



**SOCIAL AND ECONOMIC
CHANGE MONOGRAPHS 10**

**ROLE OF NGOs IN PROMOTING
NON - FORMAL ENVIRONMENT
EDUCATION: A CASE STUDY**

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The Institute for Social and Economic Change (ISEC) is engaged in interdisciplinary research in analytical and applied areas of social sciences, encompassing diverse aspects of change and development. ISEC works with central, state and local governments as well as international agencies by undertaking systematic studies of resource potential, identifying factors influencing growth and examining measures for reducing poverty. The thrust areas of research include state and local economic policies, issues relating to sociological and demographic transition, environmental issues and fiscal, administrative and political decentralisation and governance. It pursues fruitful contacts with other institutions and scholars devoted to social science research through collaborative research programmes, seminars, etc.

The Social and Economic Change Monograph Series provides an opportunity for ISEC faculty, visiting fellows and PhD scholars to disseminate their ideas and research work. Monographs in the series present empirical analyses and generally deal with wider issues of public policy at sectoral, regional or national level.

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Foreword

As an environmental economist, I have always been puzzled by one issue: why don't we think fundamentally and use environmental education as a long-term strategy to reduce the anthropogenic forces affecting natural and ecological resources. This monograph brings out evidences from a field study on the experience of the NGO sector in this regard.

The first question posed in this book is about the role of environmental education. It was in 1982 that the UNCED conference drafted Agenda 21, which included some specific programmes on environmental education. Since then, both internationally and nationally, several concrete programmes were initiated at two levels — as an integral part of curriculum in different stages of formal education, and in various forms of non-formal education — to create public awareness, capacity building in dealing with the problems and so on.

It is in this context that the role of non-governmental organisations is equally important. A large number of them, spread all over the country, have been enabled by the governments and bi-lateral and multi-lateral donor agencies to reach out to the different sections of the society, be it a slum, a market place or urban complexes. Their objectives include creating awareness about environmental hazards and deteriorating situation, educating people on the need for social movements to abate the problems, reducing conflicts, and getting associated with formal school education system.

This book, based on an intensive field study carried out in the city of Bangalore, draws some rich lessons for designing further improvements in the process of NGO involvements in environmental education.

Prof. K. Yeshodhara carried out the study during her stay at ISEC. The financial support extended by Sir Ratan Tata Trust has enabled the research study and its publication. I am sure this research work will find a useful shelf space in the minds of environmentalists as well as policy-makers.

December 2005
Bangalore

Gopal K Kadekodi
Director, ISEC

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PREFACE

Sustainable development, the slogan of the day, calls for a paradigm shift in our educational system right from the school level to the university level. In fact, it cannot be thought of achieving a sustainable way of life without an appropriate educational system designed to internalise the principles of sustainability in the life and work of our youth. Recognising the role of education in promoting sustainable development and environment protection, the concept of Environment Education (EE) has emerged and is considered as an integral part of both formal and non-formal systems of education. While EE in formal education system is important in shaping the knowledge, values and skills of students, the Non-Formal Environment Education (NFEE) which involves people in the capacity of individual or organisations, is essential for the creation of public awareness about environment conservation, development of primary skills of sustainable use of the environment and building up eco-friendly attitudes and values.

If the environmental message is to reach the wider section of the population, it is very essential to promote NFEE and NGOs have to play a distinctive role in this direction. At present, many NGOs are working in the direction of conservation and sustainable use of environment. But, the relevance and effectiveness of the programmes of NGOs in relation to the goal of EE needs to be addressed. It is in this context that it was felt imperative to study the role of NGOs in promoting Non-Formal EE, and their support to school work in the direction of achieving the goals of EE. Thus, the present study was taken up to identify the NGOs involved in NFEE and to make a case study of some of them in Bangalore District (Urban), the administrative centre of Karnataka State.

Working on the project entitled “Role of NGOs in Promoting Non-Formal Environment Education – A Case Study” in the Institute for Social and Economic Change, Bangalore, was a delightful and enriching experience. At the very outset, I place on record my sincere gratitude to Sri Ratan Tata Trust (SRTT) which extended the privilege of a Visiting Fellowship to me to work on this project at ISEC. My sincere thanks are due to Dr. Gopal K. Kadekodi, the Director of the Institute, for extending all possible support. I am indebted to Dr. A. S. Seetharamu, Professor and Head, Education Unit, for his continuous guidance, unbounded support and valuable suggestions in completing the study.

