CHAPTER- I
INTRODUCTION

1.1 ENVIRONMENT

Environment has been defined as the sum total of all conditions and influences that affect the development and life of organisms. Environment is interwoven in day-to-day life of human beings and as such man plays a great role in preserving and improving the environment for the sake of development for a better future. However, lopsided developmental activities are accelerating the pace of environmental degradation. This accounts for scarcities of natural resources, which subsequently threaten the sustained productivity of the economy, economic production and consumption activities.

The environmental consequences of development tend to offset many benefits that may be accruing to individuals and to societies on account of rising incomes. There are direct costs on the health of individuals, their longevity and on the quality of life on account of deterioration in environmental quality. More importantly the environmental damage can also undermine future attainments and productivity, if the factors of production are adversely affected.
Therefore, for a sustainable economic development, every country need to follow a stringent environmental policy where people will be responsible for ensuring long-term development, sustainability and suitability of efforts, and the ultimate success of projects at mobilizing local resources for meeting local needs and concerns.

Given the overwhelming emphasis being placed on the sustainability of development, it is crucial that environment education be placed at the center stage in the developmental activities. Indeed environmental education must be accepted as a prerequisite for sustainable development and suitable programmes must be chalked out through formal and non-formal system.

Everything that surrounds us may collectively be termed as environment. The air, which we breathe, the soil on which we stand, water living and non-living things around constitutes the environment. Environment has influenced and shaped our lives since time immemorial. It gives food to eat, water to drink, air to breathe, and all necessities of day-to-day life.
1.2 CONCEPT OF ENVIRONMENT

The concept of Environment is different from section of people in society. It is different from community to community and also the variation in the connectional understanding of what is environment and the growing awareness of it can be understood effectively in adverse environmental condition of the world. The physical and biological components of environment interact with others. Environment is the whole sum of the surrounding external conditions within which an organism, a community or object exists.

The modern man never accepts nature as a personified being. What we think of this mysterious power it is rather difficult to describe it in simple language. But as the word “nature” has become one of the most significant concepts in science and philosophy it is worthwhile to see whether we can form a clear nation as to what we mean when we use it. Nature is another word for ‘law’. It means birth coming to use from the Latin word “nature”. It is not correct to speak of nature, we are thinking of a continuous process. This is a basic concept of modern thinkers in the study of nature and environment. Nature is in the going forward of the physical universe. Nature’s laws are the manner of its going forward.
Besides nature and man-made hazards the earth’s surface is polluted by a number of sources. The land is polluted by millions of tones of solid waste from mines and urban centers while industries and cities discharge enormous quality of liquid wastes outside their location, in the same way burning of fossil fuels and wastes pollutes air. As a consequence of all these disasters and pollutions the environment is over burdened. The level of burden varies between countries and from time to time.

**1.3 MEANING OF ENVIRONMENT**

The word “Environment” is derived from the French word, “environner “which means to encircle (or) surround”. The environment is the basis of all life, the source of all goods. Environment can be defined as “The circumstances on condition that surround organism or group of organisms”, or “ The complex of social (or) cultural conditions that affect an individual community”.

The term environment means surroundings which is considered as a composite term for the conditions in which organizing life and thus consists of air, water, food and sunlight which are the basic needs of all living beings and plant life, to carry on their life functions.
Surrounding in which an organization operates, including air, water, land, natural resources, flora, fauna, human and their interrelation. All external conditions that affect an organism or other specified system during its lifetime.

Environment literally means “surroundings” which has a wide connotation including its physical biotic and human aspects of the earth. It includes the earth surface with all its physical features and natural resources, the distribution of land and water, mountains and plains, minerals, plants and animals, the climates and all cosmic forces that play upon the earth and affect the life of man. Thus all that surround a designed ecosystem is called environment.


Sharma R.C (1999) explains, “Environmental education is not an easy task, unlike other curriculum areas. It is universally accepted that environmental education should be interdisciplinary, drawing from biological, sociological, anthropological, economic/ political and human resources”.
Kulasekara Perumal Pillai, (2004) have conducted a research study of “Environmental Awareness of the higher secondary students”. He found that the environmental awareness of higher secondary students is low.

Little Flower (2006) conducted a study on environmental awareness and environmental ethics of higher secondary school students in Pondicherry, India, and found that the higher secondary school students possess a high level of environmental ethics. Also it was found a significant difference between the male and female higher secondary school students. Further it was found a significant difference between the higher secondary school students from government and private schools and also between the higher secondary school students from urban and rural areas.

Pradhan (2002) has conducted a study on “Environmental awareness among secondary school teachers”. The findings of the study indicated that the teachers working in secondary school have low environmental awareness and the teachers teaching science subject have greater environmental awareness. The study also has revealed that there is no significant difference between language teachers and science teachers in environmental awareness.

Shau (2003) has conducted a study on the “role of teacher in environmental education”. The research has admitted that, teachers are to be trained to use the community environment to enrich instructional goals. For this reason, a comprehensive teacher-training programme
should be developed, so that teachers are more effective in helping youth to acquire the skills and the knowledge essential in contributing to the solution of the environmental resource problem.

Mutisya, Sammy M.; Barker, Miles (2011) investigated a study on “Pupils' Environmental Awareness and Knowledge: A Springboard for Action in Primary Schools in Kenya's Rift Valley”. The study further found that pupils had ideas about solutions to some of the environmental issues. The study also recommends that environmental education should be taught both theoretically in class and practically in the environment, providing solutions to local environmental issues. Further, it suggests that primary school teachers' in-service training should include interactive teaching pedagogies to enhancing active teaching and learning of environmental education.

