

ENVIRONMENTAL EDUCATION

UNIT-I

1.1 CONCEPT AND MEANING OF ENVIRONMENT:

1.1.1 CONCEPT:

Environment is everything that is around us. It can be living or nonliving things. It includes physical, chemical and other natural forces. Living things live in their environment. They constantly interact with it and change in response to conditions in their environment. In the environment there are interactions between animals, plants, soil, water, and other living and non-living things.

Since everything is part of the environment of something else, the word 'environment' is used to talk about many things. People in different fields of knowledge (like history, geography or biology) use and the word environment differently. Electromagnetic environment is radio waves and other electromagnetic radiation and magnetic fields. The galactic environment refers to conditions between the stars.

1.1.2 MEANING OF ENVIRONMENT:

The term environment has been derived from a French word “Environia” means to surround. It refers to both abiotic (physical or non-living) and biotic (living) environment. The word environment means surroundings, in which organisms live. Environment and the organisms are two dynamic and complex component of nature. Environment regulates the life of the organisms including human beings. Human beings interact with the environment more vigorously than other living beings. Ordinarily environment refers to the materials and forces that surround the living organism.

1.1.3 DEFINITION OF ENVIRONMENT:

1. “Environment is anything immediately surrounding an object and exerting a direct influence on it.” - P. Gisbert
2. “Environment is an external force which influences us.” - E. J. Ross
3. “Environment is the field of effective stimulation and interaction for any unit of living matter”. -T.D.Elliot
4. “Environment is everything that affects the individual except his genes”. - Anastasi

5. “A person’s environment consists of the sum total of the stimulation which he receives from his conception until his death”. - Boring

1.1.4 TYPES OF ENVIRONMENT:

The environment is classified into two types;

- Natural Environment
- Made- made Environment

a) Natural Environment

Components of Natural Environment:

Environment mainly consists of atmosphere, hydrosphere, lithosphere and biosphere.

- Atmosphere- the gaseous envelope surrounding the earth; the air.
- Hydrosphere - all the waters on the earth's surface, such as lakes and seas, and sometimes including water over the earth's surface, such as clouds.
- Lithosphere - the rigid outer part of the earth, consisting of the crust and upper mantle. The lithosphere comprises a number of plates.
- Biosphere –It is the layer of the planet Earth where the life exists which includes terrestrial life (flora, fauna & other microbes) and aquatic life.

It can be further divided into two types;

- Micro environment and
- Macro environment.
 - Physical and
 - Biotic environment.

(1) Micro environment - It refers to the immediate local surrounding of the organism.

(2) Macro environment - It refers to all the physical and biotic conditions that surround the organism externally.

- Physical environment refers to all abiotic factors or conditions like temperature, light, rainfall, soil, minerals etc. It comprises of atmosphere, lithosphere and hydrosphere.
- Biotic environment includes all biotic factors or living forms like plants, animals, Micro-organisms.

(b) Man-made Environment:

The man made environment comprises of the following categories

- Human groups (religious and communities).
- Material infrastructure built by man (rural and urban settlements, railways, roads etc.).
- Production relationships (factors of production-primary, secondary and tertiary activities).
- Institutional systems (education, commercial and marketing).

1.2 FOCAL ASPECTS OF ENVIRONMENTAL EDUCATION:

1.2.1 DEFINITION:

Environmental education (EE) refers to organized efforts to teach how natural environments function, and particularly, how human beings can manage behavior and ecosystems to live sustainably. Environmental Education (EE) is the teaching of individuals, and communities, in transitioning to a society that is knowledgeable of the environment and its associated problems, aware of the solutions to these problems, and motivated to solve them.

1.2.2 CONCEPTS OF ENVIRONMENTAL EDUCATION:

Any curriculum should be based on well-thought out and clearly defined concepts that one wishes the learner to acquire. Some important concepts of environmental education have interdisciplinary significance such as environmental pollution, carrying capacity, ecosystems, ecology, and conservation etc.

