CHAPTER-I
INTRODUCTION

"Environment does not belong to man, 
Man belongs to the environment".

Ursula K.Hicks

"If we care nature, it can be rich, bountiful, 
inexhaustible and sustainable"

Dalai Lama

"There is enough in the nature for man’s need 
but not enough for man’s greed"

M.K.Gandhi

"I am plus my surroundings, & If I do not 
preserve the later, I do not preserve myself"

Jose Ortega Gasset
Man has always been an inseparable part of the environment since his very existence on earth. However lavish consumption of precious environment resources by man, either for greed of the developed countries or for need by the poorer people of developing countries, caused a large-scale quality deterioration of the environment.

The increasing population and industrialization has added fuel to the fire by creating tremendous pressure on the natural resources. This has resulted in environmental crisis due to the erosion of many environmental problems like pollution, climatic changes, Ozone layer depletion, global warming, acid rain, loss of Biological Diversity, deforestation, waste disposal and other environmental hazards.

The extent of degradation has become so enormous that it now threatens the very existence of life on earth. The protection & preservation of the environment has now become a globally challenging issue.

Global concern for environment & eco- friendly development programs led to the need of Environmental Education. Thus Environmental Education covering the knowledge of Environmental problems has become a global issue. It is well established that most environmental degradation are of, anthropogenic nature.

The pre- requisite and integral part of the development process is to prevent the degrading environment from further deterioration at local, national and global levels. Pertinent steps need to be taken to prepare environmentally conscious citizens. This is possible through education.

Education brings awareness and is essential for action. In this direction Environmental Education provides an understanding of the multidimensional problems of depleting resources & ever- increasing populations.

Environmental Education is a way of creating knowledge, understanding, values, attitudes, skills abilities and awareness towards the environment & its protection. The school system provides the largest organized base for Environmental Education and action. With children in their plastic
age, school offers an effective instrument for inculcating in them the desirable Environmental ethics.

Teacher is the mediator of disseminating the knowledge & awareness about the environment and is one of the important factors, which is bound to affect this program. The teacher can provide a vital link in the delivery of Environmental knowledge, its associated problems and their solutions.

Thus awareness about the Environmental problems and remediation skills led to the international concern and efforts for Environmental Education.

The first UN conference on Environment was held in 1972 in Stockholm, Sweden. The conference was attended by 113 nations, UN agencies & Non Governmental organizations. The Stockholm conference generated activity in the field of Environmental Education. As a result, the UNEP & International Program in EE (IPEE) by UNESCO was launched in 1975.

The first International Conference on Environmental Education was held at Tbilisi, USSR in 1977. The Conference unanimously recommended intensification and expansion of Environmental Education. The urgent need of Environmental Education as a component of quality education was also recommended. Further, the conference also charted an action plan at the national & international levels for the promotion & development of Environmental Education.

The second International Conference on Environmental Education was held in 1985 at New Delhi and it resolved that Environmental Education is a must since individuals and communities are harmed by ecological disruption.

The third International Conference on Environmental Education held at New Delhi in 1989 recommended that Environmental Education should be adopted in Formal & Non Formal Education system of all countries. The UGC and the NCERT endorsed the programme and implementation of the same in Indian schools, and higher education systems.

In June, 1992, the United Nations convened its conference on environment and development in Rio de Janeiro, Brazil, the so-called ‘Earth Summit’. Around 10,000 delegates from 150 or more countries met in
association with the official gathering of 116 national political, leader while around 15,000 individual citizens, representatives of NGOs and activists participated in a parallel Global forum.

The centre piece of Rio agreements was Agenda 21, a major action programme setting out, what nations should do to achieve Sustainable Development in the 21st century. The 40 chapters of Agenda 21 cover topics ranging from poverty, toxic waste and desertification to youth, education and free trade. A second crucial document produced and signed at the Summit is the Rio Declaration, this being statement of 27 principles for sustainability which provide the basis for the programmes of International co-operation in Agenda 21. In other words, The Rio Declaration sets out a blue-print for sustainable future, while Agenda 21 provides a guiding programme for its interpretation.

The United Nations Conference on Environment and Development (UNCED) produced five major documents. These included tow international agreements, two statements of principles and a major action agenda on worldwide Sustainable Development. These five documents are:-

1) The majority of school managers saw Environmental Education as either a ‘quite’ or ‘very’ important part of school curriculum. A small minority saw it as essential.

2) Only 7% of schools had produced a specific Environmental Education policy. Forty-two percent had no Environmental Education of any sort.

3) Less than 25% of schools had coordinated, cross-curricular approach across many subjects. Geography and Science curricula were used as the main vehicles for Environmental Education. Seventy-five percent of schools also used their personal and social education curriculum.

4) The main constraints were identified as lack of timetable time, lack of resources, lack of staff expertise, and lack of staff motivation. Other needs were teacher training and increased resources to deliver Environmental Education.
The National Curriculum Framework for School Education (NCFSE) -2000 also highlighted the need for including environmental concerns at all levels of schooling. At the primary level, Environmental Education (EE) has been integrated suitably in Social Sciences, and Languages and Science and technology. At the Secondary level, besides integrating topics related to environment in various subjects appropriately, conservation education and disaster management education have been included as potential subject choices along with the traditional subjects.

Despite these initiatives, it has been felt that although a fair amount of information about environment is being given in textbooks, it has not succeeded to generate a concern that may lead to effective action for conserving and further improving the environment. Therefore the further course of study in Environmental Education should emphasize the emotional and attitudinal aspects of the learner’s personality along with the requisite cognitive component most of which is available in the different subject textbooks.

According to Annual Report of the Ministry of Environment and Forests for 2003-04, the Joint Forest Management (JFM) programme has been adopted in 27 states, covering an area of 17.3 million hectares and involving eight million families. It has brought about a welcome change in the relationships between local communities and forest officials, besides improving the condition of forests, reducing encroachments and increasing the income of local people, the target is to cover all the 1,70,000 villages on the fringes of forests during the Tenth Five year plan 2002-2007 (Padmanabhan, 2005).

"All education springs from images of the future and all education creates images of the future. Significant part of education must be seen as the process, by which we enlarge and improve the individual’s image of the future." (Alvin Toffler). It is universally acknowledged that education is an effective means for social-reconstruction. It has to be relevant to the needs and aspirations of the people living in a fast changing society. Education is a potential tool for
creating Environmental Awareness in people enabling them to act to safeguarding the environment.

To be specific the basic purpose of Environmental Education is to provide the individual and social groups sufficient scope so that they can acquire awareness and knowledge, develop attitudes, skills and abilities, and participate in solving real-life environmental problems. The perspective should be integrated following an interdisciplinary-approach, and should be holistic in nature. Purpose of Environmental Education is therefore not to introduce a new subject as such, but to evolve a new approach to education to integrate the concept of preserving environment with the existing content of a subject discipline.

Therefore, it may be assumed that Environmental Education is an approach, which is expected to provide the necessary methodology to integrate the consciousness about environment (both in applied and basic/theoretical aspects) with education, engineering, Socio-economics, ethics, law and other applied disciplines, so that the knowledge will be holistic.

The Intergovernmental Panel on Climate Change (IPCC) on 2nd Feb, 2007 in its report said that, “The warming of the climate system is unequivocal, as is now evident from increases in global average air and ocean temperatures, widespread melting of snow and ice, rising global mean sea level. The report also notes that numerous long - term changes in climate have been observed at Continental, regional and ocean basin scales.

These include changes in Arctic temperatures and ice, widespread changes in precipitation amounts and wind patterns, shifting of monsoons more towards the western side of India, delay in on-set of monsoon, extreme weather conditions such as droughts, heavy precipitation, heat waves & greater intensity of tropical cyclones, faster melting of glaciers or glacial ice sheets. The IPCC report forecasts that by the end of 21st century, the probable Global temperature will rise in the range of 1.8 to 4 Centigrade, if we do not curtail CO2 emissions, atmospheric pollution and Ozone depletion.
Thus according to IPCC, climate change has emerged not only as an important environmental issue, but also as a significant political issue at national & global levels.

The spectrum of Environmental Education falls in four major but integrated components, which are--- Awareness, Real Life situations, Conservation & Sustainable development. This has to be matched with the need of the primary, lower secondary, higher secondary, tertiary & adult education. Awareness includes making the individual conscious about, physical, social and aesthetic aspects of the Environment.

The latter is linked with the life support system, which in itself has five elements-air, water, land, flora & fauna. It is an indisputable fact that these five elements have a dynamic & living relationship.