Nisiforou, Olympia; et.al., (2012) conducted a study on “Assessing Undergraduate University Students' Level of Knowledge, Attitudes and Behaviour towards Biodiversity: A Case Study in Cyprus”. The test results showed that there are significant differences with regard to the level of knowledge about biodiversity between the two groups. However, no significant differences were found on attitudes and behaviour towards biodiversity. The results have also shown that all students have a positive attitude towards biodiversity, while on the other hand, they find themselves, most of the time, unwilling to engage in environmental behaviour.
According to UNESCO (1976), “Environmental education is a way of implementing goal of environmental protection through education”. It is not a separate branch of science (or) field of study. It should be carried out according to the principles of lifelong education”. Environmental education includes three broad aspects; Education for the environment; Education through environment; and Education about the environment.

1.4 ENVIRONMENTAL EDUCATION

According to the United States Environmental Education Act (1970), environmental education is defined as an integrated process, which deals with man’s relationship of population growth, pollution, resource allocation and deletion, conservation, technology and urban and rural planning to the total human environment. Environmental education is intended to promote among citizens, the awareness and understanding of the total environment and the concern the responsible action necessary to assure their survival and to improve the quality of life.

Environmental education is a lifelong process and should aim at imparting knowledge and understanding of man’s total environment
and of the methods and their application for improving our near and distant surrounds but it should also aim values necessary to understand, appreciate and improve our bio and troposphere’s.

Environmental Education is an independent field of study which came to prominence in world scenario in the early seventies. However, the roots of environmental education can be traced back to the school systems of different countries under different names like outdoor education, nature study, conservation education, etc… For many, environmental education is both theoretical and practical as it is learning how to manage and improve the relationship between human society and the environment in an integrated and sustainable way.

The International union for the conservation of nature and natural resources has evolved the following definition of environmental education as an outcome of the conference “International working meeting on environmental education in the school curriculum” held under the auspices of UNESCO at Nevada in 1970. “Environmental education is the process of recognizing values and clarifying concepts in order to develop skills and attitudes necessary to a code of behavior about issues concerning environmental quality”.

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This specified the nature and scope of environmental education and also laid down the aims and objectives as well as the repertoire of strategies to be adopted at the national and international levels. The Conference resolved that environmental education should:

- Consider the environment in its totality i.e. natural and built, technological, social, economic, political, cultural, historical, moral, aesthetic, etc.
- Be a continuous, life long process, beginning at the pre-school level and continuing through all formal and non-formal education.
- Be interdisciplinary in its approach and drawing on the specific content of each discipline to give it a holistic and balanced perspective.
• Examine major environmental issues from the local, regional, national, international point of view so that students receive insight into environmental conditions in other geographical areas.

• Focus on current and potential environmental situations, while taking into account the historical perspectives.

• Promote the values and necessity of local, national, international cooperation in the prevention and evolving solution of environmental problems.

• Enable learners to have role in planning their learning experience and provide an opportunity for making decisions and accepting their consequences.

• Relate environmental sensitivity, knowledge, problem solving skills and clarification of values.

• Pertain to different ages but with special emphasis on environmental sensitivity to the learner’s own community in the early years.

• Help learners to discover the symptoms and real causes of environmental problems.

• Emphasize the complexity of environmental problems and thus the need to develop critical thinking and problem solving skills.
• Utilize diverse learning environments and a broad array of educational approaches emphasizing the practical experiences.

The Belgrade Charter written in 1975 by twenty world experts in environmental education also highlighted that the goal of environmental education is to “develop a citizen that is aware of and concerned about, the total environment and its associated problems and that has the knowledge, attitudes, motivations, commitments and skills to work individually and collectively towards solutions of current problems and prevention of new ones”. The goals of environmental education formulated and adopted at the Tbilisi Conference (UNESCO-UNEP 1977) are

• To foster clear awareness & concern about economic, social, political and ecological interdependence in urban and rural areas.

• To provide every person with opportunities to acquire knowledge, values, attitudes, commitment and skills needed to protect and improve the environment.

• To create new patterns of behaviour of individuals, groups and society as a whole towards the environment.
1.5 AIMS AND OBJECTIVES OF ENVIRONMENTAL EDUCATION

The environmental education programmes must aim at developing in each group.

- Awareness and understanding of the components, process and their inter relationship in the natural and built-up divisions of the environment.
- Sensitivity to events and change in physical, biological and socio-cultural system in the environment and about problems relating to them.
- Knowledge about the eco-system in one’s environment and their ecosystem, functioning, contributions, values.
- Appreciation of beauty, harmony, rhythm in the nature and the gifts of the nature to man
- Desire to utilize the gifts and provisions of the nature on the one hand and maintain its richness and balance on the other.
- Urge to identify and solve problems relating to the environment and to life of communication there in.
- Realization of the need to regulate utilization of environmental resources and prevent their depletion.
• Eagerness to apply corrective measures to excessive disturbance, depletion, pollution etc. that spoils the environment and invite dangers.

• To maintain and improve the quality of life in a healthy and rich environment.

• Sense of responsibility and commitment in protecting and conserving the environment, maintaining its strength and health for man’s benefit.

• Attitudes and values favourable to the above

The aim of environmental education is to develop as world population that is aware of and concerned about the environment and its associated problems and which has the knowledge, skills, attitudes, motivation and commitment to work individually and collectively towards solutions for current problems and the prevention of new ones are affected by conditions, interactions and changes in the environment. Cultural development has led to human domination of the environmental problems, waste of energy and deterioration of natural resources.