1.2.3 FOCAL ASPECTS OF ENVIRONMENTAL EDUCATION:

Environmental education focuses on;

1. Engaging with citizens of all demographics to;
2. Think critically, ethically, and creatively when evaluating environmental issues;
3. Make educated judgments about those environmental issues;
4. Develop skills and a commitment to act independently and collectively to sustain and enhance the environment; and,
5. To enhance their appreciation of the environment; resulting in positive environmental behavioural change

6. Awareness and sensitivity about the environment and environmental challenges.
7. Knowledge and understanding about the environment.
8. Attitude concerning environment and help to maintain environmental equality.
9. Skills to mitigate environmental problems.
10. Participating for exercising current knowledge and environmental related programs.
11. Concerns with exposing the students to real life environment.
12. Enable students to enable, analyze, evaluate and draw inference about the issues related to environment.
13. Make students understand the environmental problems and take positive actions.
14. Develop the skills of environmental actions among students in order to facilitate the journey of mankind towards sustainability.
15. To create awareness about the problems related to natural resources like land, water, mineral, food and energy resources.
16. Should educate the students to conserve the bio-diversity, save energy etc.,
17. Should reduce the use of non-renewable resources and use alternate energy.
18. Focusing on various types of pollution, their causes and effects.
19. Be aware of natural disasters, the way to prevent those disasters and the disaster preparedness.
20. Should follow the environmental managements system for sustainable development.

1.3 GOALS AND OBJECTIVES OF ENVIRONMENTAL EDUCATION:

1.3.1 GOALS OF ENVIRONMENTAL EDUCATION:

The goals of environmental education are:

- Education about the environment: To foster clear awareness of and concern about, economic, social, political, and ecological interdependence in urban and rural areas;

- Education in (or from) the environment: To provide every person with opportunities to acquire the knowledge, values, attitudes, commitment, and skills needed to protect and improve the environment;
- Education for the environment: To create new patterns of behavior of individuals, groups, and society as a whole towards the environment.

1.3.2 OBJECTIVES OF ENVIRONMENTAL EDUCATION:

The following are the objectives of environmental education:

1. Awareness: To help the social groups and individuals to acquire knowledge of pollution and environmental degradation.
2. Knowledge: To help social groups and individuals to acquire knowledge of the environment beyond the immediate environment including distant environment.
3. Attitudes: To help social groups and individuals to acquire a set of values for environmental protection.
4. Skills and Capacity Building: To help social groups and individuals to develop skills required for making discriminations in form, shape, sound, touch, habits and habitats. Further, to develop ability to draw unbiased inferences and conclusions.
5. Participation: To provide social groups and individuals with an opportunity to be actively involved at all levels in environmental decision making. There are four areas of decision making:
 - The types of environmental issues on which decisions might be made;
 - The physical setting of the prospective environmental decision, including its spatial scale;
 - The types of social groups and individuals who might interact in a process leading up to an environmental decision; and
 - The time frame within which the decision must be made.

1.4 NEED & IMPORTANCE OF ENVIRONMENTAL EDUCATION:

1.4.1 NEED OF ENVIRONMENTAL EDUCATION:

Environmental education must be able to assess environmental situation and the conditions leading to the damage of the environment. EE must target the routine and how simple changes in a daily life can make a huge difference to the environment. Protecting environment is the responsibility of everyone, hence

environmental education cannot be confined to one group or society. Every individual must be prepared for saving the environment. It must be a continuous and a lifelong process.

Above that environmental education must be practical so that teachings can be implemented directly. Conserving nature and environment will be much easier if children are taught about depleting resources, environmental pollution, land sliding and degradation and extinction of plants and animals. Education is a sort of investment that turns into a valuable asset over a period of time.

Universities and their affiliated colleges must include Environmental Engineering, Conservation and Management, Environmental Health and Social Sciences are taught. To promote environmental awareness across the Nation, the Centre for Environment Education (CEE) was established in August 1984 with a support from the Ministry of Environment and Forests, Government of India. One of the tasks of the CEE is to put efforts to give due recognition to the role of environmental education. The CEE runs many Educational Programms in this regard.