Thus the major objectives of Environmental Education awareness are categorized as follows: -

1) **Awareness**: - To help social groups & individuals acquire an awareness of and sensitivity to the total Environment & its allied problems.

2) **Knowledge**: - To help social groups & individuals gain a variety of experience in, and acquire a basic understanding of, the environment & its associated problems.

3) **Attitudes**: - To help social groups & individuals acquire a set of values & feelings of concern for the environment and the motivation for actively participating in environmental improvement & protection.

4) **Skills**: - To help social groups & individuals acquire the skills for identifying & solving environmental problems.

5) **Participation**: - To provide social groups & individuals with an opportunity to be actively involved at all levels in working towards the resolution of environmental problem.

Thus the objectives of Environmental Education are very essential for the successful formulation, in implementation & evaluation of Environmental Education program. Therefore Environmental awareness and Environmental
Education should be spread and addressed at the grass-root level and this can be only achieved when the school teachers have necessary & up-to-date information about the environment & its related issues.

The Government as well as the school teachers should spread the Environmental Education awareness by attacking the problem of Environmental degradation through a multidimensional approach including all economical, social, cultural, aesthetic as well as the political factor, because merely shutting up of big polluting industries, cleaning up of neighborhood, or the protection of a few endangered species of plants & animals would not suffice. An important document called a “Citizens report”, prepared by a team of young & knowledgeable persons on the basis of “on the spot studies”, “personal interviews”, & “official records” attempts to evaluate every aspect of the country’s environment.

Eco Balance:

Prime Minister, Late Shri Rajiv Gandhi while launching the World Wide Fund for nature in the capital on 2nd November, 1989 dealt with the crux of the problem when he asked environmentalists to clear the confusion in their minds about the kind of development they would like to support without giving up their ecological commitment. The confusion has of late been worse confounded by the sharp division between the development and environment protection lobbies, with their taking up extreme positions.

Environmentalists for instance, view every development effort with suspicion and actively campaign against industrial expansion, whether it be nuclear power plants or dam construction, if it involves clearing of forests or disruption of villages, while the development lobby warns the people that ecological protection lobby is bent on putting the clock back by trying to throw a spanner in the works of progress. The Prime Minister was not wide of the mark when he admitted “invariably we are groping in the dark when we try to protect nature”. Neither the Environmentalists nor the persons wanting rapid
progress have been able to draw the line, which says to both the lobbies thus far and no further.

The ecological balance, which both the groups swear by, is easy to define but difficult to obtain in practice. Even Environmentalists who are for the conservation of wild fauna now find that it can only be done with the conservation of wild fauna as their fates are interlinked.

Even the World Wide Fund has had to change its name to the World Wide Fund for nature. The people's consciousness about environment and ecology is reflected even among large industrial houses and many of them have made it a point to provide funds for reforestation programmes, whenever setting up of new plants require destruction of forests. This was unheard of in the earlier days, when forests were considered the bane of industrial progress, and their destruction was encouraged by the government in the name of progress.

The concept of education should be drastically changed to create an awareness regarding environmental protection. This is the only way to lay the foundation for a new world for the coming generations.

According to Mr. B.N.Kirpal, first executive president of UNESCO, it is till unawareness about the various aspects of environmental protection among the people that is the cause of concern. He said that the environmental protection could be done by teaching the subject at the school level. Teaching would mean laying the foundation of a new world. It is necessary to create awareness among the people. If they realize that they are not going to survive, they will protect the environment.

Mr. M.P.Derkatch, UNESCO representative in India and a noted environmentalist said that education should be the primary goal for any environment-oriented programme. Any such plan would not be able to succeed without educating the people, as nearly 50% of the population in the developing countries is still illiterate.

The environment movement has been late in coming to our country. Most of the people in our country are unfamiliar with its language, vague about
its goal, ignorant of the full sweat of its implications and the radical changes in outlook and attitudes in demands. Even the highly educated can hardly give an answer to such questions as to what is Environmental crisis or even what is environment.

Neither our formal or informal education prepares us for the task that awaits us in answering the call to action. The new power of science or rather because of it, man is losing control over his environment. Though Environmental problems differ from country to country and even from place to place in the same country, yet there is a certain similarity to the common problems.

Man shapes his environment and his environment shapes him, his character, his manner of living and his future. It also serves as a large mirror, too large to be concealed, reflecting all that is good, bad and indifferent in the character of a people and revealing not only what it is, but strives to be. We can look at our environment to discover what kind of people we are because it is a mirror that cannot lie.

Though Environmental education as a distinct entity arrived on a world scene after the 70’s, India came on the scene at a later date. It is only in the recent past that the school curriculum designers made effort to assimilate more and more environmental concepts and components globally.

**Need of Environmental Awareness:**

When we talk of Environmental Education, developing environmental awareness comes as the first objective of it. Environmental Education is the process of creating awareness and understanding of the biophysical environment, it is necessary for man’s cultural, spiritual and material welfare and the need for its conservation and rational development.

The need for Environmental Education was adequately expressed in a resolution adopted by the United Nations General assembly, 3rd December 1968. Environmental Education is necessary because of the continuing and accelerating impairment of the quality of the human environment caused by air
and water pollution, erosion and other forms of soil deterioration, waste, noise and secondary effects of biocides, accentuated by rapidly increasing population and accelerating urbanization. Because of the consequent effects on the condition of man, his physical, mental and social well being, his dignity, and his enjoyment of basic human rights. Because increased attention to problems of the human environment is essential for sound economic and social development. Because intensified action is needed to build, and wherever possible, to eliminate the impairment of the human environment. Because a framework for comprehensive consideration of the problems of the human environment is needed to focus the attention of governments and public opinion on the importance and urgency of this question. Because the risks inherent in the uncontrolled application of modern technology are very real and very frightening; because there is an environment crisis.

Though these days a section of intelligentsia is becoming conscious, about depleting resources, deteriorating standards of life due to ever increasing serious problems of pollution, poverty and illiteracy, however, still a large section of our society has a very low awareness and sense of civic responsibility and growing tendency of indifference and negligence, which is in one way or other prevents them from thinking positively well in advance.

Education being a powerful instrument, can perform the task of awareness development among people about all such burning issues like environment, population and poverty problems in India as mentioned above which are among some of the three dominating issues. The environment problem is the most significant one and seems to be a great challenge before the humanity. It is essential for the young school going as well as adult people, calling for their more active involvement towards the development of live able and comfortable better future through development of better appreciation and understanding of the consequences of unplanned human activities upon the total bio-physical-psychological environment.

The need of creating mass awareness about and environmental problems is felt by all including those concerned with education too. The syllabi at
different stages of education contain only few references to the environment. The present syllabi at different levels of education is not comprehensive enough to educate children to become environmentally oriented individuals by incorporating exclusive latest ideas in the syllabi revised so as to give a slant towards Environmental Education. At research level also there is a need to carry out studies on environmental issues. Though some projects have been launched worldwide still a wide range of research area is needed to be investigated.

Environmental crisis is the greatest crisis of the day. Educational intervention through Environmental Education programmes in formal, non-formal and informal settings can be one important remedy. But the initiative regarding implementation of Environmental Education programme has to be taken by educational institutions. Universities must take a lead in this area by framing suitable programmes for Environmental Education, personal training, and material preparation for EE and execution of the whole program in a proper way.

At the school level, the syllabi should have two main aspects. Firstly Environmental Education must involve subjects concerned with the Biophysical environment with an emphasis on interrelationships between living organisms and their environment and the need for rational use of environment. Secondly Environmental Education should involve the use of the biophysical environment in the learning process. Some syllabi are based almost entirely on outdoor studies, projects on a school forest plot or garden.

Environmental Education has a challenging future in India for both in-school and out-of-school populations. Under the 10+2 pattern of education, most of the states and Union territories are implementing a primary curriculum with environmental studies as one of the subjects. The integrated science course is going to become more and more popular with the States, and will promote the objectives of Environmental Education.

At the secondary stage also there is a growing trend in relating the course to environmental problems and needs at appropriate places. For non-
formal education, the entire strategy of curriculum development is based on the needs of the learner in the immediate environment. As the non-formal program is progressively implemented, so would be the ideas of Environmental Education being disseminated among the population.

**Role of Mass Media, Community, Home, School, Social Institutions in Promoting Environmental Education Awareness:**

India having a large population and limited resources has a great proportion of illiterate persons. It is all the more difficult to impart education to such populations towards the problems of environment. It is also essential that a general awareness is generated amongst masses so that the environment is treated well and not allowed to get further deterioration. This is the problem of the masses.