The broad aim of environmental education is to inculcate among the children, a sense of respect and responsibility towards the
environment and build awareness among all age groups. Working towards achieving this task, environmental education realizes that skills have to be developed in young children by means of which they can bring about a change in the existing state of the environment. The formal education has an important role to play, when it comes to environmental education, the teaching and learning process must be done through a fan- and learn’ method, thereby generating a genuine interest for the subject in the young minds.

Environmental education is dedicated to the task of creating an informed group of young citizens who will become the leaders of tomorrow, and for whom environmental issues will be a part of their daily lives. This will eventually bring about changes on a large scale, creating a more socially just and ecologically sustainable society.

1.6 NEED AND IMPORTANCE OF ENVIRONMENTAL EDUCATION

The earth can be thought of as a spaceship with limited resources. The living things including human beings are interdependent on one another and their environment. There is a delicate balance of nature a condition of natural ecosystem. There exists a dynamic
equilibrium involving various cycles. Interference of people with these cycles over periods of time could lead to catastrophic changes in the environment. The globe which has been hospitable to its occupants through its life supporting system now endangered by the lack of understanding of the consequence of environmental crisis and the total absence of personal and individualized global ethics.

The reform in educational system and process is central to the building of this new global ethics. These environmental problems cannot be solved merely through new technologies, legislative regulations and administrative restructuring unless there has been appropriate reforms and discipline in the life styles of people. Education is the most effective tool to modify the behaviour of the individuals and society in order to make man to understand his responsibility as a part of this biosphere. Man who is an integral part of the environment that is constantly interfering with the various equilibrium existing in the natural ecosystem thereby disturbing the balance of the nature. This has been leading to irreparable losses and changes in the environment. The Mother Nature who has been very patient with her sibling is showing her displeasure in the form of various natural disasters and in many other forms. It is high time that
we understand the underlying meaning and start reacting best of it without causing much harm to it indeed.

For such a thing to happen it is not enough to tackle it with new technologies or administrative strategies or legislative regulatory measures alone. Instead appropriate and effective reforms must be induced and brought about in the behaviour patterns and life styles of the people. The need for environmental education and its importance are;

- Man is a part of natural and bound by its basic laws. The more he crosses the limits and flouts natural laws and tendencies the more he invites danger.
- Nature is the protector, provider and the pointer more he understands about nature and appreciate its provisions and systems the better, for his safety and survival.
- Nature is the largest reservoir of the widest variety of resource. He draws his needs from the nature. Hence, he has to prevent their depletion and destruction beyond safe limits.
- In nature, the living and non-living things have interaction between one another, if there is a slight disturbance in the system.
• Man has to realize that while as a component of nature, he draws resources from nature, using his intellect, seek to modify and enrich his environment for better living. If he disturbs the natural equilibrium which may provide hazards to life.

• Uncontrolled output of industrial effluents and biological waste, expansion of modern means of transportation, rapid growth of population, crowded urban settlements, expanding industrialization shifting of agriculture and increased use of chemicals pollute the environment—air, water, they create hazards in biosphere etc.

• Unplanned dams, uncontrolled deforestation, production and use of nuclear energy disturb the balance and rhythm in nature and different forms of life.

• Modernizations of man interfere with the air we breathe, water we drink, and cook for cultivation and transportation thus disrupting the basic condition and provision of life.

The above facts help man and other forms of life to have better life for all.
1.7 SCOPE OF ENVIRONMENTAL EDUCATION

The teaching – learning about environment is important, here man has to tackle environment problems every day for his environment sustenance and property. It is therefore, in one’s own interest that one should learn about environment. One has to know which trees; crops can grow in one’s locality. It involves the knowledge of chemistry, future and structure of the soil of the locality, study of the drainage system of the rocks and of the running water, how rain water flows through channels and joins to a river, water is stagnant in some places so that mosquitoes can breed there, and cause malaria. We have to study some features of natural environment, which means food supply, health and recreation.

Environmental education is a process of education and that it covers man’s relationship with natural as well a social and manmade environment. It also includes relationship among population industrialization, pollution, resource allocation and depletion, conservation, transportation, technology, energy and urban and rural planning to the total biosphere. It is multi disciplinary in nature.
**1.8 PRINCIPLES OF ENVIRONMENTAL EDUCATION**

The UNESCO conference which was held on the 14\textsuperscript{th} October to 26\textsuperscript{th} October (1971) in Tbilisi (USSR) was a starting point for the international environmental education programme among the member states. The Tbilisi conference has given the following principles:

1. To consider the environment in its totality.
2. To consider a continuous life long process from pre- primary school to high school level as well as non-formal.
3. To be interdisciplinary in approach.
4. To examine major environmental issues.
5. To focus on current potential environmental situation.
6. To emphasize active participation in prevention and give solution to the problem.
7. To develop critical thinking and problem solving skill.
8. To discover the symptoms and root cause of environmental degradation.
9. To provide opportunity for making decision and accepting their consequences.
1.9 ENVIRONMENTAL PROTECTIONS IN INDIA

