

Component-I (A) - Personal Details

<i>Role</i>	<i>Name</i>	<i>Affiliation</i>
<i>Principal Investigator</i>	Prof. Masood Ahsan Siddiqui	Department of Geography, Jamia Millia Islamia, New Delhi
<i>Paper Coordinator, if any</i>	Dr. Saleha Jamal	Aligarh Muslim University, Aligarh
<i>Content Writer/Author (CW)</i>	Ashutosh Jaiswal	Indian Forest Service Ministry of Environment, Forest and Climate change, Government of India
<i>Content Reviewer (CR)</i>	Dr. Saleha Jamal	Aligarh Muslim University, Aligarh
<i>Language Editor (LE)</i>		

Component-I (B) - Description of Module

<i>Items</i>	<i>Description of Module</i>
<i>Subject Name</i>	Geography
<i>Paper Name</i>	Environmental Geography
<i>Module Name/Title</i>	Environmental Education
<i>Module Id</i>	EG-34
<i>Pre-requisites</i>	
<i>Objectives</i>	
<i>Keywords</i>	EE, Awareness, Knowledge, Skill, Attitude, Primary, Secondary

Structure

1.1 Introduction

1.2 Objectives of Environmental Education

1.3 Scope of Environmental Education

1.4 Guiding Principles of Environmental Education

1.5 Components of Environmental Education

1.6 Levels of environmental education

1.7 Target Population for Environmental Education

1.8 Need and Significance of Environmental Education

1.9 Constraints to Implementing Environmental Education

1.10 Conclusion

Objectives

- Define environmental education and levels of education.
- To draw attention towards the aims and objectives of environmental education.
- Highlight significance of environmental education.
- Highlight the principles of environmental education.
- Scope of environmental education.

1.1 Introduction

The pursuit of sustainable development and environmental conservation policies, objectives and targets requires the public to be sufficiently sensitized about the multiple dimensions of environment and development. Awareness and understanding of environmental issues provide the basis and rationale for commitment and meaningful action towards environmentally sound and sustainable development. Education has been identified as a critical force for adopting a range of strategies for implementing such policies and programmes.

Environmental education may best be defined as a process directed at creating awareness and understanding about environmental issues that leads to responsible individual and group actions. Successful environmental education focuses on processes that promote critical thinking, problem solving, and effective decision-making skills. Environmental education utilizes

processes that involve students in observing, measuring, classifying, experimenting, and other data gathering techniques. These processes assist students in discussing, inferring, predicting, and interpreting data about environmental issues.

Definitions:

“Environmental education is a learning process that increases people’s knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action”. (Tbilisi Declaration, 1978).

According to UNESCO, “Environmental education is a way of implementing the goals of environmental protection. It is not a separate branch of science but lifelong interdisciplinary field of study.” It means education towards protection and enhancement of the environment and education as an instrument of development for improving the quality of life of human communities.

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. It is a multi-disciplinary field integrating disciplines such as biology, chemistry, physics, ecology, earth science, atmospheric science, mathematics, and geography. The term often implies education within the school system, from primary to post-secondary. However, it sometimes includes all efforts to educate the public and other audiences, including print materials, websites, media campaigns, etc. 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. In short, environmental education is provided so that people can have a better understanding of the world around them and know how to take care of it properly so that the world can be a better place.

The United Nations Educational, Scientific and Cultural Organisation (UNESCO) states that EE is vital in imparting an inherent respect for nature amongst society and in enhancing public environmental awareness. UNESCO emphasises the role of EE in safeguarding future global developments of societal quality of life (QOL), through the protection of the environment, eradication of poverty, minimization of inequalities and insurance of sustainable development (UNESCO, 2014a). Environmental education is a two-way system in the sense that the educator is making available to the people his findings at the same time the effectiveness of the message is monitored by the educator and made known to relevant authorities. The responsibility of extension person or educator is enormous because he has to be an expert in nearly all the fields since he is supposed to explain and answer questions on various aspects of the environment. The

content and substance of environmental education is also undergoing review and change. Environmental education has developed within the conceptual framework that emerged from the first international conference in Tbilisi (1977) and is now seen as education for sustainability. This allowed environmental education to address the broad range of issues and concerns included in *Agenda 21* and others which evolved through the meetings of the Commission on Sustainable Development (UNESCO 1997).

