from pre-historic to modern times can be divided into the following four periods: -

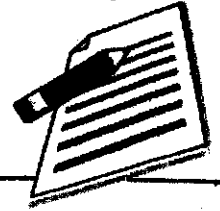
- (a) Hunting and food gathering.
- (b) Animal domestication and pastoralism.
- (c) Plant domestication and agriculture.
- (d) Science, technology and industrialization.

(a) Period of hunting and food gathering

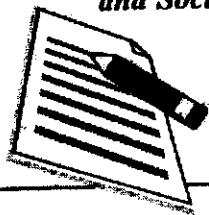
This period is related to the most primitive man when he had been basically a part of natural environment and was functionally as a 'biological man' or 'physical man' because his basic requirements were limited to food and shelter. The natural environment satisfied all his wants. The relationship between man and the environment was very friendly. Man was leading a nomadic life. Then a stage came when he learnt to hunt animals. The discovery of 'fire', which was accidental, taught man to cook animal flesh before eating. So we can say that the discovery of fire and subsequently, invention of tools and weapons made man capable of exploiting natural resources for his benefit. Some would also conclude by saying that "fire was the first major ecological tool used by man to change the environment for his own benefit.

(b) Period of Animal Domestication and Pastoralism

With the passage of time, primitive man learnt to domesticate animals for his benefits. In the beginning, he might have domesticated some milch /cattle and animals for meat and slowly his herd of domesticated animals must have increased. Domestication of animals might have given birth to group or community life among



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early people in order to protect their flock and themselves from wild animals. They still stuck to nomadic way of life, as they had to move from one place to other in search of water, food for themselves and fodder for animals.

(c) Period of Plant Domestication and Agriculture

Domestication of plants for food became a hallmark in the development of human skills of taming and controlling the biotic component of the natural environment system. Domestication of plants initiated primitive type of agriculture and sedentary settled life of people who were nomads. Cultivation of food crops resulted in the formation of social groups and organizations. Now man started settling down in the river valleys due to availability of water and fertile land which came to be known as 'river-valley civilization'. From here onwards started the journey of man to transform the natural environmental resources around him through improved farming practices resulting in gradual increase in human population. This led to clearing of forests to have access more agricultural land. With the passage of time, man developed his own cultural environment by building houses and creating towns and cities, constructing roads and bridges.

(d) Period of Science, Technology and Industrialization

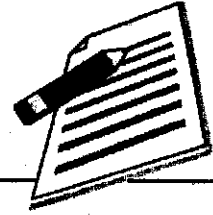
The advancement of industrial revolution in late nineteenth century and emergence of science and development of sophisticated technology, embittered the friendly relationship between man and his natural environment. The impact of modern technology on natural environment is highly complex and controversial. Highly advanced technologies and scientific techniques led to indiscriminate exploitation of natural environment which have created most of the present day environmental problems

From the days of early primitive man till today, man has venerated nature in different forms (trees, plants, animals, rivers, mountains etc). Nature worship commands great sanctity in most of the communities. There are communities, which have total reverence towards nature- 'Bishnoi' from Rajasthan in India is one such group. In the Indian tradition, nature and man form an inseparable part of the life support system. The five elements, i.e., air, water, land, flora and fauna are inter-related and inter-dependent.

INTEXT QUESTIONS 22.1

Fill in the blanks with appropriate words from brackets:

- (i) The word environment is derived from _____ word. [Latin, English, French]



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- (ii) Environment can be divided into _____ types. [2, 4, 6,7]
- (iii) Physical environment contain _____. [Biotic, abiotic, both the components]
- (iv) Biological components contains _____. [Biotic, abiotic, both the components]
- (v) The changing relationship between man and environment has been divided in ___ phases. [6, 8, 4, 5]

22.4 BIOSPHERE AND SOCIOSPHERE

22.4.1 The Biosphere

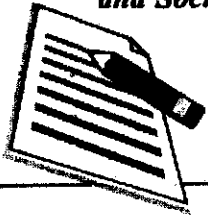
Biosphere is a life-supporting layer, which surrounds the earth and makes plant and animal life possible without any protective device. It consists of all the living organisms (the biotic component), energy (energy component) and physical environment (abiotic component). There are continuous interactions between living organisms and physical environment and also among the living organisms themselves. The average thickness of the biosphere or life-supporting layer consists of air, water, soil and rock is about 30 km.