The World Bank expert reveals that in the year 1995 to 2010, India has become one of the fastest progressing countries in the world, in addressing its environmental issues and improving its environmental quality. Still, India has a long way to go to reach environmental quality similar to those enjoyed in developed economies. Pollution remains a major challenge and opportunity for India. India has adopted various international and national strategies to solve and mitigate many environmental issues such as Environmental Courts, Environment Friendly Products, Un-leading of Petrol, and Ban on Harmful Pesticides, National Waste Management Council, Public Liability Insurance, and Pollution by Motor Vehicles, Regulation of Sea Shore Hotels, National River Action Plan, Solar Energy Commission, and Prohibition of Smoking in Public Places. Even though, many environmental problems remain unresolved. Environmental issues in India are many. Air pollution, water pollution, soil pollution and wildlife natural habitat degradation put a lot of challenges in India in preserving minimum natural resources for the benefit of future development.
1.10 ENVIRONMENTAL EDUCATION, AWARENESS AND TRAINING SCHEMES IN INDIA

India is one of the very few countries in the world where a commitment to environmental protection and improvement is enshrined in the constitution. The Government of India also has launched several education programs, schemes and projects to spread awareness about environmental issues. The scheme intends to enhance our understanding about the interactions between human beings and environment. Also, it aims to facilitate the development of skills for environmental protection.

1.10.1 Formal Environmental Education Program

The program obliges the Ministry of Human Resource Development (MHRD), the Ministry of Environment & Forests to ensure that environmental education is imparted adequately at the school levels. It mandates that environmental components are covered in the school curriculum.
1.10.2 Non-Formal Environment Education and Awareness Project

The project was launched to encourage and enhance public participation in activities that intended to conserve, protect, manage and sustain the environment. The Government of India has undertaken various activities by using several medium of communication, to create awareness among the people, such as the National Environment Awareness Campaign (NEAC), seminars, workshops, training programs, rallies, public meetings, camps, exhibitions, puppet shows and street theatre.

Teaching methods that may be used in environmental education are lecture, demonstration, discussion, fieldtrips, projects, games, debates, case studies, competitions, exercises and lab work. However environmental education advocates the use of environment as a living lab in the teaching / learning process at all levels of education. Learning by doing can be achieved in the environment by undertaking experiments at micro and / or macro levels.

Thus education which is the manifestation of the divine perfection already existing in man (Swami Vivekananda) is considered
as the most effective instrument for tackling environmental crises, that is the need of the hour.

Besides these research institutes and professional institutions like Indian Institute of Technology, several Engineering Colleges, Schools of Planning and Architecture, etc which offer courses in environmental engineering. At postgraduate level, four major areas are being offered.

- **Environmental Engineering:** It includes subjects like architecture, civil engineering, town and country planning, including human settlements, slum improvement, landscape architecture, industrial design, regional science and urban ecosystem studies.

- **Conservation and Management:** It includes fields like land use, forestry agriculture, energy waste management, national parks, biosphere reserves, biological diversity, water management, mining management, non pollution renewable energy development, etc.

- **Environmental Health:** This includes public health and hygiene, sanitary and chemical engineering, occupational health, toxicology, nutrition and drug use.
• **Social Sciences:** It includes subjects like human ecology, sociology, social planning cost-benefit, community organization and services, psychology and counseling, environmental ethics and related areas of humanities.

There are some institutions and centers aided by Ministry of Environment and Forests, which provide formal education and training in environmental areas such as Centre for Environmental Education (CEE), Ahmadabad, Indian Institute of Forest Management, Bhopal and Indira Gandhi National Forest Academy, Dehradun.

1.11 NEED AND IMPORTANCE OF THE STUDY

Our environment determines our lifestyle. Development in contemporary civilization also depends upon the environment. The younger generation, especially students of higher education who are supposed to be the future leaders and decision makers may opt for changes in their life styles. Indications are prominent in this context around us from which one can easily realize the trend of changes. These changes will certainly be some determining factors in the renewal of development, especially with respect to products as well as demands of all types of industry, agriculture and thereby the economy.
Higher educational institutions are in general, and the faculty members absorbed therein specific, have major responsibilities in shaping the above-mentioned changes, both directly and indirectly. Students at higher educational institutions should be well equipped in this mission so that they can encounter the problems of environment in one hand, and on other hand, can impart consciousness about environment among the masses that comprise their environment and society.

Without a thorough understanding of man and his environment, the biological, ecological, social and economic changes on earth cannot be controlled. Therefore, the foundation of environmental concepts is of immense value in the functional unity of biosphere. It is only through the development of environmental study Programmes as a lifelong process, environmental awareness can be imparted. Environment includes all living and non-living objects. We live in the environment and use the environmental resources like air, land and water to meet our needs. Development also means meeting the needs of the people. While meeting the ever-growing needs, we put pressure on the environment. When the pressure exceeds the carrying capacity of the environment to repair or replace itself, a serious problem of environmental degradation happens. If we use any environmental
resource such as ground water beyond its limit of replacement, we may lose it forever. Therefore, there is a need to create ‘knowledge’ about Environmental protection. Environmental awareness is a basic towards the inculcation of proper environmental attitudes, ecological and environmental behaviour.

In the context of Tamil Nadu in India, the literacy rate is increasing over many years. It led to the establishment of many number of colleges all over Tamil Nadu. Besides, the students studying in colleges should have social dimensions; the environmental awareness and practice are given more importance in these days especially among the college students. Social workers can sensitize the people about the importance of environmental knowledge and behaviour for sustainable environment. This can be done by creating awareness among the students through different media and create different paths and encourage them for safe practices.