EE is a complex process, covering not just events, but a strong underlying approach to society building as a whole. EE provides people with the awareness needed to build partnerships, understand NGO activities, develop participatory approaches to urban planning, and ensure future markets for eco-business.

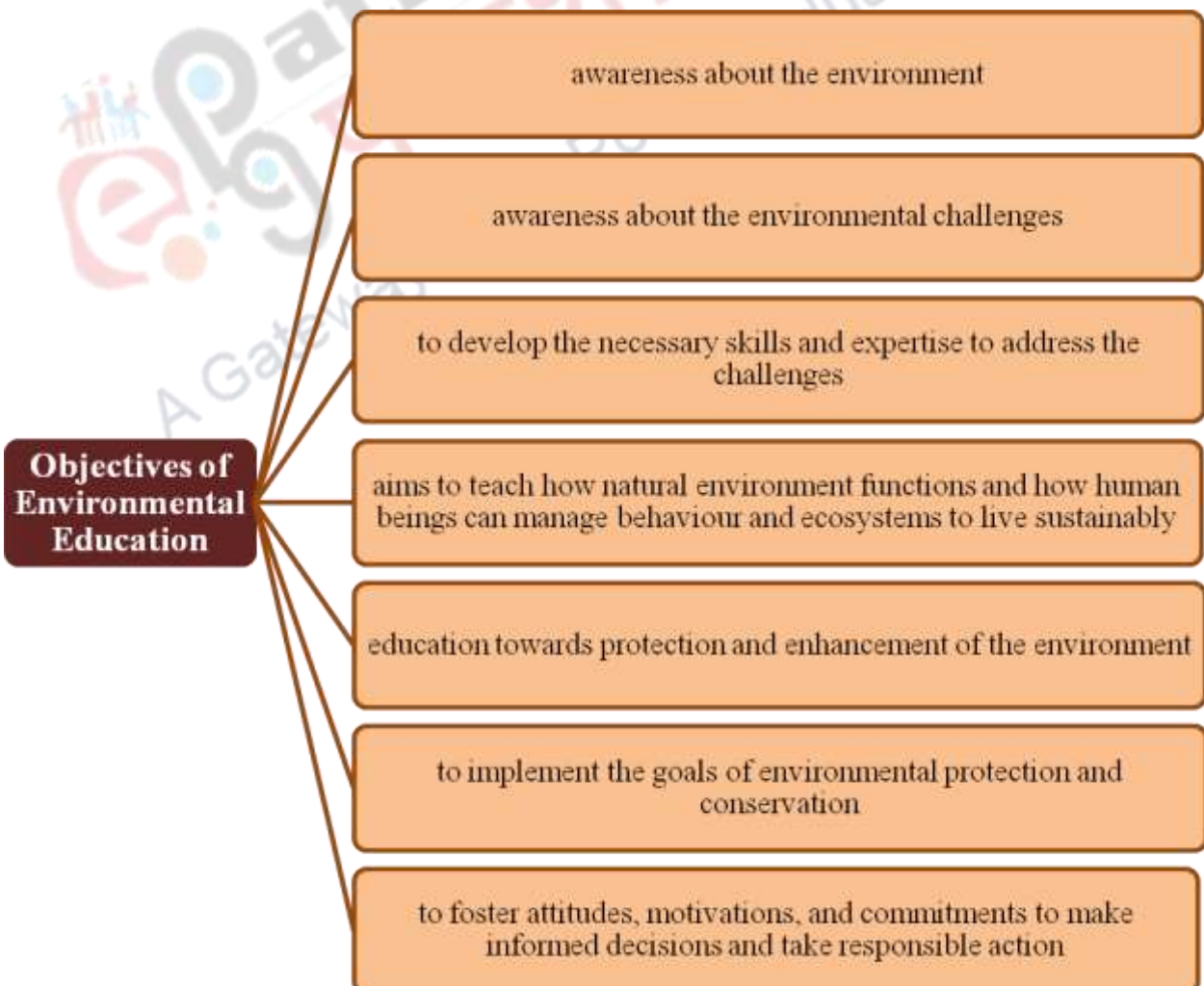
1.2 Objectives of Environmental Education

The objectives of environmental education are broad in sense of nature. The systematic knowledge about the care should be taken in the explanation and utilization of natural resources for the development and progress of mankind is given through environmental education. The primary aim of environmental education is to impart knowledge about the principles required for the conservation and utilization of natural resources for the existence of mankind. Environmental education gives required knowledge and experience realizing the value of such important views. The role of environmental education is important in the realization of the necessity of maintaining a friendly and well balanced relationship between man and nature.