Because of the societal shifts, today's children are busy playing indoor games and electronic gadgets. They spend most of their time in watching Television, listening to music, playing video games or surfing Internet or using Computer. They have no time to travel around and to explore the natural world around them. This not only impacts the health of children but also detach them from their surroundings and nature. They are grown up into adults who are least bothered about conserving nature. Raising an environmentally educated generation is also necessary because of the depleting of natural resources. Learning and Teaching 13 Students must be encouraged to understand their surroundings and a framework for action plan must be formulated. EE is the need of the day. It must encourage social participation. Hence integrating environment education into a curriculum is a wise option to connect students with the nature right from their childhood.

1.4.2 IMPORTANCE OF ENVIRONMENTAL EDUCATION:

Environmental education deals with the need to protect the environment because global warming, pollution and many other issues are ruining our environment badly. We know the importance of healthy environment and we should take all the possible measures to keep our environment healthy. One of the most effective means to promote healthy environment is giving proper education to both new as well as old generations. Environmental education and protection is crucial for the benefit of both the environment and humans.

Education has the power to modify the society and present better knowledge to its populace. Education can stand as proper solution to solve different sorts of problems those exist in the society and therefore, education has a big role to play to save environment.

Awareness

The main role of education when it comes to environment protection is offering awareness to everyone in a society. Education can provide better awareness of a variety of environmental issues that take place day by day. Everyone in a society including kids, youths, adults and matured people can understand and become aware of the various environmental issues if they get proper education on it. Education can give right knowledge on how natural environment functions, and how human beings can deal with behaviour and ecosystems for sustainability. In the present day, a lot of people conduct environmental awareness program in schools and societies. It will help people to become aware of environment issues and take actions accordingly.

Knowledge on How to Protect the Environment

Education system can play a huge role in saving environment by imparting knowledge on how to protect the environment to people in diverse communities. Saving environment is a practice of looking after the natural environment on individual, organisational or societal levels for the gains of both the environment and humans. Environmental education aids to resolve main environmental problems like acid rain, ozone depletion, climate changes, global warming etc. Giving education for saving environment should start from primary school. Environmental education can be provided by the use of audio-visual programs, seminars, training programs, environmental awareness campaign, etc.

Knowledgeable Society

There are a lot of environmental issues around the globe. Air pollution, water pollution, unexpected climate change, garbage, and pollution of the natural environment are some of challenges faced by many other countries in the world. Education plays a massive role in building up a society that is knowledgeable towards the environment and its associated problems. Environmental education teaches individuals and communities to know about the environment and its related problems, become aware of the solutions to the environmental problems, motivate the people to solve the issues and take proper actions to save environment from potential issues.

Solve Complex Issues

Environmental education can help to solve complex issues that are present in a society. Environmental issues are one of the main causes of many diseases, health issues and long term livelihood problems in India. So, incorporating education in schools and conducting environmental awareness campaign in communities can bring people together, discuss about the environmental issues, engage with different sorts of people, make practical judgements about varied environmental issues and respond to the issues effectively. Education on environment will guide people to think seriously, deeply, and productively.

Promote a Holistic Approach

Education on saving environment or effective environment protection programs promote a holistic and lead by example approach among people. It allows people to make certain sustainable and fair use of resources devoid of damaging the environment. Effective programs conducted in schools or any other places encourage kids and parents to carry environmental education into their home. Environmental education strategies include training individuals to prosper in a sustainable society. Education helps people to establish a strong bond with nature. Nature appreciation and awareness education or programs promotes an ecologically sustainable future.

Enhance Appreciation of Environment

Education indeed enhances appreciation of environment amid people. Enhancing appreciation of the environment among citizens can give rise to overall positive environmental behavioral change. Air pollution, poor managing of waste, rising water shortage, declining groundwater tables, water pollution, low conservation and quality of forests, biodiversity loss, and land & soil degradation are a few of the main environmental issues faced by global world and population explosion also adds stress to environmental issues and its resources. So, education on environmental issues are important today since it lets people to build up skills, foster a dedication to take steps individually and communally to maintain and enhance the environment.

Making a real investment in environmental education is very important since we live in an epoch where more and more people are disconnected from nature and unaware of critical environmental issues. Education is a tool for self-empowerment because it enables us to take serious and effective action. Environmental education leads people to be future conservation leaders and encourage them to take serious and effective action towards critical environmental issues of the day.