In the past two decades, Environment has attracted the attention of school and college students in India. They are becoming increasingly conscious of issues such as famines, droughts, floods, scarcity of fuel, firewood and fodder, pollution of air and water, problems of hazardous chemicals and radiation, depletion of natural resources, extinction of wildlife and dangers to flora and fauna. Since, Tamil Nadu
incorporated environmental education as part of their curriculum and it’s mandatory for all the students irrespective of their curriculum. Therefore, it is important to know the knowledge of environmental awareness among the future generation and their present practice towards environmental protection which leads to sustainable development. Therefore awareness about environment, environmental attitude and environmental behaviour is essential, and to meet the needs. In order to have insightful knowledge on B.Ed college students’ environmental attitude, environmental awareness and environmental behaviour, this study was undertaken. Therefore the investigator feels that there is a need for the present study and hence an attempt has been made in this line.

1.12 ENVIRONMENTAL ATTITUDE

Attitude is more or less permanent enduring state of readiness of mental organization, which predisposed an individual to react in a characteristics way to any subject or situation with which it is related. Attitude is a set of feelings, desires, fears, convictions, prejudices or other emotional tendencies that give an individual readiness to act because of his varied experiences. The characteristics of the attitude are Strength, Complexity, Importance, Interconnectedness and
Functionality. Attitudes have the following four important functions as given below,

1. Attitudes provide basis for defining social groups
2. Attitudes help to establish our identities.
3. Attitudes guide thinking and behaviour
4. Attitudes play an important role at the societal level

Many psychologists define attitudes in different ways. An attitude may result in a behaviour that may be favourable or unfavorable, positive or negative towards the psychological object or class or objects. An attitude is a way of conceiving an object. Attitudes are literally mental postures, guides for conduct to which each new experience is referred before a response are made. An attitude is a tendency to act towards or against some environment factors which become thereby a positive or negative value.

Environmental education has a long history linked with human’s growing interaction with the natural environment and developing appropriate attitude towards the same. The main objective of environmental education is to develop knowledge based awareness that
will lead to cultivation of responsible attitude to environment, without losing sight of value system of society and individual.

From the above objective, it becomes very clear that environmental knowledge and awareness would be of no meaning without cultivation of right attitude towards environment, so, attitude is a pre-requisite for fostering valuing approach and responsible action which is the ultimate goal of environmental education. In this context, Rachel Carson (1993) has said that in our rush to “save the earth”, we may tend to bypass a fundamental ingredient which many of us consider basic to any program for young children, developing a love for and appreciation of the earth.

Unquestionably, as we move into the information-centered upon 21st century, we must incorporate effective environmental education programs which build an appreciation of the natural world we are striving to protect, as well as, of the specific hazards threatening the world. Students should not be told what to think in regard to these complex issues confronting us, but rather what to think about and how to think constructively and critically.
The continued or sustained existence and survival of man in his environment is determined by the ways, manners and attitudes of man, as he strives to secure a guarantee for himself, a continuous supply of his basic needs from his environment. But, through lack of appreciation unfavorable attitude) towards environment, the main and perhaps the only source of his livelihood, man has often created problems for himself through direct or indirect destruction of his environment and its potential. It is, therefore, eminent for a concerted effort to be made to develop right attitudes towards environment which ensure responsible action towards environment and sustainable development.

1.13 ENVIRONMENTAL BEHAVIOUR

The industrial revolution that became from 1940 has permanently changed the ways human beings live and utilize natural resources by not only modernizing the life-style of human society but also causing an explosion in the population growth. The invention of automobiles and their growth has led to much faster exploitation of fossil fuel and its combustion resulting in a significant increase in carbon-di-oxide in the atmosphere, leading to a complex problem of global warming. Urbanization is rapidly expanding entailing huge
demands of energy and mass generation of pollutants and wastes. These developments have led to a much faster degradation of environmental quality, disappearance of biodiversity and loss of some pristine habitats from this Universe, threatening the very existence of human population and its future sustenance. The Environment Report, India (2009) reports that as high as 45% of the total land in the country is degraded by changing patterns of land-use with severe problems of air, land and water pollution.

The main hurdle in the tackling the problem of environmental degradation in developing countries like India is not only the lack of scientific knowledge but also the will to act. Under such a scenario, the society needs to be educated about the importance of environment and sustainable development for ensuring a better environment for our future generations. Environmental education in this context plays a significant role in sensitizing people about the rationale use of natural resources and hazards of environmental pollution.

Psychology attempts to develop human societies less exploitive in their use of natural resources. The degree of environmental awareness and attitude may determine an individual’s ecological behavior, i.e., actions which contribute towards environmental
preservation or conservation (Axelrod and Lehman, 1993). A recent pioneering study has established environmental attitude as a powerful predictor of ecological behavior (Kaiser et al., 1999). The three major components of environmental attitude, i.e., affect, knowledge and intention, may be used in prediction of ecological behavior. Ecological behavior may appear to be susceptible to a wide range of influences beyond one’s control (Hines et al., 1987). For example, cost of water affects water conservation; architecture of a home affects energy consumption; political measures promote or demote optimal usage of resources and/or minimal generation of wastes by the society. Thus, socio-cultural constraints may also determine which ecological behavior is easier to carry out and which is harder. Altruism and environmentalism appeared to be the internal variables that independently influenced pro-environmental behavior (Clark et al., 2003). The actual individual commitment to protect the environment is a function of the level of education, the degree of subjective well being, and to a lesser extent the level of population pressure (Duroy, 2005). Environmental behavior of the urban people was directly and indirectly under the influence of variable like age, gender, feeling of stress and preparedness to act of the residents (Kalantari et al., 2007).
A high environmental awareness among the old and young people may motivate them to adopt environmental friendly practices of living such as rational use of natural resources together with minimal generation of wastes. It may include elimination of diseases, poverty and waste accumulation in conjunction with conservation of natural resources and biodiversity, recycling of wastes and use of alternate sources of energy. Such an eco-friendly psyche of people may cause a paradigm shift in their behavior towards their immediate environment, which may reflect in their ways of utilization of natural resources, generation of wastes and its recycling; approach towards problems of environmental pollution and preservation of natural ecological resources. This in turn may harmonize environment with development.