Environmental Education is an important and vital activity for harnessing a prosperous and flourishing society. Various mass media has been applied to achieve this objective. It must however, be realized in such a way that they act as social carriers of technological innovations and ideas.

In order to arouse awareness towards our environment, various mass media could bring out a sustained and systematic program of Environmental Education. To achieve this mass media of instructions like radio, newspapers, periodicals, television, cinema and posters be utilized.

Various means of mass media communication aim at instructing, educating and entertaining people, in various ways on different aspects. Radio comes first among the media, reaching to people of all socio-economic strata with 110 stations spread all over the country.

All India Radio (A.I.R) covers 98% of the population, where as the televisions with 25a transmitters occupying 65% of the geographic area and serves about 73.5% of the population. The other influential medium is films, claiming a weekly attendance of about 50 million. The press with its several thousand newspapers published in English and Indian language suffers from the setback because of its limited circulation.
The mass media is a highly potential instrument for educating the public and thereby change the people's mindset. The mass media performs three important functions:

1) Information
2) Education and
3) Persuasion

Mass media has the power to transform the lives of people by empowering them in many diverse ways. Information and knowledge form a variety of source work towards this end. This further entails 'media education' at a large scale which needs to address aspects like, how to understand the medium, appreciate it, its strengths and weakness, who controls it, what is the philosophy, policy of the medium, how to shift good from bad, how to participate in the media etc.

In such a scenario it plays the role of a 'great saviour' as it provides a platform for mass education, entertainment and thereby persuasion. Mass media can also be termed as an ‘informal University’ for any society for its role in channelizing messages of importance to the masses. Media, the fourth pillar of democracy and an ever-active whip of the society, makes the people aware about the impending danger or threats facing the environment and the society.

The ongoing mass media revolution in the country today offers a choice of about 60,000 newspapers and Journals of all types. The total newspaper circulation figure stood at 127 million in the year 2000 which rose to 14 crore copies by 2002, second in the world, with China in the lead. The annual growth rate is an impressive 24%. One important aspect of this development is the unprecedented high growth of the vernacular newspapers. Hindi covering about 43% of the total circulation figures leads this phenomenon. This is followed by newspapers and magazines in several modern Indian Languages, which also enjoy very large circulation figures of more than a million each.

On the other hand today we have around 13.2 crore Radio sets in the country and the national average Radio ownership is 40%. Besides, by an estimate based on census data, on any given day about 32 crore people listen to
at least one Radio program. Besides, the AIR network has an exhaustive coverage of the 100% population of the country.

The principle objective of the utilization of these mass media for the environmental education should be to present systematically problems and their solutions. The emphasis must also be laid upon the role of individuals to protect the environment.

A panel discussion on the media and its impact organized by the ladies study group of the Indian Chamber of Commerce (Industrial News Digest, 1981) revealed that about 46% of the adult population and 90% of the total population listen to the radio. Radio has an immense potential to play the role of being a catalyst in effectively creating environmental awareness among the people.

Weekly broadcasts can be arranged from A.I.R. figuring various aspects of environmental problems in the forms of features, interviews from the experts, panel reports etc. A very significant development in the Indian Radio has been the shift towards utilizing the huge scope of Community Radio (C.R). The Community Radio concept is about “doing something for its own benefit by the community”, owing as well as controlling its own means of mass communication is a prime factor in this process.

The aims and objectives of the Community Radio channels include preservation of their culture and languages, make such communication available to the members of the community and the people desired to be affected by it, launch publicity or awareness creating campaign for the benefit of the community and the public at large.

The Union Ministry of Information and Broadcasting (MIB) encourages frontline institutions of higher education in different fields for starting such channels and takes up the cause of advancement of the local community. They are also expected to identify and analyze the local issues, problems and search for possible solutions. So environmental awareness can be one of the prime agendas for them.
As educational institutions are being encouraged by the MIB for setting up such stations this would serve the purpose of designing tailor-made messages and programs relating to environmental protection for the community. The MIB visualizes issuing license to about 1,000 such institutions. The Public Service Broadcasting (PSB) AIR regularly broadcasts programs on Environmental awareness, forest development, forestry, and Wildlife and ecology etc. These are broadcast in different major languages, local dialects spoken by big and small communities across the length and breadth of the country. The coverage should be such that it covers wide range of local environmental problems, their solutions and the role of the people in avoiding the deterioration of the environment. Some of the important aspects of environmental problems on which programs can be organized are as following:

1) Environmental problems and perspectives.
2) The population explosion.
3) Energy crisis.
4) Impact of man on environment
5) Environmental Conservation
6) Development and environment
7) Environmental management
8) Environmental Pollution—cause and effects.

The FM mode of Radio has become a much-preferred medium by the masses due to its better voice quality and stereo- like reception. Starting with a few stations in 1993 by allowing private FM stations, recently the Ministry of Information and Broadcasting floated tenders for auctioning 336 FM stations all over the country.

Out of these, about hundred are set aside for Indira Gandhi National Open University’s (IGNOU) Gyan Vani program and other educational institutions. The Gyan Vani program is an effort of IGNOU for spreading its educational programs throughout the country with a network of about 100
stations in the near future. All these should be ideal vehicles for taking the messages of environmental concerns to the masses.

The Consortium for Educational Communication (CEC)- an inter-university center of University Grants Commission (UGC) based at New Delhi prepares electronic media software for ‘e-learning’ activities on a wide variety of themes from lower classes to postgraduate level. The CEC has 17 Educational Media Research Centres (EMRCs) all over the country.

It is the responsibility of the media studies department in different universities and institutions and the EMRCs to act as a focal point for local problems and offer localized solutions. Premier institutions like the IITs and IIMs are doing such activities such as to take up the environment awareness related messages aimed at the community in the immediate vicinity of them. Also, UGC has taken up a special project for connecting all the institutions of higher learning recognized by it for better flow of information.

The media provides the news and views and talking points for the community leaders or opinion makers- that in turn influence the beliefs and attitudes of others. The media can be more effectively used in educating the teachers, rather reaching the pupils. The focus of printed and audio-visual program of conversation education should be the teacher, the college student, the progressive farmer, the extension worker, the Panchayat Chairman, the city ward boss etc. They (the programs) should use the techniques of popular science to coax some of the viewers into new courses at action. Simultaneously, work must continue using pedagogic and adult education insights on how to speak to the masses when the media manage to reach them.

To make an effective contribution towards improving the environment, educational action must be linked with television. Certain features and documentaries pertaining to various facets of the environmental problems and their protection should be made a regular feature of the television programmes. As incentives to produce better features and documentaries on these aspects the prizes should be announced for good productions, Figure and features which
clearly depict environmental hazards be telecasted between two scheduled programs.

To achieve the effective development of Environmental Education, full advantage must be taken of newspapers. Following are certain recommendations, which may be followed to spread effectively the environmental awareness amongst the masses. Newspaper is instructed to play a more active role in the development of environmental awareness amongst people.

Adequate and pertinent matter on problems of environment, environmental degradation, environmental protection and planning must be published by each newspaper and magazine. For this purpose in each issue a certain space be earmarked and that must be utilized for this purpose.

The publication of photographs, cartoons, flow diagrams, graphs etc., depicting various aspects of environmental degradation and hazards caused due to them must be published.

The newspapers and other periodicals are instructed to highlight the conclusions drawn by the seminars and conferences held on environmental problems. They may be initiated to take up the follow up programs by arousing public awareness. It is through such efforts that the environmental consciousness can be developed amongst people at large, which will help in improving the quality of environment. The unsuccessful role of Indian newspaper in foresting mass interest on crucial environment issues is also because of heterogeneous nature of readers and lack of systematic reporting of authentic environmental information. Moreover masses are much occupied with the basic needs like food, clothing and shelter and for them environmental problems often have a low priority.

One of the basic aims of Environmental Education is clearly to show the economic, political and ecological interdependence of the modern world. Documentaries and feature films produced depicting these aspects must be shown to appraise the people of the problems of environment, the extent of damage already done and possible methods of its care. These must depict the
duty of each human being towards the protection of the environment. Such features will arouse a sense of responsibility and thus help in protection of the environment. These films shows also provide opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment and to create new patterns of behaviour of individuals, groups and society as a whole towards the environment.