The Biosphere of earth

The upper limit of the biosphere is determined by the availability of oxygen, moisture, temperature, and air pressure with increase in height in the atmosphere limits the upper boundary of the biosphere. The lower limits of the biosphere are determined by the availability of required amount of oxygen and light, which can sustain life. Thus, the depth of the biosphere over the land is unto the depth of the deepest roots of the trees or the depth unto which can live the burrowing organisms or the depth at which lie the parent bedrocks. The biosphere extends unto greater depth in the oceans.

The existence of life has been detected unto a depth of 9000 m in the deep oceanic trenches and deep-sea plains.



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22.4.2 Socio-Sphere

Man is a social animal with the inbuilt instinct to be with his group. Since man is most communicative, his behavioural concerns relate to his fellow beings. Thus man's attitudes to life and value system are shaped by the size and quality of the group to which he belongs.

Groups of people living together on a certain territory form a community. It comprises a composition of species, a characteristic food network and energy flow pathway. Communities thus form the living components of living components of eco-system. Over the time, species in each community carve out a special place for themselves. Community is not stable but dynamic, changing regularly over time and space.

A community has its own composition, structure, and developmental history. Environment and society are closely related and inter-dependent. Different social groups and social structures like industrial, agricultural, political, cultural, religious and aesthetic etc. have evolved and developed during various stages of development of human civilization and these social structures represent man's accumulated cultural resources primarily based on natural environment. Environment has been changing over a period of time due to

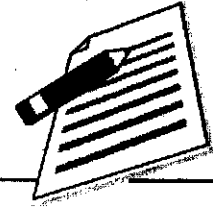
- (i) Variations in climatic and physiographic factors, and
- (ii) The activities of the species of the communities themselves.

These influences bring about a marked change in the dominance of the existing community. Human behaviour has been known by its characteristics, social organizations, social processes, economy and culture depend upon geographical environment. Density and distribution of population, social differentiation, cultural variations, character of economic, political, social, religious organizations and all social phenomena contribute in the making of the socio sphere.

INTEXT QUESTIONS 22.2

Tick true (T) or false (F)

1. Biosphere is a life-supporting layer, which surrounds the earth. (T/F)
2. The average thickness of the biosphere is about 50km. (T/F)
3. Biosphere consists of territorial and aquatic biomes system. (T/F)
4. Group of people living together on a certain territory form a community. (T/F)
5. Environment is stable and dynamic. (T/F)



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22.5 EFFECTS OF ENVIRONMENT ON HUMAN SOCIETY

Effects of environment on human society has been emerging as a major challenge for quite sometime. Development was for long associated with under exploitation of natural resources. It was little realised that obsession with under exploitation may result in over-exploitation. We seemed to have believed that natural resources are inexhaustible. Environmental process includes those physical processes, which operate on the surface of the earth both internally and externally. Though man began to interfere with the natural processes right from the beginning of sedentary life, it assumed greater in proportion after the industrial revolution.

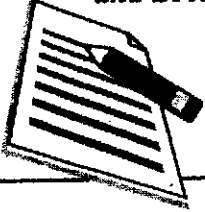
The impact of modern technology on environment is varied and highly complex as the transformation or modification of our natural condition and process leads to a series of changes in the biotic and abiotic components of natural environment process.

We have seen that man, equipped with modern technologies and advanced scientific knowledge, has become an important factor in changing the environmental processes. It has to be realized that disturbances in one of the elements of nature (ie. air, water, land, flora and fauna) gives rise to an imbalance in others. Natural processes or human factors some times aggravate natural environmental process to cause disaster for human society like (earthquakes, volcanic eruptions, floods, cyclones etc). They result in heavy loss of life and property. Environmental hazards for human health are as follows:

- (i) Air pollution causes respiratory diseases.
- (ii) Water pollution causes enteric diseases.
- (iii) Solid waste pollution causes vector-borne diseases.
- (iv) Toxic waste causes cancer and neurological disorders.