My sincere thanks are also due to Prof. T. K. Jayalakshmi, Dr. Shivananda, and Dr. M. D. Usha Devi, who extended their co-operation in

validating the tools constructed for the study. Several Scholars have contributed to strengthen this study, both in the initial and final stages of the report. Dr. Madhushree Sekher deserves special mention here. Smt. B. K. Kalavathi gave me very meaningful assistance in gathering data for this study. All the NGOs, especially ATREE, Eco-Watch and YMCA, gave full support in the completion of this work. All the key informants, schools, Heads, teachers, students, participants and public who willingly extended their co-operation in data collection are gratefully remembered. To Shri Ranganathan, former Registrar of the Institute, and the administrative staff of ISEC, Computer Centre, Library and many others who extended their co-operation directly or indirectly, I remain indebted.

K. Yeshodhara

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Dr. D. Rajasekhar
Series Editor

CHAPTER I

INTRODUCTION

1.1. Introduction

Human beings are the most dynamic elements in the eco-system, because it is they who alter most of the other elements in the environment. Their craze for achieving economic and industrial development over the ages has centred upon the essentials of the earth's environment and ecological systems. In addition to the industrial revolution, unprecedented scientific and technological revolution has brought about disastrous changes in the environment leading to environmental degradation/crisis. The speed and nature of environmental change (particularly man-induced change) in recent years have resulted in a series of environmental degradation of global magnitude - including population explosion, energy resources and utilisation, the provision of food supplies, exploitation of raw materials and environmental pollution. This environmental degradation/crisis has become a serious issue as it threatens not only the tranquility of people's existence, but their health and lives as well.

There has been a phenomenal growth of interest in the last two decades in the quality of environment, disruption of earth's natural ecosystems and depletion of resources. Pollution, ecology and environment have been projected from the cloistered world of science into the forefront of public debate, and all aspects of man's use of his environment have been widely discussed with passionate interest. As such, numerous conferences, seminars and workshops have been held to work out the possible strategies to protect the environment and it has been realised that with the fast growth of developmental strategies all over the world, environment has become a major casualty. It is also realised that development cannot be halted but it should be made as sustainable as possible, and should not exceed the holding capacity of at least the immediate environment. To achieve this goal in the long run, educators and activists all over the world have come to accept environmental education as an important means of addressing the various issues which are raised from time to time. However, these efforts have to be updated and remodelled to suit both developmental needs and the needs of the future generations that are going to inherit this planet.

1.2. Environmental Education - An Overview

Global Scenario: The beginning of modern environmental movement can be dated from the publication of Rachel Carson's *SILENT SPRING* in 1962.

This gave a foretaste of the current environmental scenario. Then, the United Nations Conference on human environment which was held at Stockholm in 1972, brought out the declaration: “to defend and improve the environment for present and future generations has become an imperative good for mankind”. The concept of Environmental Education (EE) and declaration of World Environment Day on 5 June, every year, emerged from this conference; United Nations Environment Programme (UNEP) was set up. In response to one of the recommendations of the Stockholm Conference, UNESCO and UNEP launched an International Environmental Education Programme (IEEP) in 1975 and an international workshop on EE was held at Belgrade. The Belgrade Charter (1975) proposed a number of guiding principles for EE programmes.

In 1977, the first Intergovernmental Conference on EE was held at Tbilisi, USSR, and this resulted in the clarification of the objectives and the guiding principles of EE. Then, the UN set up the World Commission on Environment and Development, called Bruntland Commission in 1983 and submitted its report ‘Our Common Future’ (Bruntland Report) in 1989, which defined sustainable development as development that met the needs of present generations without compromising the ability of future generations to meet their own needs. Further, the UN Conference on Environment and Development 1992 (Earth Summit) and Johannesburg Summit 2002 on Sustainable Development (World Summit) also emphasised the global actions for sustainable development, defining rights and responsibilities of the States towards this end.