People of all ages and socio-professional groups have to be exposed to the problems of the environment. People of all ages and socio-professional groups come to public places while they are going to schools, offices, market, etc. They also have to take long distance travel in connection with their socio-professional activities. Well designed and properly worded posters are placed at prominent public places, eg; along roads, in city, national and state high ways, bus stands, railway platforms, parks, picnic spots and the like places. It will serve to introduce to a large population the awareness and our duties towards achieving a healthier environment for our happier living.

Education aims at adjustment not only to the child’s environment as it exists today but also to the environment as it would be twenty, thirty or fifty years hence.

The environmental education program for understanding this dynamic and complex nature of the environment around us and for the development of awareness towards its multifaceted problems require a radical change in the approach to education. Education has to become a vehicle for social, economic and cultural transformation. It must concern itself with the actual circumstances in which an individual functions in a society.

If the values of Environmental Education are to incorporated and instilled in the minds of children, it is essential that education be closely linked with the community and the school be aware of the community’s needs and aspirations. Values are developed over a period of time and for value clarification along with self-awareness of the individual, the supportive climate in which such values can be developed is also essential. What the child learns
at school has to be extended beyond the four walls of the classroom. Therefore, the other members of the community will have to play an important role.

Parents are uniquely placed in respect of the child's development of the value systems. The value system does not develop overnight but has to be nurtured over a long period of time. Parents, therefore, should be educated for the role they can play in making Environmental Education effective.

The messages of Environmental Education must be transmitted to parents. The teachers and community workers like the health worker; the extension officer and the sarpanch can be important agents for making the community aware of the need for Environmental Education. Parents can later help to create a supportive climate for developing positive attitudes in the children. Parents should see to it that children do not waste water, food and other natural resources.

Community workers must cooperate to keep the surrounding clean and help in avoiding pollution. Parents must encourage children to ask questions to find out cause and effect relationships and help them draw inferences based on their day to day life experiences. When the child is at home the parents may constantly observe the values and skills that are expected to be achieved through Environmental Education. As members of the community, parents should help the school in effectively planning programs in Environmental Education. Wherever parents have expert knowledge of certain aspects of environmental problems the school can have the benefit of their knowledge and advice.

In order to help children grow in knowledge, skills, values and attitudes relevant to Environmental Education, teachers also have to take up a new role. Teachers are expected to be not only the dispensers of information and knowledge but also managers of teaching learning situations. The ways of classroom organization have also to be drastically changed. For the purpose of profitably utilizing the time and taking care of the interests of the children, teachers should resort to group activities and bear with certain amount of active involvement and talking in the classroom. Therefore, the concept of discipline
in the classroom has also to be changed. This necessarily means that the education officers and other supervisory staff engaged in supervision of classroom activities must also be oriented towards the environmental approach to teaching learning strategies in the classroom. They should look for the positive development of skills and attitudes in the children rather than the acquisition of bookish information.

Apart from the teacher the parents and other community members, the social institutions in the community namely, the churches, temples, mosques, community centers, etc., also have certain role to play. These institutions are places where active participation takes place either through religious or through social functions.

During the celebrations of these functions, efforts must be made to see that the community resources are properly used. These functions provide ample scope for developing cooperative living and harmonious adjustments in the community.

Environmental Education has many facets and environment base education cannot remain for long circumscribed to the immediate environment of the child, but sooner or later it has to be extended to more complex environmental situations and problems. It is not possible for the schoolteachers to have knowledge about sequential and in-depth study of all these complex problems and phenomena. It is here that the professional institutions can play an important role. Wherever the professional can personally contribute to the school programs in Environmental Education through their expert knowledge and guidance, they can be requested to do so. However, it is difficult to intervene personally and directly in the school. Therefore, if Environmental oriented education, has to be effective, the professional information must reach the school in a form easily understandable and assimilable by the teachers and the students. If the informations about specific environmental problems and their solutions can be disseminated in the form of small, printed booklets or modules it would help immensely in improving the school program in
Environmental Education. Dissemination of such information can be taken up by the professional agencies in an organized way.

**Establishment and Role of Education Councils in Promotion of Environmental Awareness:**

Based on deliberations and interviews of the teachers and others with regard to Environmental Education the following suggestions and recommendations were brought about.

University and other teachers’ training institutes should incorporate training in Environmental Education. Such training should include scientific and cultural studies related to human activities and the environment.

Environmental Education councils composed of residents, officials, farmers, teachers, businessmen, members of municipalities and social workers should be established at the local level. Such councils should serve in an advisory capacity to assist in implementation of programs at the local level.

Environmental Education Associations at the national level should serve the professional; needs of environmental educators to create linkages with governmental and non-governmental agencies, and to assist in development and dissemination of curriculum materials.

A youth environment corps consisting of youth should be established to work on projects, which promote ecologically sustainable development, especially in rural areas. Youth corps projects should provide environmental knowledge and skills for participants in the program.

Environmental educators must develop practical pedagogical methods which address problems of environmental health in daily life, e.g.; clean drinking water, appropriate waste disposal, proper sanitation practices, as well as provide concepts and values regarding human environment relationships.

Environmental Education demonstration projects should be established at the local level in concert with economic development projects to demonstrate the benefits of such partnership. Such projects are necessary to
gain local support for Environmental Education and to provide a working model for ecologically sustainable development.

Environmental Education curricula should be reviewed and, where appropriate, revised to provide inclusion of scientific and cultural (Humanities, politics, economics) content sufficient to ensure that students understand the scientific basis of environment and ecology, the organization and process of human societies. Without this scientific and cultural understanding students are unable to develop a useful holistic perspective for effective citizenship and professional life.

Universities, educational, research and development institutions should be encouraged to generate new vistas of knowledge relating to Environmental management in their respective areas of specialization.

The international Society for Environmental Education should establish a global Environmental Education communications system to disseminate information and monitor indicators of the Biosphere’s Environmental quality such as soil erosion, fresh water availability, food production, energy utilization, population growth, pollution loading, rates of desertification and levels of soil salinization.

The general objectives set out for Environmental Education in Belgrade Charter (1975) related to Environment are awareness, knowledge, skills attitudes, evaluation ability and participation. These are exactly what is intended in science teaching at present. In no way Environmental Education is alien to the teacher. Both science education and Environmental Education aim at broader educational achievement beyond the mere acquisition of knowledge.

Keeping in view the new role and expectations in respect of Environmental Education the educational curricula especially in schools have been undergoing changes. The latest shift towards environment has given new emphasis, approach, and dimension to the curriculum. Attempts have been made to make the teaching- learning process environment based and environment biased. The curricular changes including the present one unfortunately are occurring so frequently that only a few of the educational
innovations have been able to get an actual foothold in the educational system more so in the schools. The extent of assimilation of these innovations is more in imagination and talk rather than in practice.

In spite of the best intention and efforts with limited resources we have not been able to cope with the changes. Over and above these agencies involved at various levels fulfilling the curricular needs could spare little attention to follow up the fate of the innovations in the working of the school system. These experiences are definitely the caution mark for the functionaries involved in designing and implementation of Environmental Education programs.

The selection of method in the process of curriculum development is an important one and among the four fundamental steps which can be represented by a simple illustration of model of Nicholls and Nicholls, 1978. These steps are important for affecting a curriculum to bring about the desired changes in pupils.

All the four steps are interrelated and interdependent and it is difficult to visualize any one of them in isolation. The selection of appropriate strategies and teaching methodologies helps in achieving the given objective through the identified relevant content.

The teaching methodology step in the curriculum directly concerns the classroom; the teacher being a central figure should be involved at the designing stage of the curriculum for its successful implementation. The teacher without an idea of an appropriate strategy is like a worker without a tool. It also encourages the teacher to adopt wrong method and thus losing the spirit of teaching learning process. A few attempts have been made about the strategies being practiced in Environmental Education programs. There is an urgent need of establishing the efficacy of the available teaching strategies in respect of the emphasis given on the environment in the curricula. Regional workshop (1980) has suggested suitable strategies for specific environmental content being taught in schools. These are expected to be employed by the teachers in addition to the basic competencies.
Need of Environmental Awareness among Secondary School teachers:

A teacher is an integral component of any educational system. Teacher is intimately connected with the society & is conditioned by the ethos, culture & character of a nation.

The teacher plays an important role in shaping & molding the habits, manners and good character of the children. It has been rightly stated by Wilkes\(^8\) in 1985 “the key to successful Environmental Education is the classroom teacher”. Thus it is the teacher who has to play an important role in National development and social change. The effectiveness of Environmental Education relies heavily on the knowledge, skills & attitudes of the educator. It is essential, the teacher should himself be fully aware of Environmental problems and day to day activities related to the Environment.

