CHAPTER - I

INTRODUCTION
INTRODUCTION

Nature is so fascinating and it embodies the spirit of its creator. The soft green leaf moving gently in the breeze, the drop of dew quivering on the petal of a rose, all are so enthralling. No less in the child with his hazel eyes, silken hair, rosy cheeks, toothless mouth and tender skin. His father, the man, too is very handsome and perhaps most unique creation of God. Unique in the sense that it is man who has made the world so beautiful. Since the appearance of man on the planet he has been trying to evolve newer ways of survival. The story of human progress is woven around his interaction with nature, more and intense use of raw materials and resources of the environment. Man depended, depending and would depend on plants, animals and other natural resources for food, clothing, housing, medicines and what not! Having all the dependence on them too he is the most developed among a large variety in the existence. This unique creature not only interacts with his environment but is also seen as the vital factor in creating working relationships between various things of the environment. But for him nature would not have been so enjoyable as it is. He has converted wild forests into parks, gardens, orchards and cities, and deserves all praise for that. But in doing that, and in his attempts to make life more and more comfortable, he often destroyed forests thoughtlessly, polluted air and water recklessly, despoiled nature ruthlessly. Thus he exploits, destroys and reduces the renewable natural resources, eradicates wild-life and leads his own race to levels leading to catastrophe. The world will be more crowded, more polluted, less stable ecologically and more vulnerable to disruption, if the present
trends of environmental degradation continue. Serious deterioration of agricultural soils will cover world-wide. Atmospheric concentrations of carbon dioxide and ozone depleting chemicals are expected to increase to give birth to many serious diseases. Extinction of plant and animal species will increase along with vanishing their habitats of all the problems, environmental problems are the hardest for human societies to solve because individuals seldom have to pay directly for their contribution to these problems. According to 'The Global 2000 Report' the human conditions will be bleak by the beginning of the 21st century.

One fact we must bear in mind is that the survival of man depends upon how judiciously he manages the earth and maintains the quality of overall environment.

"FIRST EVERYBODY WAS HAPPY........

EVERYBODY WANTED TO HELP THE NEEDY........

THEN EVERYBODY BECAME GREEDY........

FINALLY NOTHING REMAINED"
GandhiJi has rightly said "Nature has enough to satisfy every one's need but not the greed." Similarly in the words of Moris K. Udall "The more we exploit nature, the more our options are reduced until we have only one to fight for survival". It is indeed a wonder how we are bearing the onslaughts of ecological blackashes in our environment. We are reaching the limits of tolerance on most fronts and any greater onslaught might result in mass scale sudden death, disablement and crippling, and slow death of people in several parts of world.

Its all man's own making that the Earth planet has become immeasurably unsafe. In many ways, the planet Earth is a dangerous place to live. Natural disasters, floods, droughts, earth quakes, volcanic eruptions and tempests - are becoming more common, so too are large - scale industrial accidents and natural disasters are no longer as natural as they once were : human actions are not only making them more common but are exposing more and more people to their effects. Only one third of the earth is now safe for life., The air we inhale is not only polluted but has the toxicity of carbon-dioxide emitted by the industry, man has put for his need and comfort. Environmentalists are complaining that world's air today contains 25% more CO₂ than it did in 1958, in past 125 years, the earth's surface was warmest in 1990; six of the seven warmest years on record have occurred since 1980; by the middle of the next century, the resulting warming could boost global mean temperature from 3 to 9°F. The water we need is either just scarce for a large population in Asia and Africa or is contaminated causing killer diseases among the poor, who constitute 80 percent of the world's
population. The earth is constantly burdened with increasing population load - it has touched 5.4 billion mark with a disturbing prospect of an annual addition of 93 million. And yet there is a constant shrinking of available land for cultivation. It also suffers from increasing degradation with loss of top soil. This has lead to short falls in food grains production causing hunger and poverty.

The imbalance and inequities in the world are too appalling. The earth's resources are eaten away by just 20 percent of the world's population, even though there is "only one earth." The modern man needs to a fresh and new mind to love and appreciate what is happening around him. We don't need a new technique or a new philosophy or a new drag to see things of nature. He should also realize that he is a part of nature and should not destroy himself in his greed to dominate nature itself. Somehow or the other, he has to make peace with animal and plant communities for his own survival. Otherwise, he has to pay a heavy penalty just like the 'DINOSAUR' for its inability to adjust to its environment.