The general objectives of environmental education include the following:

1. To develop the sense of awareness among the students about environment and its various problems.
2. To help the students in realizing the inter-relationship between man and environment.
3. To inform the students about the social norms that provides unity with environmental characteristics.
4. To create positive attitude about environment among the student.
5. To develop proper skill required for the fulfillment of the aims of environmental education and educational evaluations.
6. To help the students in realizing the importance of taking proper steps to solve environmental problems.
7. To develop required curiosity among the students for the realization of environmental problems so that they would be inspired to work for the solution of such problems.

8. To create appropriate situations for the students to participate in the process of decision making about environment.
9. To develop the capability of using skills to fulfill the required aims, to realise and solve environmental problems through social, political, cultural and educational processes.
10. To enlighten the people on the physical components of the environment.
11. To inform them about their dependence on the environmental resources.
12. To enlighten them about the changes in the environment in the last decade and the consequences of their present actions.
13. To alert them about the consequences of human actions on the environment both on man himself and other forms of life.
14. To create concern for environmental quality and conservation and to foster understanding of man's relationship and interactions with the ecosphere.
15. To develop personal, community and national sanitation and conservation ethics.
16. To awaken appreciation of the aesthetic quality of nature in order to encourage its uses for recreation.



1.3 Scope of Environmental Education

The scope of environmental education and awareness or environmental extension services covers all fields of environmental science. This include the effects of man on environment - how he has exploited and devastated it, polluted it, but more importantly how man can save itself from the problems which he has caused through the abuse, misuse and over-use of the resources provided by the nature. Environmental Education should not only focus on the effects of environmental degradation but very importantly the understanding of the fundamental causes. These should also include the examination of social and economic factors that aggravate environmental degradation.

Scope of environmental education can be described as:

- ➡ Education from the environment
- ➡ Education about the environment and
- ➡ Education for the environment.

Education from the environment involves the experiences gained from our surroundings. This includes the aesthetic value of the environment and the need to keep them as such. Education about environment involves the study of our environment to learn about its composition and working mechanism and its usefulness. This is an important component of environmental education since we have to learn about the environment before we can make it. Education for the environmental enables us to learn how to preserve the environment to enable us derives maximum benefit for the present generation as well as for future. This is the conservation aspect of environmental education.