Education & awareness among the secondary school teachers are the most effective forces that can save our besieged environment. The basis of a healthy environment is good air, water & soil. These basic building blocks of life are obviously essential for life to continue & must be cared for, preserved & enhanced.

People acquire basic Environmental functions in order to grow food, find water & protect themselves from the climate. Therefore the sense of Environmental Education awareness among the secondary school teachers stems from: -

1) Learning experience gained from the environment development of skills, investigation & inquiry, communication and cooperative problem-solving techniques.

2) Education about the environment. A basic knowledge & understanding of environmental processes (atmospheric, hydrologic, geomorphic & ecological) & concepts (green house effect, water conservation & soil erosion & habitat destruction etc). Knowledge about human environmental behaviour is an in-dispensable component of the branch of Environmental Education.
3) Education for the environment, which encourages behaviours, which are environmentally sustainable and help to ensure that future producers & decision makers demonstrate sensitivity towards environment.

The effectiveness of any Environmental Education awareness relies on the knowledge, skills & attitudes of the educator. Environmental Education is not only a change in ‘what’ is being taught (the content) but also a new perspective on ‘why’ (the objectives and goals) & ‘how’ (the approaches & attitudes). The key to any change in the formal education system is the teacher. The teacher has to internalize a change in his/her role from one of “giver of knowledge” to one of “facilitator in the learning process”. If teachers are to be effective facilitators and internalizing the characteristics of Environmental Education and skills in transacting these need be built and strengthened.

In order to spread, disseminate and gear up the environmental awareness program it is essential that the teacher should himself/ herself have the sufficient knowledge of Environmental Education and the skill required to deal with Environmental Education in a meaningful way. The role of teacher in Environmental Education should include as a planner, sustainer & as a value investigator.

If the teacher is fully aware of Environmental Education and its related problems then he/she as a teacher can help to solve a number of local as well as Global environmental issues in the following ways: -

1) The teacher would be able to create a feeling of togetherness and positive attitude towards environment.

2) The teacher should be able to promote dustbin culture to be followed at various public places like bus stand, railway station and other public places.

3) The teacher should be able to channelize the energy of the students to create an atmosphere free of pollution.

4) The teacher should be able to campaign against the use of plastic carry bags and implement the habit of using alternatives of plastics in day-to-day activities.
5) The teacher should be able to plan the environment related activities correlated with the custom and traditions of the society.

6) The teacher who is fully aware must need to arrange guest lectures on protection of environment and thereby motivate the students to develop hygienic conditions around them.

7) A teacher should spread awareness about protecting the environment by directing each student to plant on his/her birthday every year either in school or elsewhere and nurtures its growth.

8) The teacher should be able to conduct field visits to industries and polluted areas to enable the students feel the need and importance of Environmental protection.

9) The teacher should be able to ask students to take up projects like rain water harvesting, recycling, building of nests, making decorative items from waste, survey of plants, survey of utilization of energy resources.

10) The teacher should encourage each and every student to celebrate important days relating environment viz; World Forest Day, World Population Day and World Conservation Day etc.

11) The teacher should be able to inspire young children and give them training as soldiers in Environmental protection.

12) The teacher should be able to sow the seeds of Sustainable Development in the young minds.

Thus for the effective implementation of Environmental Education, our teachers themselves should posses enough environmental awareness, positive environmental attitude and skills of achieving objectives in relation to their students.

It has been rightly stated by NPE⁹, 1986, which states, “There is a paramount need to create a consciousness of the environment. It must permeate all ages and all sections of society, beginning with the child. Environmental consciousness should involve teaching in school and colleges. This aspect will be integrated in the entire educational process”.
Most of us are still unaware about the present dangerous environmental situations and about the environmental decay, it is the need of the hour to make everyone aware about the problems facing the environment and this can be done only by formal education and by introducing various programmes and also including the proper content in their study subjects.

Environmental Education and its awareness is essential to develop insight and skills needed to influence not only environmental attitudes and behaviour in the students but also to stimulate their orientation of values regarding the importance of Environmental Education. The development of Environmental attitude is a key factor for pupil teachers to become an environmental facilitator.

Therefore it is very essential to develop Environmental resource efficiency among teachers so Environmental Education should be made interdisciplinary and training them to be flexible, yet competent, analysts and decision makers. The prospective teachers should be able to carry out difficult tasks in schools if they are not taught accordingly, Environmental consciousness can be developed among the teachers by introducing the course of Environmental Education in teacher education programmes as well as in their teaching subjects.

In an attempt to narrow down and solidify the focus on what teacher should know in order to be an effective environmental facilitator, ‘Utilization’ and not ‘Exploitation’ should be the motto.

Since, Environmental protection and conservation is very important for the promotion of sustainable development, the role of the teacher in facilitating the Environmental awareness among the students, research and pre-service and in-service training of the teachers assumes considerable significance which has its relevance in this context today.

Like all other types of education, in Environmental Education also, the teacher is sole arbitrator of curriculum and the central figure in classroom. UNESCO therefore recommended that:
1) Environmental science and Environmental Education should be included in curricula for pre-service teachers.

2) The staff of teacher education institutions be associated in this respect, and

3) Teachers should get appropriate environmental training related to the area, either urban or rural, where they are going to work.

Effective Environmental Education program for pre-service and in-service teachers should consist of three basic elements:

1) The teacher needs a functional knowledge of Environmental Sciences.

2) The teacher must have a grasp of the educational methods and professional skills needed to impart Cognitive, Affective and Psychomotor skills to the learners.

3) The teacher’s training should expose him to actual situations in which learners can further strengthen their reservoir of skills.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Levels of Teacher Education</th>
<th>Objectives</th>
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<tbody>
<tr>
<td>1.</td>
<td>Primary teachers</td>
<td>Awareness of environment</td>
</tr>
<tr>
<td>2.</td>
<td>Secondary and Higher Secondary teachers</td>
<td>Understanding skills for real life situation of natural resources</td>
</tr>
<tr>
<td>3.</td>
<td>College and University teachers</td>
<td>Ability of solving environment problem</td>
</tr>
</tbody>
</table>

The above table shows the levels of teacher training course at which Environmental Education should be imparted.

Although lot of research have been undertaken in the context of Environmental Education, awareness among teachers by many researchers in India and abroad, still the subject faces certain limitations about its proper implementation. The loophole seems the lack of attitude on part of the teacher. Thus, the Secondary school teacher should be fully aware of the Environmental Education aspects, only then, he/ she can make the future generations aware of the environmental problems and their solutions.
For our purpose the stages will be referred to as those of the primary school (5 to 9 plus), Middle school (9 plus to 12 plus) and High school (12 plus to 15 plus).

1. **Primary Stage:**

The primary school years are unpromising for specific environmental studies. It is the period in which the school is preparing the child for the transition from home to the neighborhood environment and not the one in which the environment is acting as a bridge in the school. At the age of 6 or 7 the child is undergoing marked emotional difficulties, which are more satisfactorily accommodated in the sympathetic classroom than in the uncomprehending neighbourhood.

At this stage the child finds it difficult both to see the environment and to reason about it. We would not expect the child to look out clearly on to the environment and discriminate the particular features amongst the complexity of a neighbourhood situation. If we try to make him learn something he is likely to forget what he has learned. It is better to give some knowledge in the classroom through books, films and such other visuals. Actual fieldwork can be undertaken occasionally on fine days or some unambitious excursions can also be undertaken.

2. **Middle Stage:**

Enthusiastic description of environmental studies can be undertaken at this stage. In the early years, the average child is emotionally stable and is capable of concrete operational thinking, as most of his/her learning takes place in the school. But there are good reasons, why the middle school children should spend some more time in the neighbourhood. They may never be able to elaborate in the environment all the concepts learned in the classroom but some concepts should be developed and refined in the field, and abilities transferred from models and apparatus to the situations of real life.
The colourful stereotypes which were created in infancy by fairy stories and picture books, and which have been actualised by the increasingly realistic stories in the Middle school may now be taken to a further stage of realism by identifying them in the neighbourhood. While pursuing these ‘applied’ objectives, the child can do some pure environmental studies, learning about the environment in order to know it better.

3. Secondary Stage:

This is a period of transition to formal operational thinking. But the most important aspect of maturation at this stage is not Cognitive, but Affective, the process of puberty and early adolescence. This is an age of putting away things, which appear childish.