National (India) Scenario: Concern for nature and natural resources is not a new concept for Indians. Admiration for nature and the urge to conserve and protect it has been a part of our civilisation. India’s wealth of literature, scriptures and folklore are replete with examples which show that our ancestors were environmentally conscious and advocated concepts of sustained usage of resources through many social customs, myths, taboos, traditions and religion. Thus, in the traditional society, EE was an integral part of learning. However, with the onset of industrial revolution resulting in the alienation of societies from natural environment and with changing social relationships, this kind of education has ceased to be a part of the natural learning process.

Unrestricted and indiscriminate exploitation of environmental resources necessitated by population growth, poverty, illiteracy, filthy politics and lack of awareness and values among people in India has created ecological imbalance resulting in environmental problems, different types of

pollutions and other kinds of ecological disorders. This environmental crisis may become more pronounced in the coming days because of lack of concern for the common good and the absence of a sense of responsibility for sustaining a balanced eco-system. Therefore, what is required today is education for the people and their reorientation towards the desirable attitudes and values, specially those that will lead to a greater concern for preserving balance in the eco-system, besides teaching them how to save the environment from further degradation. After the emergence of the concept of Environmental Education (EE) as a new dimension in the educational (both formal and non-formal) system (Stockholm Conference 1972), India also recognised the significance of EE in environment protection, took initiative in this regard and marched ahead to put it into practice.

Then, the National Policy on Education 1986 and 1992 emphasised the need for EE as an integral part of the curriculum at all stages of education. NPE 1986 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 inform teaching in schools and in colleges. This aspect will be integrated in the entire educational process”. The policy visualises a national curricular framework, which has a common core and includes several elements having a direct bearing on the natural and social environment of the pupils. These core areas are expected to occupy a place of prominence not only in the instructional materials but also in the classroom and out of school activities. The Department of Education, Ministry of Human Resource Development (MHRD) took initiative for the integration of EE into the formal educational system at all levels and visualised a national curriculum framework, which contained a common core of EE. While the National Council for Educational Research and Training (NCERT) had to take care of this at the school level, the University Grants Commission (UGC) was responsible at the college/ university levels.

Further, the responsibility of developing policies and strategies for the creation of awareness amongst all the people about environmental issues through non-formal methods was entrusted to the Ministry of Environment and Forest (MOEF). Some of the programmes of the MOEF, which aimed at creating public awareness were: National Environment Awareness Campaign (NEAC) -1986, Centres of Excellence on EE (CEE Ahmedabad-1984 and CPREEC Chennai-1988), Paryavaran Vahini –1992 (discontinued at present) and Eco-clubs 1993. Recently (1998-1999), this Ministry initiated the Environmental Management Capacity Building (EMCB) project for implementation of EE under the school system. India joined the Global

Learning and Observations to Benefit the Environment (GLOBE), an international Science and Education programme during 2000. This programme, which united students, teachers and scientists all over the world, was aimed at school children. About 100 schools spread over different parts of the country are already functioning under this programme.

1.3. Context of and the Need for the Study

A sustainable way of life calls for reorientation of our production systems and consumption patterns, so that development can be economically efficient and ecologically sensitive. This calls for a radical change in the way we think, live and work. It, therefore, goes without saying that sustainable development requires a paradigm shift in our educational system right from the school level to the university level. In fact, one cannot think of achieving a sustainable way of life without an appropriate educational system designed to internalise the principles of sustainability in the life and work of our youth.

Because of the government initiative to make EE an integral part of formal education through its national curriculum framework, considerable work is being done in the direction of integrating environmental concepts into the existing curriculum, developing new strategies, preparing instructional material and providing training to teachers for the effective implementation of EE in the formal system. The relevance of EE curriculum, strategies and methods of teaching EE and their effectiveness are being researched much.

Children are the architects of the country's future. Hence, it is very important to note that Environment Education started at the school level will have to become, over a period of time, a way of life. This is possible only when we aim at the development of certain values among children, youth and adults, irrespective of their social and economic problems. Environment Education should not only create consciousness but also this consciousness should be translated into coherent behaviours in which collective action finds a fundamental solution for the problems related to environment. While Environment Education in formal education system is important in shaping the knowledge, values and skills of students, use of Non-Formal Environment Education which involves people in the capacity of individual or organisation is essential for the creation of public awareness about environment, development of primary skills of sustainable use of environment and building up environment-friendly attitudes and values. Thus, in order to achieve the objectives of EE, the formal EE should be supplemented by the non-formal EE.