1.14 ENVIRONMENTAL AWARENESS

Awareness of environmental protection is never a recent idea. Since the dawn of human civilization, man became a part of his environment. He observed nature’s beauty and mystery. He was influenced by the gigantic; the towering snow peaks of Himalayas, the boundless seas, the ineffable splendour of the seasons and the vast green meadows. The people of Aryabrata developed a deep, introspective mind which separated them from the rest of the world.
Nature in ancient India was worshipped by the people in form of mitava the sun varuna (the god of night and blue sky). Oye and Prithivi (the sky and the earth) and Agni (fire). This proves that primitive man preserved nature; rather he protected it in through of worship.

1.14.1 Definition of Environmental Awareness

According to Oxford Dictionary (1955), “The word Awareness” is defined as recognition of something or phenomenon”. Readers digest family world finder defines awareness, as “Realization, recognition, cognizance familiarity sensitivity, understanding, mindfulness, appraisal, acquaintance and alertness.

1.14.2 Role of Environmental Awareness

Our life is under the threat of environmental degradation. The natural wealth and ecological balance are almost lost. So, environmental protection and awareness is an urgent need. The most challenging task before us today is afforestation. New era has dawned. Man has entered the age of environmental awareness throughout the world. This awareness must be created at all levels and feel the environment protection is a responsibility of all. Through social
forestry, much emphasis is to be given for people’s participation and thus making social forestry a way of social life.

Man is a part and parcel of his environment due to his interaction with nature on a large scale, the balance of nature has been upset and environmental decadence occurred in most parts of the world. It has posed a great problem to the existence of man, planet threatening the quality of man’s life and his survival. So there is a need to increase awareness and understanding of that environment and man’s impact upon them to find out the effective ways to manage them. To achieve the goal, environmental awareness is to formulate a responsible attitude towards the sustainable development of planet earth an appreciation of its beauty and an assumption of environmental ethics. It is the responsibility of the teachers to inculcate an awareness of environment among the pupils before that, the teachers should test how much the pupils know about the relationship between them and environment.

For us, environment is a question of our survival and continued existence, solutions, in consonance with our particular social, culture, and economic milieu, have to be found through co-ordinate efforts between government, research institutions, industry regulatory
agencies and above all, by people at large, because conservation of environment necessarily has to be made by the people and for the people. Environmental goal cannot be achieved by effort of the government alone. It requires the active support and co-operation of the people. The difficult task of improving environmental sanitation is possible only if the people develop civic consciousness.

Without a thorough understanding of man and his environment, the biological, ecological, social and economic changes on earth cannot be controlled. Therefore, the foundation of environmental concepts is of immense value in the functional unity of the biosphere. It is only through the development of environmental studies Programme as a lifelong process, environment awareness can be imparted. Environmental awareness is basic towards the inculcation of proper environmental attitudes, ecological and environmental sensitivity. So, the awareness regarding the pollution, types of pollution, ecological effects of pollution, natural hazards, geological hazards, hydrological hazards, climatic and atmospheric hazards, ecosystem, global warming and biodiversity must be needed at the present context.

In the present millennium, environmental degradation is a matter of great concern before mankind. For the development of the human
race, man has been ruthlessly consuming natural resources and polluting the environment. Various environmental problems pose a threat to environmental sustainability, among which the increasing level of wastes and air pollution, formation of ozone hole, acid rain, global warming etc are some of the issues of common concern. Many of these problems are rooted in human behaviour and can’t thus be managed by changing the relevant behaviour so as to reduce its environmental impacts. Environmental activists and people in general who aspire to foster a less polluted environment and promote the sustainable use of natural resources, often assume that behaviour changes is a function of knowledge and awareness. Therefore creating environmental awareness among the students is the need of the hour.

Environmental consciousness has become a serious theme for discussion and deliberation. Much stress is laid on the environmental education for generating environmental awareness and attitude of the people so that they can take care of the earth, our life support base. The term ‘environmental awareness refers to creating general awareness of environmental issues, their causes by bringing about changes in perception, attitude, values and necessary skills to solve environment
related problems. Moreover, it is the first step leading to the formation of responsible environmental behaviour.

1.15 STATEMENT OF THE PROBLEM

Environment is the most vital part, as the interaction between man and environment has existed ever since he first appeared on earth. Therefore, it is highly necessary to maximize the efforts to conserve, protect, save and develop the environment for the future. As B.Ed. student teachers being vital part of our community and they being transparent, the investigator has chosen them as the sample. Hence the problem chosen for the study may be stated as follows, “A Study of Environmental Attitude, Environmental Behaviour and Environmental Awareness among B.Ed, Student Teachers in Tamilnadu State”.

1.16 OPERATIONAL DEFINITION OF THE TERMS

The definitions used in the study along with their operational definitions are given below.

**Environmental Attitude:** Environmental Attitude is more or less permanent enduring state of readiness, or mental organization, which predisposed an individual to react in a characteristics way to any subject or situation with which it is related.
**Environmental Behaviour:** Environmental behaviour is the range of human actions or activities, all shaped by the intention to protect the environment or reducing its deterioration, besides the impact on the environment itself.