This is the stage of rebellion against the familiar, the traditional and adult. For some children these years are a high point of indiscipline and delinquency. The average child is intensely interested in himself, in his own emotional problems, his appearance and his immediate social relations.

Physical training, drama, music and art meet some of his needs here. Environmental studies in middle adolescent years most satisfactorily take the ‘applied’ forms of adventure training and outdoor pursuit and specific opportunities for personal and social development.

Significance of The Study:

Education refers to a process of awareness building and sensitization, which can be geared to the adults, school children, to college and University students or to different occupational groups.

According to Merie O’ Neil\textsuperscript{10} (2002) of the Earth times, “something more than education is required to produce Environmental action”. Watershed projects are just part of an effort to introduce environmental literacy into curriculum of schools. An ongoing involvement with nature combined with knowledge was the strongest contributing factor to the development of environmental literacy.
A tenet of Environmental Education is that humans use ecosystem, exists in complex interactions with ecosystems, and are ultimately accountable for their effect on the ecosystem (Willard, 1976). In the name of development we have been distancing ourselves from nature. Due to rapid industrialization and urbanization we have lost our relationship with environment. At this juncture, when the nature is fighting a lost battle against its degradation. What on earth are we doing by being a part of it? The only way to revive this relationship is Environmental Education.

Healthy, clean and pure environment is a precious gift of nature to the humanity. The environment, which is made up of the layer of air above the surface of the earth and water and soil on the surface of the earth, is habitat of man as it is for all other living things. Like many other living organisms man has to depend for this life on the environment. He receives his basic necessities of life like water, air, food and shelter from it. So neither the present generation nor the posterity has any right to obliterate its wholesomeness or pollute it. Every one of us has an equal right to live in a healthy and clean environment. The Environmental health of a country is in fact, an indication of the quality of life of the people. It is an established fact that physical division of the environment on boundary basis is impossible.

Therefore, protection of environment should be done collectively by every body. Man’s demands are unlimited and ever increasing, which results in thought less degradation of the natural environment. With the development of science and technology and the growth of population and industrialization came the tremendous changes in national environment thereby posing danger to the physical, mental and social health of man. Deforestation has lead to destruction of Wildlife, soil erosion, loss of soil fertility, recurring floods, and formation of deserts, unplanned industrialization and urbanization have accentuated the problem of waste disposal, sanitation and provision of pure water and clean air, similarly increasing use of nitrogenous fertilizers and pesticides in agriculture have also aggravated the problem of water pollution and land pollution. Now we are facing dangerous levels of pollutions in water,
air and earth which are causing undesirable disturbances to the ecological balance of the biosphere.

Due to rapid industrialization and new technological developmental facilities like vehicles, motors, machinery etc., we are facing so much noise-disturbance, which may affect the human health physically and mentally.

Therefore, we must recognize that increased attention to the problem of the human environment is essential for social as well as economic development of humanity.

The educational institutions should play an important role in arousing civic consciousness for abatement of environmental pollution by ensuring that every citizen is knowledgeable enough about the environment to take an interest in pollution problems.

For this Environmental Education should be made an essential part of the curriculum in educational system. Environmental Education, to my mind is just not awareness, it is far more. It is development of the attitude to make world a better place to live in, to be aware of what is happening around and above all to act without fear. A primary goal of Environmental Education is the development of responsible behaviour in citizens, both as in individuals and as societal groups.

The Supreme Court of India (2004) directed all the states and educational agencies in the country to introduce environment as a compulsory subject in all classes in schools up to higher secondary level for the academic session (2004-2005) with the help of Central Pollution Control Board.

National Council of Teacher Education (NCTE) discussion document (2004) emphasized on the importance of Environmental Education for pre-service teachers and in-service teachers and its inclusion in the teacher-training program. Environmental Protection Agency (EPA) lists the curricula and activities on a variety of Environmental topics and explores creative ways to teach students about the environment such as air, conservation, ecosystems, human health, waste and recycling of water. The website also lists the community service projects which allow students to apply
the lessons learned in classroom to real-life situations and experiences. These projects are ‘Adopt your watershed’, ‘Backyard conservation’, ‘EE link local organizations’, ‘Planet repair organizations’, ‘Service learning: Education beyond the classroom’, etc.

Department of Natural Resources (DNR) provides activities, which can be used with students to enhance information found on Environmental Education for kids. These are changing the land, conduct a fish survey, how to plant a tree, observing wetland habitat, trees and air quality, and who are they and what did they do?

So, Environmental Education takes care of the relationship of man with his fellow human beings in addition to the man-nature relationship. In order to accomplish this goal, Environmental Education should develop certain ethical standards, which prompt people, without fear of the law, to protect the environment.

Quality Environmental Education in schools depends more on the qualifications, teaching experience and preparation of the teachers than it does on the school curricula. The key to successful Environmental Education in the classroom is the teacher. If teachers do not have the awareness, skills, commitment and an attitude to environmentalize their curriculum, it is unlikely that environmentally literate students will be produced (Wilke\textsuperscript{8}, 1985).

For imparting sound- Environmental Education, the teacher should not only be aware of Environmental problems but must posses basic knowledge of Ecology i.e.; the environmental science of survival.

In the previous discussions, we have seen that, in just a small fraction of time on Earth, man has served as a powerful agent of change in the Global environment and that for billion of years have moulded the face of our Earth and character of life on it. Time has come when we have to actively face the consequences of our uncontrolled experiments with this planet.

In recent years we have been observing an unprecedented awareness of environmental problems among conscious public. Newspapers and magazines come out with sensational declaration in the form of “Biosphere in Danger”, “
On the way of an Ecological Catastrophe”, “Civilization will die in Twenty years”, “Global solution to our polluted Planet”, “One Earth, one Future” etc. Frightening facts and figures of global environmental deterioration pictured the fate of the planet to the readers.

Earlier man did not pay any attention to the growing problem of environmental degradation, as it was not that serious in the beginning as it is today. The problem today has become so serious that the government of every nation whether of a developed or a developing country is thinking and working on it actively. Besides, private organizations have also been set up in many countries to look after the problem. One of such agencies is mass media, which is working very hard worldwide in spreading awareness of the problem and its consequences.

The need of the hour is to prepare future citizens to lead a sustainable life style and place ecosystem concepts at the intellectual center of all disciplines, *(Disinger*, 1933). Though sustainable development is a national and international; issue, it becomes locally defended through actions and decisions within cities, neighbourhood and communities, which fall under the realm of society. School is the epitome of society.

If we want to secure the future of our environment, we have to create awareness about the environment and an attitude of caring and sharing of natural resources in the mind of those who are the future of our nation.

As rightly said by Pt. Jawaharlal Nehru, that the future of India is shaped in her classroom, where teacher is the central figure. Teachers are the pillars on whom the future of nation lies by percept and example.

The issue of Environmental Education has been discussed at several national and international seminars, workshops, and conferences after deliberations at Fourex in 1971 and at Stockholm in 1972. The United Nations conference on the Human Environment, convened in Stockholm in 1972, provided an impetus for renewed interests in Environmental Education during the 1970’s. The Stockholm Conference (1972) stressed specifically on the need for promoting awareness of the environmental issues. Developing
Environmental Awareness was also stated as one of the objectives of Environmental Education in Belgrade Charter.

In response to Stockholm recommendations the United Nations Educational Scientific and Cultural Organization (UNESCO) and the United Nations Education Program (UNEP) set up an International Environmental Education Program (IEEP), which aims at promoting exchange of information and experiences in the field of Environmental Education. Workshops, symposia, and studies were held during the 70’s to deal with various aspects of Environmental Education.

Therefore, it is implicit in all activities aiming for changed students’ behaviours, that teachers should be the role models of desired behaviour by action or by word.

“Whatever we want to achieve emotionally in our pupils should already be present in the teachers”, (Harbrich and Kohler, 1981). With the above statement, the role of teachers becomes manifold, cutting across all the boundaries of discipline, qualifications and specifications. The teachers should be able to discharge the role of Green Educators in today scenario to spread the Green Message to everybody especially, young and be broadened in its scope to encompass problems that falls under the realm of environment thus exposing the children to the holistic picture of environment and sensitizing them with the slogan of “Conserve or Perish”, (UNESCO 1998).

Environmental Awareness is the first step to Environmental Education. To develop awareness among the people about environmental problems and conserving is one of the foremost objectives of Environmental Education.

Since teachers play a pivotal role in promoting the Environment awareness among school children at the grass- root level, so there is an urgent need to generate and promote Environment awareness among Secondary School teachers.