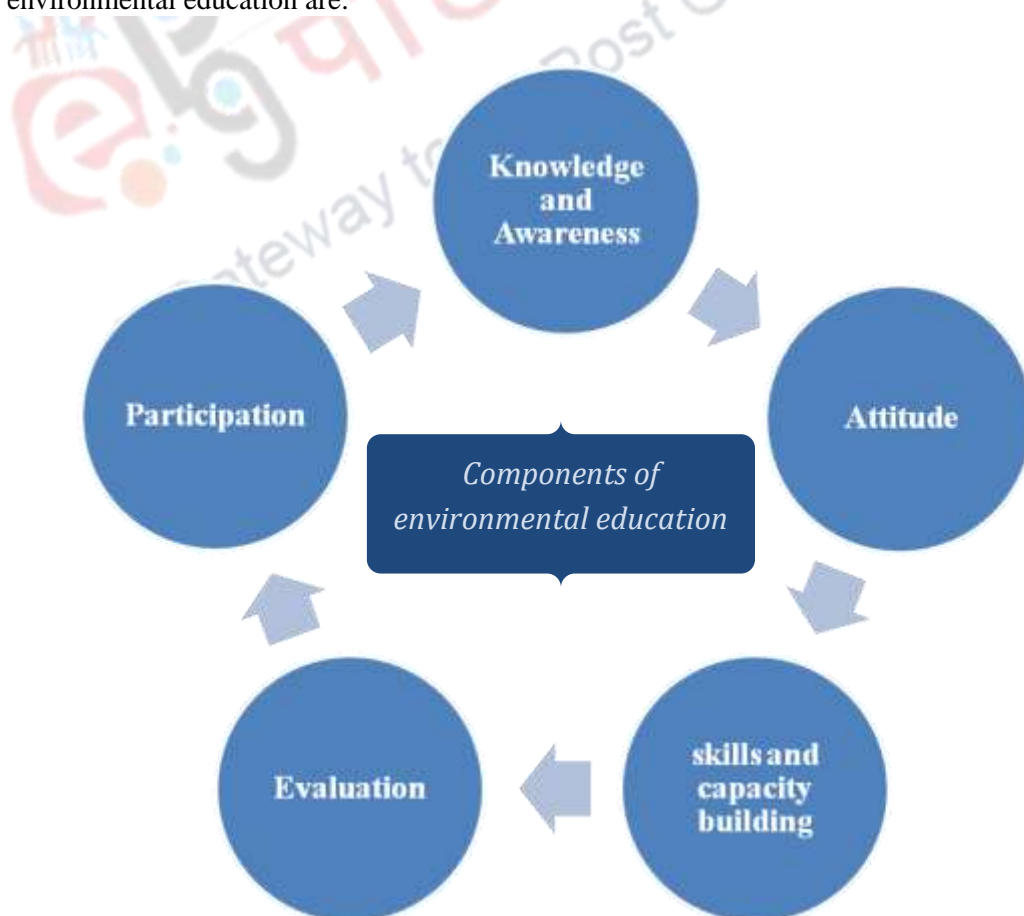
1.4 Guiding Principles of Environmental Education

- i. Consider the environment in its totality, natural and built technological and social structures
- ii. Environmental education to be a continuous life saving process.
- iii. Environmental education to be interdisciplinary in its approach.
- iv. Examine major environmental issues from local, national and international point of view.
- v. Environmental education to focus on current and potential environmental situations.
- vi. Promote the values and necessity of local, national and international cooperation in the prevention and solution to environmental problems.
- vii. Explicitly consider environmental aspects of plan for development and growth.
- viii. Enhance the position of learners in making decision concerning their environment and accept responsibility.

- ix. Enable learners to discover symptoms and real and potential causes of environmental problems.
- x. Enhance the learner's ability to develop critical thinking and problem solving skills.
- xi. Utilize different learning environment and approaches to learning/teaching about and form of the environment with emphasis on first hand information

1. 5 Components of Environmental Education

The aim of environmental education is clearly to show the economic, social, political and ecological interdependence of the modern world, in which decisions and actions by different countries can have international repercussions. Environmental education should, in this regard, help to develop a sense of responsibility and solidarity among countries and regions as the foundation for a new international order which will guarantee the conservation and improvement of the environment. The main aim of environmental education at the grass root level is to succeed in making individuals and communities understand the complex nature of the natural and the built environments. Further, to acquire the knowledge, values, attitudes, and practical skills to participate in a responsible and effective way in anticipating and solving social problems, and in the management of the quality of the environment. Therefore, necessary components for environmental education are:



1.6 Levels of environmental education

Reorienting education as a whole towards sustainability involves the various levels of formal, non-formal and informal education at all levels of society.

A. Formal Environmental Education

Environmental education is increasingly a prominent part of primary, secondary and tertiary education in the world. The formal education sector plays a vital role in environmental education and awareness by exposing the younger generation to the information, issues, analyses and interpretations on environment and development. There has also been a major shift from schools to adult and community environmental education. (Fien 1999b).

Rather than establishing a new subject, most countries have opted to infuse environmental education objectives and strategies into the existing curricula, while some other countries practice both options. In addition, the focus on practical learning in the real world in environmental education helps schools to address important general educational objectives related to values and to skills development (UNESCO-PROAP 1996).

(i) Primary and Secondary Levels

At primary level, the attempt is made to sensitize the child about environs. Emphasis should be mostly on building up awareness (75%), followed by real life situation (20%) and conservation (5%). Teaching strategy includes audio-visual and field visits. At the secondary level objectives must be real life experience, awareness and problem identification. The contents are supplemented with general science. Teaching, practicals and field visits are to be done. The emphasis must be on conservation, assimilation of knowledge, problem identification and action skills. Contents may be science-based and action oriented work. The diversity of approaches in primary and secondary education seen across the globe is based on each country's major and threatened resources, and issues of concern. For example, in the Maldives, environmental education and awareness programmes highlight issues of the marine environment emerging from the National Environment Action Plan of 1989 (IUCN 1998).