**Environmental Awareness:** Environmental awareness is the Realization, recognition, cognizance familiarity sensitivity, understanding, mindfulness, appraisal, acquaintance and alertness towards the various dimensions of the environment.

**B.Ed Student Teachers:** It refers to the students who are studying the course of Bachelor of Education (B.Ed).

**1.17 VARIABLES USED IN THE PRESENT STUDY**

The main variables for the present study are Environmental Attitude, Environmental Behaviour and Environmental Awareness.

The Background variables of the study are Gender (Male/Female), Location of College (Rural/Urban), Nature of Residence (Hostel/Day scholar), Major Subject (Arts/Science), Educational Qualification (Under Graduate/Post Graduate), Type of Management (Government/Aided/Private), Type of Family Nuclear/Joint), Fathers’ Educational Qualification (Illiterate/School
Education /College Education), Mothers’ Educational Qualification (Illiterate/School Education/College Education), Community (OC/OBC/ SC & ST), Fathers’ Occupation (Daily wage/ Agriculture/ Government Job/Private Job), Mother’s Occupation(Daily wage/ Agriculture/ Government Job/ Private Job), and Parental Monthly Income (Below Rs.10,000/ Rs.10,001 to Rs.20,000/Rs.20,001 to Rs.30,000/Above Rs.30,001)

1.18 OBJECTIVES OF THE STUDY

The following are the objectives formulated for the present study.

1. To find out the level of Environmental Attitude of B.Ed. student teachers.
2. To find out the level of Environmental Behaviour of B.Ed. student teachers.
3. To find out the level of Environmental Awareness of B.Ed. student teachers.
4. To find out whether there is any significant difference between the Environment Attitude of B.Ed. student teachers based on the background variables; namely
a. Gender (Male/Female),

b. Location of College (Rural/Urban),

c. Nature of Residence (Hostel /Day Scholar),

d. Major Subject (Arts/Science),

e. Educational qualification (Under Graduate/Post Graduate),

f. Type of management (Government/Aided/Private),

g. Type of family (Nuclear/Joint),

h. Fathers’ educational qualification (illiterate/School Education/College Education),

i. Mothers’ educational qualification (illiterate/School Education/ College Education),

j. Community (OC/OBC/SC& ST),

k. Fathers’ occupation (Daily Wage/Agriculture/Government Job/ Private Job),

l. Mothers’ occupation (Daily Wage/ Agriculture/ Government Job/ Private Job), and

m. Parental Monthly Income (Below Rs.10, 000/ Rs.10,001 to Rs.20,000/ Rs.20,001 to Rs.30,000/ Above Rs.30,0001)
5. To find out whether there is any significant difference between the Environmental Behaviour of B.Ed. student teachers based on the background variables; namely

a. Gender (Male/Female),
b. Location of College (Rural/Urban),
c. Nature of Residence (Hostel /Day Scholar),
d. Major Subject (Arts/Science),
e. Educational qualification (Under Graduate/Post Graduate),
f. Type of management (Government/Aided/Private),
g. Type of family (Nuclear/Joint),
h. Fathers’ educational qualification (illiterate/School Education / College Education),
i. Mothers’ educational qualification (illiterate/School Education/ College Education),
j. Community (OC/OBC/SC& ST),
k. Fathers’ occupation (Daily Wage/Agriculture/Government Job/ Private Job),
l. Mothers’ occupation (Daily Wage/Agriculture/Government Job/ Private Job), and
m. Parental Monthly Income (Below Rs.10,000/ Rs.10,001 to Rs.20,000/ Rs.20,001 to Rs.30,000/ Above Rs.30,0001).

6. To find out whether there is any significant difference between the Environmental Awareness of B.Ed. student teachers based on the background variables; namely

a. Gender (Male/Female),
b. Location of College (Rural/Urban),
c. Nature of Residence (Hostel/Day Scholar),
d. Major Subject (Arts/Science),
e. Educational qualification (Under Graduate/Post Graduate),
f. Type of management (Government/Aided/Private),
g. Type of family (Nuclear/Joint),
h. Fathers’ educational qualification (illiterate/School Education/College Education),
i. Mothers’ educational qualification (illiterate/School Education/College Education),
j. Community (OC/OBC/SC& ST),
k. Fathers’ occupation (Daily Wage/Agriculture/Government Job/Private Job),
n. Mothers’ occupation (Daily Wage/Agriculture/Government Job/Private Job), and

o. Parental Monthly Income (Below Rs.10,000/ Rs.10,001 to Rs.20,000/ Rs.20,001 to Rs.30,000/ Above Rs.30,000)

7. To find out whether there is any significant correlation between the Environmental Attitude and the Environmental Behaviour of B.Ed. student teachers.

8. To find out whether there is any significant correlation between the Environmental Attitude and the Environmental Awareness of B.Ed. student teachers.

9. To find out whether there is any significant correlation between the Environmental Behaviour and the Environmental Awareness of B.Ed. student teachers.

10. To identify the background variables which are contributing to the Environmental attitude of B.Ed. student teachers.

11. To identify the background variables which are contributing to the Environmental behaviour of B.Ed. student teachers.

12. To identify the background variables which are contributing to the Environmental awareness of B.Ed. student teachers.
1.19 HYPOTHESES OF THE STUDY

The followings are the hypotheses formulated for the present study.