Qualitative & quantitative analysis in Environmental Education

Environmental education at school level includes basics and avoids much of the quantitative aspect. Stats and facts are very limited which are just enough to provide student with some stats which can be compared. At higher level especially when studying the subject in detail stats and figures cannot be neglected. Numbers act as the basis for comparison in the improvement of deterioration of the condition. Although qualitative data is easy to find but the results and decisions can be made with the help of figures. NGOs, educational institutions, Govt. and concerned agencies require figures to reach to any conclusion. Based on the findings policies to tackle the issues such as air pollution, decrease in green areas/cover, quality of water, depletion of groundwater etc are made.

1.5 CORE THEMES OF ENVIRONMENTAL EDUCATION:

1. Lifelong learning

The potential for learning about sustainability throughout one's life exists both within formal and non-formal educational settings.

2. Interdisciplinary approaches

Education for sustainability provides a unique theme to integrate content and issues across disciplines and curricula.

3. Systems thinking

Learning about sustainability offers an opportunity to develop and exercise integrated systems approaches.

4. Partnerships

Partnerships forged between educational institutions and the broader community are key to advancing education for sustainability.

5. Multicultural perspectives

Achieving sustainability is dependent upon an understanding of diverse cultural perspectives and approaches to problem solving.

6. Empowerment

Lifelong learning, interdisciplinary approaches, systems thinking, partnerships, and multicultural perspectives empower individuals and institutions to contribute to sustainability.

1.6 SCOPE OF ENVIRONMENTAL EDUCATION:

Because of environmental studies has been seen to be multidisciplinary in nature so it is considered to be a subject with great scope. Environment age not limited to issues of sanitation and health but it is now concerned with pollution control, biodiversity conservation, waste management and conservation of natural resources. This requires expert eyes and hence is creating new job opportunities. The opportunities in this field are immense not only for scientists but also for engineers, biologists. There is a good chance of opportunity to find a job in this field as environmental journalists. Environmental science can be applied in the following spheres

Ecosystem structure and function:

The study of ecosystems mainly consists of the study of the processes that link the living organism or in other words biotic component to the non-living organism or abiotic component. So for the study of environment we should be aware of biotic and abiotic components.

Natural Resource Conservation:

For managing and maintenance of forests which are natural resources and for the maintenance of wildlife forms task under natural resource conservation.

Environmental Pollution Control:

With the knowledge of environmental science everybody can control the pollution. He/she can handle the waste management and also look for ways to control pollution on the aspect of pollution control.

Environment Management:

There are several independent environmental consultants who are working with Central and State pollution control Board. They offer advice to solve the problems of environment the optimum solution for the upcoming problems. They give direction for controlling pollution due to industrial development. There are several current consultants who are working with government pollution control boards, involved in policy making, pollution control, maintenance of ecological balance.

Scope of Environmental Education in Industry:

Environmental scientists work towards maintenance of ecological balance, they also work towards conservation of biodiversity and regulation of natural resources as well as on preservation of natural resources. Most of the industries have a separate environmental research and development section. These sections

govern the impact that their industry has on the environment. Our environment is being degraded by the rapid industrialization. To combat this menace there is a growing trend towards manufacture of "green" goods and products. So we can say that there is a good scope in the field of industry from EE.

Research and Development:

Research and development has tremendous scope due to increment in public awareness regarding the environment. Various universities and governmental organizations offer a scope for such research. These universities conduct research studies in order to develop the methods toward monitoring and controlling the source of environmental pollution. Due to an increasing threat from global warming , many steps are being undertaken for the reduction of greenhouse gases and the adoption of renewable energy resources. They generate awareness now regarding the use of solar energy for variety of purposes. This provides scope of environmental history in the field of research and development.

Social Development:

NGO (non-governmental organizations) help in creating awareness regarding the protection of the environment and making the masses aware of various environmental issues. They also generate a public opinion in this field. They work towards disseminating information and in bringing about changes in political policies that are personally effect the environment. The social dimension of this profession includes controlling population explosion through organizing advisory awareness camps.