It was realised in the seventies that no government action would succeed unless the values which the people cherish were in accordance

with the need for the protection of environment, because it was not only the organised activities of the government that contributed to the degradation of the environment; but also everyday actions of all of us as individuals also contributed quite significantly to this. Reversing environmentally harmful life-styles, attitudes and values of the people as well as unsound development policies of the government are inherently complex and politically difficult tasks, which cannot be achieved without the whole-hearted support of the public. It is in this context that Non-Formal Environment Education and creation of public awareness assume great significance. It should be noted that the chief objective of Non-Formal EE is, therefore, very broad and the target groups it has to cover are varied.

Community awareness and public sensitivity cannot be achieved overnight, nor can it be a one-time exercise. Special programmes focusing on specific and varied target groups on a sustained basis are essential to create environmental awareness at the community level. If the environmental message is to be spread to reach the wider sections of the population, including weaker sections like women, slum dwellers, rural youth, non-student youth and public, in general, NGOs should join hands with the government to organise Environmental Education programmes through non-formal system. They can play a distinctive role in promoting EE at large.

It is very clear, the government, in spite of having sufficient resources, has failed in its efficient utilisation due to lack of people's participation, innovative models, cost-effective strategies and so on. It is in this context that the relationship between the government and NGOs has received some attention as the latter have comparative advantages in ensuring people's participation in development programmes (Wils 1996; Rajasekhar and Reddy 1997; Rajasekhar 1998). Despite NGO weaknesses such as spatial limitation, allegations on their accountability and constraints in working at micro and macro levels, they have been gaining importance in service delivery, have become a prominent part of civil society and collaborate with the government at various levels. Since the late 1980s, the quantum of government assistance channelled for development through NGOs has increased significantly. As such, the government has sought the support of NGOs and other organisations/institutions for the effective implementation of EE programmes.

The review of research in the field indicates that if the environmental message is to reach different sections of the public, organisations other than government bodies should play a considerable role (Aguilar 2001; Betsill 2001; Ganesh 2000) in developing environmental awareness (Nair 1994)

and multi-disciplinary action programmes (Mahadevan 1995) to turn them into environmentally conscious citizens and make 'Mother Earth' a better place to live in.

NGOs have done formidable work concentrating on environmental issues like that of the ENGOs (Betsill 2001) rather than having divergent work areas like other social and economic issues (Edward and Hulme 1992) and a bigger geographical area. It is also found that there are overlapping work areas (Hills 2001) from which a lot of human energy and resources are wasted. Hence, this calls for a networking of NGOs adequately (Edward and Hulme 1992). These locally based and basically autonomous, volunteer-run, nonprofit groups are generally neglected by mainstream nonprofit sectors (Smith 1997) which affects their effective functioning. Further, when support is provided to such groups, they can function better and support their continuous EE programmes which would make a qualitative difference (Harris 1998) than the ones having stop-gap programmes here and there due to the lacunae. But, still membership in a voluntary nonprofit organisation signals a higher participation in giving and volunteering (Hodgkinson and Weitzman 1996), though mass society theorists have long since argued against the importance of grassroots NGOs in modern society and feel that their individuality will get lost in urban anonymity facing a massive government (Kornhauser 1959; Putnam 1995; Uslaner 1995).

Though NGOs have contributed greatly, Hills (2001) feels they suffer from various weaknesses like absence of an integrated goal-oriented strategy, over-reliance on 'top-down' campaign-based approach, failure to establish explicit linkages with the concept of sustainable development and ground initiatives at the local neighbourhood and community levels, and preoccupation with financial inputs provided to support this work at the expense of effective monitoring and auditing of project outputs and benefits. Hence, amidst all these inadequacies, Au (1996) points out that effectiveness has been a point of controversy. In conceptualising and measuring effectiveness, researchers have identified three major approaches. They are: the goal-attainment approach; the system resource approach which emphasises organisational resource procurement; and the reputational approach, which associates effectiveness with the reported opinions of key persons, such as clients or service professionals (Forbes 1998). But the latest trend is characterised by social constructivism (Scott 1995), emergism (Pfeffer 1982). Jackson *et al* (1998) have mentioned six competencies of effectiveness - contextual, educational, interpersonal, analytical, political and strategic dimensions - to assess an NGO. Thus, no approach can be mentioned as the final approach to assess the effectiveness of NGOs and