1. The level of environmental attitude of B.Ed. student teachers is unfavourable.

2. The level of environmental behaviour of B.Ed. student teachers is negative.

3. The level of environmental awareness of B.Ed. student teachers is low.

4. There is no significant difference between the environmental attitude of B.Ed. student teachers based on the background variables; namely

   a. Gender (Male/Female),

   b. Location of College (Rural/Urban),

   c. Nature of Residence (Hostel/Day Scholar),

   d. Major Subject (Arts/Science),

   e. Educational qualification (Under Graduate/Post Graduate),

   f. Type of management (Government/Aided/Private),
g. Type of family (Nuclear/Joint),

h. Fathers’ educational qualification (illiterate/School Education/College Education),

i. Mothers’ educational qualification (illiterate/School Education/College Education),

j. Community (OC/OBC/SC& ST),

k. Fathers’ occupation (Daily Wage/Agriculture/Government Job/ Private Job),

l. Mothers’ occupation (Daily Wage/ Agriculture/ Government Job/ Private Job), and

m. Parental Monthly Income (Below Rs.10,000/ Rs.10,001 to Rs.20,000/ Rs.20,001 to Rs.30,000/ Above Rs.30,0001)

5. There is no significant difference between the environmental behaviour of B.Ed. student teachers based on the background variables; namely

a. Gender (Male/Female),

b. Location of College (Rural/Urban),

c. Nature of Residence (Hostel /Day Scholar),

d. Major Subject (Arts/Science),
e. Educational qualification (Under Graduate/Post Graduate),

f. Type of management (Government/Aided/Private),

g. Type of family (Nuclear/Joint),

h. Fathers’ educational qualification (illiterate/School Education/College Education),

i. Mothers’ educational qualification (illiterate/School Education/College Education),

j. Community (OC/OBC/SC& ST),

k. Fathers’ occupation (Daily Wage/Agriculture/Government Job/ Private Job),

l. Mothers’ occupation (Daily Wage/Agriculture/Government Job/ Private Job), and

m. Parental Monthly Income (Below Rs.10,000/ Rs.10,001 to Rs.20,000/ Rs.20,001 to Rs.30,000/ Above Rs.30,0001)

6. There is no significant difference between the environmental awareness of B.Ed. student teachers based on the background variables; namely

   a. Gender (Male/Female),

   b. Location of College (Rural/Urban),
c. Nature of Residence (Hostel/Day Scholar),

d. Major Subject (Arts/Science),

e. Educational qualification (Under Graduate/Post Graduate),

f. Type of management (Government/Aided/Private),

g. Type of family (Nuclear/Joint),

h. Fathers’ educational qualification (illiterate/School Education/College Education),

i. Mothers’ educational qualification (illiterate/School Education/College Education),

j. Community (OC/OBC/SC & ST),

k. Fathers’ occupation (Daily Wage/Agriculture/Government Job/ Private Job),

l. Mothers’ occupation (Daily Wage/Agriculture/Government Job/ Private Job), and Parental Monthly Income (Below Rs.10,000/ Rs.10,001 to Rs.20,000/ Rs.20,001 to Rs.30,000/ Above Rs.30,000)

7. There is no significant correlation between the environmental attitude and environmental behaviour of B.Ed. student teachers.
8. There is no significant correlation between the environmental attitude and the environmental awareness of B.Ed. student teachers.

9. There is no significant correlation between the environmental behaviour and the environmental awareness of B.Ed. student teachers.

10. The background variables do not contribute to the environmental attitude of B.Ed. student teachers.

11. The background variables do not contribute to the environmental behaviour of B.Ed. student teachers.

12. The background variables do not contribute to the environmental awareness of B.Ed. student teachers.

1.20 SAMPLE AND SAMPLING TECHNIQUE OF THE STUDY

For the present study, the investigator selected Twenty Four B.Ed. Colleges has been chosen based on the coastal and non-coastal – high pollutional prone areas in selected 21 districts in Tamil Nadu, India. From these twenty four B.Ed Colleges, 970 B.Ed. student teachers were selected as the sample for the study. Random sampling technique has been used for the selection of the sample.
1.21 TOOLS USED IN THE STUDY

Three tools have been used in the present investigation. They are:

- Environmental Attitude Scale constructed and standardized by Haseen Taj (2001),
- Environmental Behaviour Scale constructed and validated by the Investigator (2012), and
- Environmental Awareness test constructed and validated by the Investigator (2012).

1.22 DELIMITATIONS

1. The study was confined only to the B.Ed. Colleges, Situated in Tamil Nadu, India.

2. The sample was confined only to 6 Government, 4 Aided and 14 Self-finance B.Ed. Colleges.

3. The background variables were confined only to Gender, Location of College, Nature of Residence, Major Subject, Educational Qualification, Type of Management, Type of Family, Fathers’ Educational Qualification, Mothers’ Educational Qualification, Community, Fathers’ Occupation, Mother’s Occupation, and Parental Monthly Income.
4. The present investigation was conducted in the major pollution prone districts in Tamilnadu state, India. The pollution hot spot distits along the coastal and non-coastal areas as per the census have been taken for the fixation of the location of the study.

5. Out of the four types of technique of research (survey, observation, interview and sociometry). The present study is delimited to survey technique only.

1.23 A BRIEF RESUME OF THE SUCCEEDING CHAPTERS

A review of related studies has been presented in Chapter- II.

Chapter-III contains the description of the tools used, the sample selected and the statistical techniques employed in this study.

The analysis and interpretation of the data with relevant discussions therein are given in chapter-IV.

Chapter-V contains the summary of findings, recommendations, suggestions and conclusions for further research.