Teachers’ are the means through which dissemination of Environmental awareness can take place in children.
The present study, therefore, is focused to measure the awareness of environment among the Secondary School teachers. In this study the Secondary School teachers have been chosen, because Secondary level is a crucial stage when students are found more active, alert, inquisitive and enthusiastic. Thus, in the process Secondary School teachers can lay the foundation stone about the need of the hour to protect the environment.

The review of literature shows that no comprehensive effort has been made to study environmental awareness among Secondary School teachers.

Developing environmental awareness among public is supposed to be the foremost objective of Environmental Education (Belgrade, 1975), hence it may prove to be of great value to study Environmental awareness in Secondary School teachers.

Therefore, the investigator feels it worthy to carry out a comprehensive, analytical and in-depth study on the problem in hand. As a humble beginning, the investigator tried to study the extent of Environmental awareness among the Secondary School teachers. Awareness was selected because that provides the basis for developing a positive attitude towards the appreciation of different environment problems and inspires one for the actively participating in the programs for conserving nature and preventing further deterioration. Awareness is the springboard to conservation. Also, the study was carried out on the secondary school teachers, because most of the pressing need of Environmental Education was found at Secondary level of education.

Unless educational efforts for developing Environmental awareness and Environment based knowledge among teachers are undertaken urgently, our children would be ignorant about environmental degradation and pollution and therefore could become victims of Environmental hazards.

Hence, the present study has been undertaken to find out the Environmental Awareness of secondary school teachers. The study also aims at finding out the effect of Gender, Subject Area, Type of School and Socio-economic Status of the teachers on the awareness of Secondary School teachers of their environment.
Considering Gender, Subject Area, Type of School and Socio-economic Status as the Independent Variables and to see their effect on Environmental Awareness, the dependent variable, the present study may provide valuable results in the fields of Environmental Education research.

School and teacher training colleges play an important role in Environmental Education and effectiveness of such education depends upon teachers.

Unfortunately there is dearth of good teachers and educators in our country to handle Environmental problems as they lack awareness, expertise and perfect training in Environmental Education. The Tbilisi conference rightly identified teacher as a key factor in the education of people about environmental problems. Teacher’s behaviour does have an impact upon student’s classroom behaviour. It is highly probable that teacher influence extends beyond the classroom.

Title of The Study:

The present study states as “A study of Environmental Awareness among Secondary School Teachers in Relation to their Gender, Subject-Area and Types of School with Special reference to their Socio-Economic Status”.

Objectives of The Study:

Every researcher deals with the solution of a problem selected by him. Therefore, the researcher has certain specific goals in his mind to achieve the well-defined purposes. These specific goals or purposes are technically termed as objectives. Without objectives no research is possible. The entire research process is guided by objectives, which have been explicitly and precisely spelled out by the investigator in advance. The present study has the following major objectives given below: -
1.) To develop a tool in the form of ‘Environmental Awareness Questionnaire’ for measuring and studying Environmental Awareness among Secondary School teachers teaching in various schools of Aligarh.

2.) To study Environmental Awareness among Secondary School teachers.

3.) To establish a relationship if any between Environmental Awareness and Gender.

4.) To establish a relationship between Environmental Awareness of Secondary School teachers and the subject which the teachers are teaching.

5.) To establish a relationship between Environmental Awareness of Secondary School teachers and the type of school where in they work, like Government or Private School.

6.) To study the influence of Socio-economic Status of Secondary School teachers on their Environmental Awareness.

**Hypotheses:**

To every problem, there may be more than one solution. A researcher’s effort is also directed towards the solution of the selected academic problem. Most of the time it is possible to make intelligent guess or a tentative solution and it is known as hypothesis.

The hypothesis is a powerful tool in research process to achieve dependable knowledge. It helps the researcher to relate theory to observation and observation to theory.

Hypotheses are formulated only as the suggested solution to the problem, with the objective that the ensuing study may lead to its rejection or retention.

Since research is a process of systematic inquiry investigation, and analysis of data, in order to increase knowledge, test hypotheses and arrive at conclusions; every researcher starts to investigate his/her problem on the basis
of a speculative proposition offered to explain a particular phenomenon, or as a premise from which conclusions can be drawn.

Such a proposition torches the researcher to right directions of the entire study. As for that matter, the investigator formulated the following hypotheses while dealing with the present problem: -

**Hypotheses Constructed:**

**The following hypotheses have been constructed for the purpose of this research thesis, which are as following:-**

**Ho.1** The Male Secondary School teachers do not differ significantly on Environmental Awareness in comparison to their Female counterparts.

**Ho.2** The Male Secondary School teachers of Science group do not differ significantly on Environmental Awareness in comparison to their Female counterparts.

**Ho.3** The Male Secondary School teachers of Social Science group do not differ significantly on Environmental Awareness in comparison to Female Secondary School teachers of Social Science group.

**Ho.4** The Male Secondary School teachers of Science group do not differ significantly on Environmental Awareness in comparison to Male Secondary School teachers of Arts group.

**Ho.5** The Female Secondary School teachers of Science group do not differ significantly on Environmental Awareness in comparison to Female Secondary School teachers of Arts group.
Ho.6 The Male Secondary School teachers of Science group do not differ significantly on Environmental Awareness in comparison to Female Secondary School teachers of Social Science group.

Ho.7 The Female Secondary School teachers of Science group do not differ significantly on Environmental Awareness in comparison to Female Secondary School teachers belonging to Social Science group.

Ho.8 The Male Secondary School teachers belonging to Arts group differ significantly on Environmental Awareness in comparison to Female Secondary School teachers of Arts group.

Ho.9 The Female Secondary School teachers of Social Science group do not differ significantly on Environmental Awareness in comparison to Female Secondary School teachers of Arts group.

Ho.10 The Male Secondary School teachers belonging to Social Science group do not differ significantly on Environmental Awareness in comparison to Male Secondary School teachers belonging to Arts group.

Ho.11 The Science group Secondary School teachers do not differ significantly on Environmental Awareness in comparison to their counterparts in Social Science group.

Ho.12 The Science group Secondary School teachers do not differ significantly on Environmental Awareness in comparison to their counterparts in Arts group.
Ho.13 The Secondary School teachers of Social Science group do not differ significantly on Environmental Awareness in comparison to their counterparts in Arts group.


Ho.15 The Male Secondary School teachers in Government schools do not differ significantly on Environmental Awareness as compared to the Female Secondary School teachers in Government Schools.

Ho.16 The Male Secondary School teachers in Private Schools differ significantly on Environmental Awareness in comparison to Female Secondary School teachers in Private Schools.

Ho.17 The Female Secondary School teachers in Government schools do not differ significantly on Environmental Awareness in comparison to Female Secondary School teachers in Private Schools.


Ho.19 The Secondary School teachers belonging to High Socio-economic Status do not differ significantly on Environmental Awareness in comparison to Secondary School teachers belonging to Low Socio-economic Status.

Ho.20 The Male Secondary School teachers that belong to High Socio-economic Status do not differ significantly on Environmental

Ho.21 The Female Secondary School teachers belonging to High Socio-economic Status differ significantly on Environmental Awareness in comparison to Female Secondary School teachers belonging to Low Socio-economic Status.

Ho.22 The Male Secondary School teachers of High Socio-economic Status do not differ significantly on Environmental Awareness in comparison to Female Secondary School teachers of High Socio-economic Status.

Ho.23 The Male Secondary School teachers belonging to Low Socio-economic Status do not differ significantly on Environmental Awareness in comparison to their counterparts belonging to Low Socio-economic Status.

Delimitations of The Study:

The present study is delimited to a population of 300 senior secondary school teachers randomly selected from 10 different schools of Aligarh and belonging only to different streams of subjects i.e. Arts, Science and Social Science.

Since it is generally not possible to study the entire mass of variables associated with a given problem, therefore, the investigator has limited his study only to four variables which are, Gender, Subject Area, Type of School and Socio-economic Status.

As every research study is limited in several ways and cannot be exhaustive and complete in all respects, the investigator has limited his study in terms of population covered, sample selected, scope of variables studied, the scope of generalization of findings and so on.
The present study also has certain delimitations which are as following:

1.) The study has been carried out on teachers of secondary schools so age as a factor remains uncontrolled.

2.) Since collection of data from entire country is a tedious task and tiresome process, the investigator limits his study to Aligarh only.