this has led to the employment of multi-domain approach (Cameron 1983). Further, Salamon (1987) claims that the absence of a “firm theoretical basis for government- nonprofit relations,” strains between government and NGOs are taken to signify the impossibility of a positive working relationship between the two sectors (Coston 1998). Further, Hulme and Edwards (1995) declare that such theoretical frameworks are only partially developed. The NGOs are also troubled by paucity of funds, adequate networking, etc. With all these hindrances, they can succeed with a strong goal-based “Will”, like in the case of Bulgarian Environmental Movement (Desai and Snavely 1998). Thus, when these voluntary non-profit groups (NGOs) rise above all their weaknesses and bring in environmental constructivism and provide for an adequate EE action policy with “Hands on” activities and improved school linkages (which are found greatly in private nonsectarian schools – Raskoff and Sunden (1998), only then they will be successful and can bring a positive environmental change – The Ultimate Goal of an environmentally conscious citizen.

In India also, many studies have been conducted on the typology and characteristics, functions and development of NGOs (Murthy and Rao 1997; Rajasekhar 1998; Bhat 1999; PRIA 1991; Sangita 1990; Joshi *et al* 1997), on development programmes by NGOs (Rajasekhar 1997) interface between the government. and NGOs (Sen 1999; Rajasekhar *et al* 2002; Webster 1995). A study of 16 NGOs in Karnataka by Rajasekhar (1998) concludes that there is a mismatch between objectives and activities in the case of a majority of the NGOs, thus suggesting that NGOs’ projects are not accountable to the people. This implies that the NGO projects do not emerge on the basis of situations and needs of the people with whom they work, but are influenced by donor priorities and policies.

There are not many studies regarding EE programmes and NGOs except a few, which argue for NGOs’ role in developing environmental awareness (Vijaya and Mahadevan 1995; Rajagopalan 1999; Charanle 2000). Studies by CPREEC 2000, and CEE 2000 appear to be very significant as they evaluate the National Environment Awareness Campaign (NEAC) programmes by the Ministry of Environment and Forest (MOEF). CPREEC study concludes that the success of the programmes depends on the parameters for evaluation. If it is to be measured in terms of pollution levels and area under forest cover, the NEAC fails the test because, as we know, pollution levels are raising and forest cover is decreasing. But, if the parameters are in terms of awareness - which is what the NEAC is all about - it has undoubtedly succeeded. Today, nearly every media, be it television, radio or print, devotes some part of its space to the environmental

issues. This may also be the case with NGOs who work on EE, but no study has been found in this regard.

The Education, Awareness and Training Thematic Working Group (EATTWG) has pointed out in its Executive summary of Education, Awareness and Training Thematic Strategy and Action Plan (Kartikeya Sarabhai and Menon 2002) that ‘a fundamental challenge in front of educators today is that education itself is alienating us from our resources, environment, traditions and knowledge of our environment. The formal education process also does not give recognition or value to traditional knowledge and the knowledge of communities, accelerating the process of erosion of this knowledge. Educational planning has to be done so that not only is this knowledge recognised, but also given legitimacy and value. This needs re- thinking on education itself at the fundamental level. This happens only when educational planners and administrators are sensitised to these needs’. Pointing out the need to develop innovative and creative ways of sustaining, protecting and encouraging conservation traditions of India, in the contemporary context it has highlighted the role of NGOs in this regard and has recommended enhancement of the role of NGOs in promoting public awareness as well as school-based EE by supporting innovations, material development and action-oriented projects etc.