Man's dream for the future is machine oriented civilization. This copied with his greed is definitely going to have an adverse effect on his natural environment, soul and spirit. There is a general belief - more people, more technology which if followed blindly, as is being done, is to flirt with ultimate disaster. Now the time has come when he should be careful. If he does not correct himself and sober down, he is bound to find himself in an irreversible predicament, in an ecological catastrophe, which will bring an end of the Homosapiens on this lovely planet of ours.
Is there a hope for mankind? This is a question that is uppermost in all sensitive and perceptive minds. The question comes not only because of the fear of the approaching doomsday. It is also because man has a choice, a clear choice to avoid the catastrophe and choose the path of sanity. He stands today at a turning point, not a point of no return. A point has been reached in history when we must shape our actions throughout the world with a more prudent care for their environmental consequences. Through ignorance or indifference we can do massive and irreversible harm to the earthly environment on which our life and well being depended. Conversely, through fuller knowledge and wiser action, we can achieve for ourselves and our posterity a better life in an environment more in keeping with human needs and hopes.

It is difficult to place the beginning of modern concerns about the environment at any one time or within one country. Probably, the historical development of environmental concern has no one single root, it is polyphylactic in origin. Lowe and goyder (1983), consider the first national environmental group to be The British Commons, Open space and Footpaths Preservation Society, dating back to 1865. However one of the earliest historical evidences of organized environmental action can be traced back to an even earlier 17th century Mass movement of the people in some villages of the Thar Desert (India). Inspired and organized by local religious leaders, the people sacrificed their lives to save trees from wanton feeling (Cowshish, 1985). Lowe and Goyder (1983) identify major periods when concern for the environment was being articulated
in the west.

All this led to an awakening in the world that a new global partnership must be evolved among the nations, both industrially advanced and developing ones for sustainable development. It was in this background that a world conference was held at Stockholm in 1972 to express concern on the depletion of the resources in forest, mineral wealth, marine life and other natural wealth. It was at this conference Mrs. Indira Gandhi (1972) at the plenary session voiced so eloquently "The modern man", she observed, "must re-establish unbroken link with nature and wild life. He must again learn to invoke the energy of the growing things and to recognize as did the ancients in India, centuries ago, that one can take from the earth and atmosphere only so much as one puts back into them". The World Development Report goes on to say that environmental policy reforms and institutional changes are thus likely to be powerfully redistributed and are required to bring out accelerated development and better environmental management. The obstacles are great. Nevertheless, the present time is unprecedented in its potential for change. The growing recognition of the importance of environmental concerns, the rapid introduction of economic reforms programmes around the world and the trend towards democratization and participation in the development process all point in the right direction. The United Nations Conference on Environment & Development (UNCED) - The "Earth Summit" in June, 1992 has provided opportunity for the world's nations to commit themselves to an agenda of reform. It is essential that the energies that have been unleashed by UNCED not be dissipated but rather be channelled [7]
toward addressing those environmental problems that most urgently threaten development.

For these purposes, there is an urgent need for generating an awareness of environmental problems in view of growing conflicts between short and long term goals of development. **Awareness tends to lead to analysis of issues. Analysis promotes action and action through education is fundamental to the fostering of a healthy and dynamic awareness analysis - action chain.** The role of education in replying to the challenges of environmental problems and disturbances impressed firmly in our social thinking, the key to their solution is already in our hands - Environmental Education and Training.

**LET US REMEMBER THAT MOTHER EARTH, IS INDEED ONE CIVILIZATION RESERVE OF ALL HUMANKIND, THE ONLY ONE WE KNOW OF IN OUR PLANETARY SYSTEM AND SHOULD NOT FORGET THAT WE HAVE NOT INHERITED IT FROM OUR FATHERS, BUT HAVE BORROWED IT FROM OUR CHILDREN." SO WE ALL, THE LEADERS, THINKERS, SOCIAL REFORMERS, SCIENTISTS, ENVIRONMENTALISTS & TEACHERS JOIN THE HANDS "TO SAVE THE EARTH AND PLEDGE TO CARE FOR ITS ENVIRONMENT SO AS TO SHARE ITS BLESSINGS.'
[1.1] **EMERGENCE OF THE PROBLEM**

Education has a major role to play in the construction of the future world. Despite the fact that future is unpredicatable and uncertain up to a point, it must be acknowledged that spectacular development of science and technology has endowed us with very powerful means to mould our future. The aim of futurology is not to foretell the possible future but to prepare for a desirable future. The progress of science in particular, and the existence of contemporary world problems are beginning to act as common denominators in determining the concepts of education.