Water Pollution causes environment hazards and enteric diseases



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Therefore, education must arouse awareness about the effects of environment, as clean environment is precious for human society.

INTEXT QUESTIONS 22.3

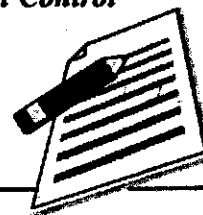
Tick true (T) or false (F).

1. Man has never interfered with environment. (T/F)
2. Effects of environment on society are always positive. (T/F)
3. Extreme events are not disastrous for human society. (T/F)
4. Education must be broad based to create awareness About environmental effects. (T/F)



WHAT YOU HAVE LEARNT

- Environment refers to the sum total of conditions, which surround man at a given point in space and time.
- In the past, the environment of man consisted only of physical aspects of the planet earth (air, water and land) and the biotic communities.
- However, in due course of time and advancement of society, man extended his environment through social, economic and political functions.
- The environment is both physical and biological concept and includes both the non-living (abiotic) and living (biotic) components of planet earth.
- On the basis of this structure, environment is divided into two types (i) physical or abiotic environment or (ii) biological or biotic environment.
- The relationship between man and the environment has changed over the years. It is interesting to note the three aspects of man (i) physical, (ii) social (iii) economic in relation to environment.
- The changing relationship of man with the environment from pre-historic to modern times can be divided into four phases.
 - i) Hunting and food gathering.
 - ii) Animal domestication and pastoralism.
 - iii) Plant domestication and agriculture.
 - iv) Science technology and industrialisation.
- Biosphere is a life supporting layer which surrounds the earth and makes plant and animal life possible without any protective device. Social, economic, cultural and political elements make the socio-sphere.



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- Man, being an active agent of environment change process, modifies the ecosystem through exploitation of natural resources. Effects of environment on human society are a major challenge. Modern technology and advanced scientific knowledge has become an important factor in changing the environment.

GLOSSARY

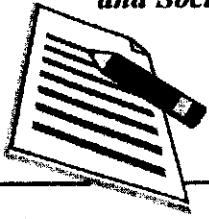
- (I) *Environment*—surroundings of external conditions, influencing development or growth of people, animals or plants, living or working conditions.
- (II) *Biotic*- living components of planet earth.
- (III) *Abiotic*- non-living components of planet earth.
- (IV) *Lithosphere*- the relatively then solid crust or outer layer of earth.
- (V) *Hydrosphere*- the water sphere applied to all the water on the earth's surface.
- (VI) *Atmosphere*- the gaseous envelope surrounding the earth.
- (VII) *Flora*- all the plants of particular area and period of time.
- (VIII) *Fauna*- all the animals of particular area and period of time.
- (IX) *Domestication*— to keep animals under control.
- (X) *Terrestrial*— plants or animals growing on land.
- (XI) *Aquatic*— growing, living or found in water.
- (XII) *Eco-system*— relationship between environment and surroundings.
- (XIII) *Biomes*— the whole complex plants and animals, of a particular special type.
- (XIV) *Species*— a group of animals, plants and human beings or organisms sharing common attributes that forms a subdivision of genes.
- (XV) *Vector borne*— a transmissible disease.



TERMINAL EXERCISE

Write answer in 100-250 words

- (I) What is an environment? (100 words)
- (II) Describe the stages of relationship between man and environment.

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- (III) What is a biosphere? Name two sub systems of biosphere.
- (IV) What is a sociosphere? (100 words)
- (V) Explain the effects of environment on human society. (100 Words)

**ANSWER TO INTEXT QUESTIONS****22.1**

1. French
2. 2
3. abiotech
4. biotech
5. 4

22.2

1. True
2. False
3. True
4. True
5. False

22.3

1. False
2. False
3. False
4. True