Objectives of environmental education at Primary and Secondary Levels include,

- To emphasize the relevance of science to daily life.
- To develop a scientific attitude in student.
- To create an environment conducive to greater reliance on the use of principles and practices of science.
- To acquaint the student's with various natural phenomena.
- To develop an outlook which emphasizes the method employed in different disciplines of science.

- To know and understand true aspects of the environment in general.
- To know and understand the interaction between mammals, between human and their environment and interaction between the various elements and components of the environment.
- Build understanding, awareness and sensitivity towards causes and efforts of the class that continuously take place in society the world around us.
- To build and develop skills in thinking, reasoning, enquiring, evaluating and making decisions concerning human and the world around them.
- Inculcate two attitude in using the knowledge and skills towards solving problem and issues relating to individuals, society and the environment.
- To build the values and attitudes towards the need and necessity to live together in harmony in the context of the heterogeneous society.

Focus of environmental education emphasized at primary and secondary levels.

- Population - growth, arises and problems of unplanned population.
- Law - Land use, land reclamation and land and soil conservation.
- Resources - resource uses, conservation, recycling.
- Food and Nutrition - Food production, food adulteration and preservation, balance diet etc.
- Conservation - Causes of wildlife, plant, soil, water and conservation of other non-renewable natural beauty
- Pollution - Pollution of water, air and soil, noise pollution, pollution by insecticide and other chemicals and waste disposal
- Health and Hygiene - Individual, family county and social health and hygiene, health hazards etc
- Humans and Nature - Other compounds of atmosphere, environmental quality and future on earth.

(ii) Tertiary Level

Tertiary level education has responded to the increasing demand for environmental managers and experts in the 1990s. At college level, maximum emphasis should be on knowledge regarding sustainable development and conservation. The content must be college based on Science and Technology. Teaching practical's and action-oriented field work is to be done. At post graduate level, four major areas are recognised environmental engineering, conservation and management,

environmental health, social ecology. Key trends have been observed across the region in relation to environmental education at tertiary level these include:

- Basic environmental concepts and elements added to existing courses at undergraduate and postgraduate levels, for all students irrespective of their courses;
- New environmental units or modules introduced into a large number of courses can increase the depth and detail of environmental study;
- New non-degree programmes and courses (at foundation, certificate or diploma levels) introduced by tertiary education institutions to cater to the demand for in-service training and upgrading of knowledge and understanding on environmental issues and practices;
- Greater emphasis on training the trainers, and in strengthening the tertiary education system and research capabilities;
- More research on environmental education policies and practices;
- A greater dialogue and information exchange between the users of environmental skills and talent, in government, private and NGO sectors etc., and the institutions of tertiary education, ensuring, education and training address prevailing practical needs; and
- Increasing emphasis placed on adult and community education, using both formal and non-formal methods to raise the overall environmental literacy levels.

B. Non-formal Education

Non-formal environmental educational activities exist alongside the formal educational systems, at curricular and extra curricular levels, in occupational training, and through wide public awareness activities through non-formal channels such as mass media, and voluntary organizations. Different communities, institutions and individuals choose methods and practices that best suit their local needs and capacities. Following are the main constituents of this education.

- Adult Education: Adults may influence the society to protect the precious environs by generating posters, slides, audio-visual and information pictures.
- Tribals and Forest Dwellers: They are an important media to protect the forest wealth.
- Children Activities: The National Museum of Natural History (NMNH) conducts spot painting, modeling and poster design about environment for children.
- Eco-development Camps: Currently a set of a guide lines has been prepared by Department of Environment to create awareness in youth and to acquaint them with the practice of sustainable development.