The future of any country is inextricably linked with its educational system. Education is one of the most important factor in achieving rapid development and technological process. It can bring about the awareness of rights and responsibilities in every individual and the community as a whole. Realising the potential of education as a powerful tool to reshape and reorient the thinking of individuals, schools all over the world are providing opportunities to their students to know more about the environment and the underlying ecological principles. Education system are attempting to respond to the need to know about the environment, to prevent environmental degradation, and to ensure, at least reasonable quality of environment for future generations.

A society or a country is nothing but an extension of individuals. Hence a very dynamic programme on Environmental Education (EE) is needed to cater school children, adult illiterates, to college, and university students and other section of society. **Special emphasis is needed on children because educating a child is educating a [9]**
Inaugurating the Sixth World Environment Congress, (5th June, 1988) the former President Shanker Dayal Sharma said "To my mind, all problems of society can be solved by educating young children about the need to protect Mother Earth.

The significance of the role of education as a life-long process to make the people aware of environmental problems and issues and to create among them a sense of commitment to action for protecting the environment from future deterioration is also being recognized the world over. If education fulfills its expected role, and let us hope it will, the indiscriminate use of natural resources will be checked and sustainable development with environmental safeguard ensured. For the same the efforts are being made at international as well as at national levels."

[1.1.1] INTERNATIONAL EFFORTS

World educators and environmental specialists have repeatedly pointed out that any solution to the environmental crisis will require environmental awareness and understanding to the deeply rooted in the educational system at all levels. Global activities in the field of EE took concrete shape in early seventies through various international consultations and conferences. Thanks to the efforts of UNESCO-UNEP International Environmental Education Programme (UNIEEP) Environmental Education (EE) has been incorporated as an important component in the curricular subjects at the elementary, secondary and tertiary education levels, both formal as well as non formal in all the countries. Environmental Education is a recent education intervention to cope with the problems of environment
The International Environmental Education Programme (IEEP) was put into operation in the year 1975, which produced a historic document which is known as Belgrade Charter. It has served as a global framework for Environmental Education development. The first phase of this programme saw several international activities, which eliminated in the World's first Intergovernmental Conference on Environmental Education in Tbilisi, USSR in the year 1977. The declaration and recommendations of this conference provided the framework, principles and guidelines for Environmental Education at all levels and for all age groups inside and outside the purview of formal education. In order to give shape to the recommendations made in this conference, well define objectives were selected for IEEP and definite means and priorities were fixed to fulfill these objectives. Further Regional Workshop on Environmental Education was held in Bangkok in Sept. 1980 and made specific recommendations for implementing Environmental Education programme in Asian Region. In 1981-82 the Joint UNESCO-UNEP International Environmental Education Programme (IEEP) conducted a survey to determine the present needs and priorities in relation to Environmental Education and Training. In November 1986, UNEP organised a Regional Meeting of Experts in Bangkok to develop a programme of action for Environmental Education and training in Asia and the Pacific. During 1981-90 ASEAN Workshops on Environmental Education were organised by UNESCO PROAP. In addition to training of about 250 educators, science teachers and supervisors from the participating ASEAN countries, one major outcome was the "Source book in

[11]
Environmental Education for Secondary School Teachers which can be used as reference material by trainers, educators, curriculum and textbook specialists in Environmental Education. A set of A.V. materials has also been developed by UNESCO with the help of IPST Bangkok to accompany the source book. To achieve the objectives of Environmental Education e.g. Awareness, Attitude, Skills and Participation, significant work has been & being done at international level.