3.) The present research has taken into consideration only four dependent variables namely; Gender, Subject Area, Type of School and Socio-economic Status. There may be a number of other factors or variables affecting the environmental awareness of secondary school teachers. As these variables are beyond the purview of this research, so their impact may be overlooked.

4.) In view of the nature and the amount of work involved in the study, the researcher limits his study only on teachers of three subject areas, namely- science, social science and arts.

5.) Differences and comparative study of senior secondary school teachers about their environmental awareness cannot be done because of the exhaustive and tedious nature of the study. Also this would make the present research work more complex and confusing.

6.) The study limits its generalizations to the selected variables and selected sample.

The present study is an attempt to measure the Environmental Awareness among secondary school teachers. Measuring Environmental Awareness in secondary school teachers is a very difficult task especially when there is no suitable tool for the measurement of Environmental awareness. But the investigator unfortunately could not get the tool (questionnaire) employed to measure the secondary school teachers’ awareness. Moreover such non-standardized tools cannot be relied upon, therefore, the investigator himself developed a tool required for measuring environmental awareness. The investigator in order to gather relevant information has himself developed an Environmental Awareness Assessment Scale, which will be administered to the selected sample. This tool may not cover all the issues related to the
environmental awareness and the study might not cover all the aspects that may have any bearing on the environmental awareness. The sample of the study consists of only the teachers teaching in Private and Government schools of Aligarh only, therefore, the results obtained, may not be generalized on a universal basis.

The present study delimits its problem only to the selected sample and available resources.

**Definition of Important Terms:**

The use of various terms in the study may create ambiguity and confusion. To avoid ambiguity the important terms used in the present study are clearly defined.

1. **Environment:**

In the most general term, the word “Environment” has been defined as “the sum of all physical, chemical, biotic and cultural factors that affect life of man in every way”.

The Oxford dictionary defines environment as “conditions, circumstances, etc.; affecting people’s lives.”

According to **Gloria Studdard**, the environment is the sum of external conditions and influences affecting the life, development and ultimately the survival of an organism”.

**Jose de Castro** opines, “Environment as a system of mutual relations between living creatures and their natural environment.”

Environment is a holistic view of the world, as it functions at any time, with a multitude of special elemental and socio-economic systems distinguished by the quality and attributes of space and mode of behaviour of biotic and abiotic forms.

Environment as a science, is defined by the Brazilian Scientists as not only the sum of all material things that interact with each other, but it also
includes the economic and cultural aspects as well as the habits of peoples in different parts of the world”.

The term Environment has diverse meanings in different segments of human societies. To environmental activists, environment seems to be everything including slums and the human population of which they are part. Politicians and industrialists have a far more restrictive view. They tend to equate environment with the wild environment, lorable creatures, endangered species and the like. This diversity of meanings is not only confusing, but it also leads to misinterpretation and error.

The *International Encyclopedia of Social Sciences* defines Environment as “The aggregate of all the external conditions and influences, affecting the life and development of an organism”.

In the Dictionary of education, C.V.Good (1973), defines, “Environment as a general term designating all objects, factors and conditions that affect the individual through such stimuli as one is able to receive”.

The World Book Encyclopedia has defined “Environment as many factors, which influence man, and other living things, some of which are internal and inherited, others are external. A combination of these internal and external factors makes up the environment. Physical, Chemical, Biological and Cultural factors are in man’s external environment”.

An Environment is every thing that is external to an organism. A human being’s environment includes such factors as temperature, food supply and other people. A plant’s environment may be made up of soil, sunlight and animals that will eat the plant. Nonliving environmental factors such as temperature and sunlight, make up the abiotic environment interact to make up the total environment of living and nonliving things.

Abiotic environment include such factors as soil, water, atmosphere and radiation. The biotic environment is made up of many objects and forces that influence one another and influence the surrounding community of living things. For example, a river’s current, temperature, clearness and chemical
composition will influence what kind of plants and animals live there and how they live.

One important group of abiotic environmental factors make up what is called the weather. Living and nonliving things are influenced by rain, snow, hot or cold temperature, evaporation of water, humidity, wind and many other weather conditions. Biotic environment includes food, plants, animals and their interaction among one another and the abiotic environment.

The New Standard Dictionary of the English Language defines environment as “Whatever environs or encompasses, especially one’s surrounding collectively, which affect the life and development of an organism”.

Narayan Hedge, noted environmentalist says “In simpler terms, our environment is our surroundings; including both living (germs, plants, animals and people) and nonliving (land, water and air) components of it. The components also constitute our environmental assets or resources”.

The above definitions are not comprehensive in nature, as environment is much more than the interaction of organism with his nonliving world. Environment is not limited only to the sum total of material things affecting the people, but it also includes the economic structures, social set up, cultural and ethical factors too, and the outlook and habits of the people’s living in different parts of the world.

There are mainly three aspects of environment, of which we are concerned about, these are: -

1. **Physical Environment:**
   Physical environment includes both the natural and man-made environment and material things such as transport, industries, communication network etc.

2. **Social Environment:**
   It is concerned with the society and social set up.
3. **Natural Environment:**

It is not man made and includes the entire universe. Man lives in association with his/her entire environment and considered himself as part and parcel of them. It is the education, which makes him realize that he is an important part of nature and nature's presentation is one of his major responsibilities, which he can do by mutual cooperation and joint efforts. The natural environment consist of all those components of the biosphere that originated independently of man, example plants, animals, Earth, the atmosphere etc.

With reference to the above definitions, the present investigator takes into account the environment in its totality—natural and man-made, ecological, social, cultural, and aesthetic. All these factors affect the survival of living beings, quality of life, and the entire gamut of the relationship between man and environment.

2. **Awareness**

According to the dictionary of Education edited by **Carter.V.Good**,

"Awareness is the act of having or showing realization, perception or knowledge. It is the sum of all experiences that are known to a person at a given time". Total awareness at any given time is defined as over summative field property of a total behaviour pattern, paralleling the condition of being alive.

**Gordon Stowell** in his book, "The book of words", defines awareness as "To show awareness is to show that one realizes what is going on".

Chamber's Twentieth Century Dictionary defines awareness as "State of being aware; consciousness".

Thus awareness is the act of having or showing realization, perception or knowledge. Awareness requires knowledge, but any knowledge devoid of action may hardly assure any enduring result.
Action is initiated when the right kind of attitude and values are inculcated among people, right from the very beginning and sense of responsibility is developed. It implies sensitivity to what is happening around.

3. **Environmental Awareness:**

According to Belgrade Charter- “Environmental awareness means the act of having or showing realization, perception or knowledge about the environment and its related problems. It is a total behaviour pattern and sensitivity to the environment in its totality and problems related to environment.”

Environmental awareness may be defined as to help social groups and individuals to gain a variety of experiences in acquiring a basic understanding of environment and its associated problems.

Bulletin of the UNESCO office for Education _____ in Asia and Pacific world give us a better definition of Environmental Awareness which would mainly mean alerting one’s senses to the physical, social and aesthetic aspects of the environment through:

1.) **Anthropology**, which considers human beings as constituting an important part of the environment.

2.) **Stressing of interrelationship**, which exist between environmental components and the dynamic nature of the environment.

3.) **Recognition of very broad range elements**, tangible and intangible, such as plants, animals, soil, ways of life of man, manmade materials, sound, light, energy and the earth, the solar system and the Universe.

4.) **Understanding as far as it is possible from today’s knowledge of the ecological principles governing the environment.**

Thus, Environmental Awareness implies awareness and conscious of, and sensitivity to total environment and also to its related problems. It implies perception of the environment, the complex of physical, chemical, biological factors surrounding an organism or an ecological community.
Environmental Awareness is the state of one’s awareness towards the environment and is concerned with the actual familiarity or knowledge as well as attitude and responsibility towards Environmental issues related to it.

Environmental Awareness is taken as a composite of factual familiarity (i.e.; knowledge pertaining to the Environment) and personal variable (i.e.; attitude and sense of responsibility towards environment), which represents one’s conscious state of being towards his/ her own environment.

4. Socio-Economic Status:

The Socio-economic Status is a blending of the two statuses. Though none of the two can exist without each other yet they are distinctively different, ‘Socio-economic Status’ appear to be the resultant of the position of an individual in a society by virtue of a complex fusion of both of them, which often do not run parallel to each other in their own areas.

This intermingling takes place in an undefined and curious manner eventually to present an indicator to Socio-economic Status.

‘Socio-economic Status’ would, therefore, be a ranking of an individual by the society he lives in, in terms of his material belongings and cultural possessions along with the degree of respect, power and influence he wields.