- **Non-government Organisations:** There are more than 200 NGOs engaged in environmental protection.
- **Training Executives:** Regular courses should be arranged for environ activities among administrators.
- **Research and Development Programmes:** Such Research and Development efforts are supported by Department of Environment in Biosphere and Man.
- **Foundation Courses:** The courses for the probationers selected for the IAS, IFS, IPS and cadets of three wings of Armed Forces need to be supplemented with foundation courses on environment relevant to their area of specialisation.
- **Development of Educational Material and Teaching Aids:** Materials for media (T.V, radio, films, newspapers etc.), audio, mobile exhibitions, audio-visual materials must be operated by competent manpower.
- **World Environmental Day:** All Govts. in the states, UTs, universities, schools, colleges, academic institutions and voluntary organisations organise suitable activities on World Environmental Day, i.e., 5th June of each year. DOE supports the function financially.

1.7 Target Population for Environmental Education

The three categories of audience that have been identified for environmental education and awareness are as following:

- (a) General Public:** For the general public, environmental education should be provided at every age class and at all levels of formal education for pupils and teachers and informal education for young people and adult including the handicaps. There is need for environmental education programme which introduces awareness among the general public for its own environment and danger to which it may be exposed. Participants in the general public education should include the general public especially non-governmental organizations.
- (b) Specific Occupational or Social Groups:** These are those whose activities and influence have an important bearing on the environment. These include engineers, architects, administrators and planners, industrialists, trade unionists, policy makers and agriculturists.
- (c) Certain Professional and Scientists:** These group includes those working on specific problems of the environment e.g. biologists, ecologists, hydrologists, taxonomists, sanitary engineers etc.

1.8 Need and Significance of Environmental Education

The rationale for environmental education can be described as the following:

1. Knowledge about the changes that have altered the environment — land, water, weather, vegetation, social, cultural and political environment are essential components of environmental education. Consequently, the general populace should be equipped with all these to be able to solve the problems of the environment.
2. Land, water, forest and other mineral resources utilization is the dominant feature of rural economy with agriculture the driving force. Uncontrolled and improper exploitation of these resources have implications on the environment causing disruption in the living standard, starvation, displacement and human suffering. Environmental education is therefore necessary to create awareness of the causes and effects of these problems viz: food and water scarcity, pollution, outbreak of epidemics and natural disaster such as flood, erosion and desert encroachment and of course how to prevent them.
3. Environmental education is needed to foster international co-operation and understanding.
4. Public enlightenment on the impact of government policies on local environment should be useful both to the government and the local people.
5. Awareness of such global environmental issues is an essential component of environmental education which ordinary citizen should be aware of.
6. Environmental education for the over-all social and economic emancipation of women and children. These form a substantial percentage in the utilization of natural resources especially at the rural setting.
7. Environmental education is very essential for the lack of it. Environmental education is virtually a new thing in this part of the world.
8. Environment education is also very essential for our survival on earth. The natural resources and cultural heritage need to be protected not only for this generation but for future generation.
9. To foster clear awareness and concern about economic, social, political and ecological interdependence in urban and rural areas.
10. To create new patterns of behaviors of individuals, groups and society as a whole towards the environment.
11. To provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment.

1.9 Constraints to Implementing Environmental Education

1. Rigid Specialization.
2. Complexity of inter-disciplinary value of Environmental education.
3. High pupil - teacher ratio for organising pupil participation programs.
4. Paucity of qualified trained environmental educator.
5. Lack of proper resources in terms of equipment, supplementary materials and reference materials.
6. Tendency to resist changes

1.10 Conclusion

Environmental education is a dynamic process. The priority of such education is to develop cautious mind of people about their total surrounding. Its main task is to impart proper knowledge and training to solve various problems of our environment systematically. In order to enable people to enjoy good health and a high quality of life, it is vital to prevent harmful effects to human health or damage to the environment caused by pollution of air, water and soil, noise, vibration, noxious smells etc. Environmental Education is a methodology in which people pick up familiarity with their surroundings and secure learning, abilities, values, experiences, and passion, all of which will empower them to act separately and aggregately and to take care of present and future environmental issues. It is the study of relationship and interactions between natural and human systems. Environmental education should constitute a comprehensive lifelong education, one responsive to changes in a rapidly changing world. It should prepare the individual for life through an understanding of the major problems of the contemporary world, and the provision of skills and attributes needed to play a productive role towards improving life and protecting the environment with due regard given to ethical values.