[1.1.2] NATIONAL EFFORTS

For the people of India environment conservation is not a new concept. The Indian tradition of love, respect and reference for nature, goes back to time immemorial. Historically, the protection of nature and wild life formed an ardent article of faith, reflected in the daily lives of people and also enshrined in myths, folklore, religion, art and culture. This tradition has been handed over the ages becoming an integral part of Indian psyche. But India has always tried to keep pace with world trends in Environmental Education. Even in the pre-1972 era in the primary classes I-V, science concepts were interwoven with the immediate environment of the child. Environmental studies at the primary level has been widely accepted by the states and union territories. At the upper primary level a unified science course has been developed by N.C.E.R.T. combining physics, chemistry & biology. This enabled Environmental Education related concepts and problems to be dealt with in a more holistic and integrated manner. In the current curricula and textbooks developed according to the directives of National Policy on Education (1986), HRD Annual Report (1993-
prescribes environmental protection and conservation of natural resources as a core element of the National curriculum framework. A centrally sponsored scheme "Environmental Orientation to School Education" was initiated in 1988-89. States / UTs are provided assistance under the scheme for undertaking various activities on project. The project activities include review and development of curricula of various disciplines at primary, upper primary, secondary, senior secondary levels with a view to infusing environmental concepts therein, review and development of textbooks of 'Environmental Studies' at primary and upper primary levels; development of teaching learning materials etc. An outlay of Rs. 10,00 crore has approved for continuance of the scheme during 8th plan.

It is clear that the issue today is not whether EE should form an essential component of education, the issue is how to do it effectively. This can be done by formal and non-formal types of educational aids, curriculum development etc. without increasing burden on children. Any organised teaching-learning situation can be basically constructed as consisting of a specific curriculum which, in turn, would include the syllabus, the instructional materials and the transactional strategies. The ultimate efficacy of the learning situation would thus be dependent to a large extent on the relevance of each of these components in the context of the learner and the learning outcomes.

School Curriculum as the Vehicle of Social Change- The NCERT document. "National Curriculum for Elementary and Secondary Education 1988" has visualised the school curriculum as a vehicle for social change. It observed, "In order to fulfil its role as a vehicle for social change, the school curriculum has to be dynamic
enough to respond to the changing national priorities and long term developmental goals of the country." Curriculum is expected to change the values and attitudes of learners and create in them an urge for necessary modification for social change.

The evaluation of curriculum material occupies an important place as an the provision of effective meaningful need based and rational curriculum material depends upon the growth of the learners. It has therefore to be assured that the curriculum materials are of good quality. At the same time, they should be acceptable both to the learners and the teachers. They should be of practical use and fit well in the existing educational setting.

The starting point for curriculum construction must be the desire to bridge the gulf between the school subjects and the rich and varied activities, that make up the warp and wool of life. The curriculum must be linked with life and give our students a real understanding of a insight into the world outside the school into which they have to enter.

The Discussion Guide for UNESCO Training Workshop on EE (1980) has provided two conceptual models of the EE Curriculum: one is interdisciplinary or infused, the other is a multidisciplinary or infusion model.

In India, NCERT has adopted the multidisciplinary approach at primary level. Multidisciplinary approach includes the infusion or integration of established disciplines wherever appropriate. But objectives of EE can not be realized simply be infusing environmental concepts in the existing curriculum. The effective infusion of EE curriculum into school programme is dependent on various factors.
Fig. 1.1 Conceptual Models of the EE Curriculum
One of the major variable that conditions and controls the quality of school education is the quality of textbooks.

The process of education in most of schools in India and even abroad, can be summed up in one phrase, "As the textbook, so the teaching learning." This is because of many reasons. The textbook plays a crucial role in generating educative interactions in the classroom between teacher and learner. The text-book is also used for self learning by individual students either in class-room or at home. The textbook assumes a place of paramount importance in the field of formal education.

Dr. D.S. Kothari has rightly said, "The question of Text-book is the most important and urgent one for our country. Energetic action on state and national basis is required to progress the preparation of high quality school Text-book. In words of Voltaire"All the known world, excepting savage nations, is governed by books."

In the Indian situation, at the primary stage text book continues to be the most essential and in majority of cases the only aid in the hands of the teacher and learner through which the given curriculum is transacted. The situation consequently places a heavy responsibilities on the quality of text-book for ensuring effective teaching-learning interactions and outcomes.

Having recognized this fact, NCERT has undertaken several programme to improve the quality of school textbook. Center of Environment Education, Ahmedabad was established in 1984 to meet country's need for creating high quality educational materials
and for propagating awareness among children and Urban/Rural Communities. The educational material developed by the centre includes guide books and documents on country's natural resources. Beside these efforts several researches have been carried out in India.

For a glance few of them are quoted below under two sections.

Section I - Studies Related to Environmental Awareness:

Johoda, Saxena, Rajput (1980) - Efficacy of teaching through environment of primary level.


Pai, S.G., (1981)- Preparation and tryout of curriculum in Environmental studies leading to lifelong education for college students.

Joshi, B.P., (1981) - Development of science education for upper primary classes based on the environmental approach.

Saxena et. al. (1981) - Development of environmental awareness test for the children of grades 3, 4 and 5.


Eshan, MD.A (1985) - An evaluative study of the Environmental Education programme in primary schools of Bangladesh.

Madhyastha (1988) - Use of environment both as a mean and end of education.


Section - II - Studies Related to Text-Book Evaluation :-

Kher, S.V. (1972) - A critical evaluation of History text-books for standard VI.

Ponkshe, D.B. (1972) - A critical evaluation of Geography textbooks of standard VI.

Pattabhiram G., (1973) - An evaluation of Nationalized Textbooks for higher classes in social studies in secondary schools of Andhra Pradesh.

Rastogi, K.G. and Others (1975) - Preparation and evaluation of Textbooks in Mother Tongue - Principles and Procedures.

Chaudhari U.S. (1976) - An evaluation of Nationalized Hindi Textbooks (Class I through VIII) of Madhya Pradesh.

SCERT (Andhra Pradesh 1980) - Evaluation study of textbooks in environmental studies of classes III and V based on revised curriculum in science.


Kidwai, Zeenat (1991) - Development of an environmentally oriented [18]
It is clear from above facts that environmental awareness in education have not been studied in correlational approach; and the evaluation of textbooks of different subjects has also been taken in research studies intensively but not a single study is based on the evaluation of textbooks of various school subjects in the perspective of environmental awareness. This particular educational research area needs to be intensified and whole education pattern should be environment oriented, which requires innovative and holistic approaches. Realizing the need of the time, it therefore, becomes all the more pertinent that this important sector of education related to human life must be thoroughly investigated and we should think globally and act locally, and therefore, the researcher felt the need of evaluation of textbooks in the perspective of environmental awareness at primary level. The problem may formally be stated as:

[1.2] STATEMENT OF THE PROBLEM
"Critical Evaluation of Textbooks of Primary Classes in the Perspective of Environmental Awareness."

[1.3] JUSTIFICATION OF THE PROBLEM
There is a genuine concern that in spite of international and national efforts, including those of the IEEP and other organizations the progress of EE on the world scene does not present a very satisfying picture. Today, it is not a question of what we can do to preserve environment, but of what we must do for successful environmentalization of school education.

Primary education is that foundation on which construction of strong
and beautiful building of education depends. The primary stage is considered to be a sensitive stage for learning and for forming attitudes. Once the correct attitudes and values are implemented in the impressionable minds, they will carry them in later life. Many psychologists support early childhood as a significant time, when lifelong habits & attitudes are formed. *Bloom's (1964) Stability and Change in Human Characteristics* argues that the human organism is most sensitive to environmental inputs during periods of rapid growth which occur in the early years (Zigler and Berman 1983). EE must be instilled in children when they are very young; a late start makes it difficult to break through already formed habits and attitudes, and the stereotypes and images which the learner has absorbed from his daily life, with the help of mass media (UNESCO, 1985), Miller (1975) found that a significant portion of the development of attitudes towards environmental conservation and pollution happens at elementary school level. That is why, imparting EE to primary school children assumes great significance.

Piaget has identified four successive stages which he believes are the principal means of knowing his environment -

- Sensory Motor  0 - 2 years
- Pre-operational  3 - 8 years
- Concrete operational  9-12 years
- Stages of formal operation  13-15 years

At primary level children would be divided between second and third stages. This is the best suited period for generating environmental
awareness because the children are perceptually oriented, curious, active and they can perform elementary logical operations. Beside this language is also very important at this stage because when children try to think to the right word for the meaning they wish to convey and in that process they increase their own understanding of the ideas involved. For this reason, much efforts should be made in the course of early exploratory words to the concrete objects they find and handle. Textbooks can play vital role to utilize these characteristics of primary school children for generating environmental awareness among them. Therefore, there should be a thorough review of textbooks of all the subjects and efforts should be made to make them environment oriented at primary level, so that the appropriate attitudes, values, feeling and worthy motives towards the environment can be inspired, instilled and nurtured. Researcher was quite hopeful that the findings would contribute in the achievement of goals of Environmental Education.

[1.4] DEFINITION OF THE TERMS

[1.4.1] CRITICAL -
Based on deliberate balanced skillful judgement as to truth, merit etc.

[1.4.2] EVALUATION -
The process of ascertaining or judging the value or amount of something by careful appraisal.

[1.4.3] TEXT-BOOKS-
A text-book is any manual of instruction, a book containing a presentation of the principles of the subject, used as a basis of
[1.4.4.] PRIMARY CLASSES

Formal system of education under which education is imparted from Class - I to V in the schools.

[1.4.5.] PERSPECTIVE -

The relative importance of facts or matters from any special point of view; also their presentation with just regard to their proportional structure.

[1.4.6] ENVIRONMENT -

It is a word which describes in the aggregate, all extrinsic forces, influences and conditions which affect the life, nature, behaviour, growth, development and maturation of living organism.

[1.4.7] AWARENESS -

Awareness means knowledge, understanding and comprehension of the various components of environment, their interdependence and sensitivity towards their necessity of sustain life.

[1.5] AIMS AND OBJECTIVES OF THE STUDY

1. To analyze the content of prescribed text-books of primary classes of different boards of education - class-wise & subject - wise in relation to environmental concepts.

2. To study the opinion of teachers about the suitability of content (in relation to environmental awareness) of text-books prescribed by different boards of education for primary classes.
3. To assess the environmental awareness among the beginners of class VI.

[1.6] DELIMITATIONS OF THE STUDY

[1.6.1] SAMPLE

1. The study was confined to 25 schools of Agra City, out of which 12 schools were of UP board, 08 of CBSE and 05 were of ICSE.

To analyze the content of text-books, teachers teaching to class III, IV & V were only included in the first sample.

2. Second sample was restricted to beginners of class VI of 10 accidentaly selected schools from the list of already selected 25 primary schools. by using stratified random sampling technique.

[1.6.2] CONTENT -

For the critical evaluation the text books of Class III, IV & V of all the major subjects (Hindi, English, Social studies, Science) prescribed by U.P., CBSE & ICSE boards were included and only thematic (content) part of books was taken in to consideration.

[1.7] SELECTION OF THE SAMPLE -

For the purpose of the study two kinds of population were considered. The section of samples from the population were done in following manner-

1. First sample included 182 teachers of 25 schools to seek their opinion about the content of text-books of various subjects prescribed in their institutions.
For the selection of teachers, first of all 25 schools were selected through stratified random sampling technique. The design of stratified sample is as follows -

![Diagram showing stratified sampling]

**Fig. 1.7.1 Selection of Schools**

All the teachers of selected schools were included to collect the informations about the content of text-books prescribed in their schools.

2. Second sample constituted beginners of class VI. For this purpose, 10 schools were accidently selected from the list of already selected 25 schools. The selection of these 10 schools was done in following manner -
Fig. 1.7.2 Selection of Students

[1.8] METHODS

Descriptive survey method and content analysis method were employed.

[1.9] TOOLS

To collect the relevant data according to aims and objectives of the study readymade tools were not available therefore researcher prepared the following tools -

1. Analysis sheet for critical evaluation of text-books.

2. Opinionnaire to seek the opinion of teachers about the content given in the text-books of various subjects prescribed by different boards.
3. Environmental Awareness Test (EAT) to assess the environmental awareness of beginners of Class VI.

[1.10] TECHNIQUES -

Following statistical techniques were used for the qualitative and quantitative analysis of data according to the objectives of the study-

1. For analysing the content of textbooks, descriptive statistics was used.

2. Descriptive statistics was also used to study the opinion of teachers about the content of text books.

3. For the assessment of environmental awareness among the beginners of class VI, descriptive as well as inferential statistics were used.