Now-a-days, NGOs’ role in the promotion of EE is very well recognised and the government. is encouraging them to organise EE programmes through non-formal sector. Many NGOs are working in the direction of conservation and sustainable use of environment through different types of programmes like environmental awareness programmes, nature conservation, pollution control and eco-development etc. But, the relevance and effectiveness of these programmes in relation to the goal of EE needs to be addressed. In this context, it has become imperative to study the role of NGOs in promoting Non-Formal EE, and their support to school work in the direction of achieving the goals of EE. Thus, the present study has been undertaken to identify the NGOs involved in NFEE and to make a case study of some of them in Bangalore District (Urban). In this study, it has been attempted to address the following questions:

1. “Who” are the NGOs working on EE in Bangalore District (Urban)?
2. How do these NGOs function to promote NFEE ?
3. How far are these NGOs successful in promoting NFEE ?
4. How do these NGOs associate with school education to promote EE ?
5. What are the problems faced by/limitations of these NGOs in promoting NFEE?

1.4. Conceptual Clarification

1.4.1. Environmental Education (EE)

Environmental Education is considered as an interdisciplinary subject, which aims at developing effective skills and solutions for solving environmental problems. It should prepare the individuals for life through an understanding of the major problems of the contemporary world and the provision of skills and attributes needed to play a constructive role for improving life and protecting the environment. There are several definitions of Environmental Education and “all of them clarify certain basic concepts about the totality of the environment and developing proper skills and attitudes for having a balanced view about it” (“Environmental Education”, UNESCO and NIEPA, 1988:119).

The definitions which have been considered for the present study have been given below:

“Environmental Education is an integral part of the education process. It should be centred on practical problems and be of an interdisciplinary character. It should aim at building up a sense of value, contributing to public well-being and concern itself with the survival of the human species. Its force should reside mainly in the initiative of the learners and their involvement in action and it should be guided by both immediate and future subjects of concern” (Report of the Tbilisi Conference 1977).

“Environmental Education should simultaneously create awareness, transmit information, teach knowledge, develop habits and skills, promote values, provide criteria and standards, and present guidelines to problem solving and decision making. It, therefore, aims at both cognitive and affective behaviour modification. This is an action-oriented, project-centred and participatory process leading to self-confidence, positive attitudes and personal commitment to environmental protection. Further more, the process is implemented through an interdisciplinary approach” (UNESCO-UNEP Congress on EE and training, 1987s).

This definition stresses that EE is a comprehensive, continuing process; routed in a broad interdisciplinary base, but responsive to changes in a rapidly changing world; linking the acts of today with consequences for tomorrow, while emphasising enduring continuity.

Further, it is accepted that EE should be a life long process beginning at family and continuing through all formal and non-formal stages. Thus, target audience for EE necessarily encompasses people from all ages and all levels of education. Any strategy for EE must necessarily be multi-pronged reaching out simultaneously to the different target groups through

different methods, approaches and media. Thus, a strategy for EE has to be integrative, problem-oriented, practical, continuous and diversified, with clarity in the objectives of EE, which have been listed below and presented in specific terminologies in the flow chart.

EE mainly aims to help social groups and individuals to achieve the following:

Awareness and sensibility to the total environment and its allied problems.

Knowledge of total environment, its associated problems and humanity's critical, responsible presence and role in it.

Attitudes relate to a set of values, feelings of concern for environment, motivation for active participation in the environment protection and improvement.

Skills of identifying and solving environmental problems.

Participation with a sense of responsibility and urgency regarding environmental problems, appropriate action to help solve these problems and avoid future problems.

However, it is considered that the ultimate goal of EE is to develop Environmental Ethics (*Parisara Dharma*) - social, corporate, individual and global - which impinges on the quality of life and includes the following actions, consistent with ecological principle to be imbued among the public:

- Recognising and accepting personal responsibility in decision making and stewardship towards environment. Becoming increasingly aware and concerned about those aspects of ecology which directly come within the province of each individual.
- Living in an environment with minimum disturbances to the right and habitats of other living things, consistent with the health, safety and certain basic comforts, pleasures of man as the dominant species.
- Using only such resources required to maintain life in a balance of health and productivity, permitting reproduction of the species at an optimum level affording ample opportunity for the growth of the mind and spirit, and encouraging artistic and creative expression.
- Making use of materials and energy in the most economic manner, balancing a supposedly desirable end against other possible ends.

In order to achieve these objectives, it is imperative to consider the following guiding principles of EE:

- Consider the environment in totality.

- Consider it a continuous, life-long process.
- Consider it an interdisciplinary in its approach.
- Emphasise active participation.
- Consider local as well as global perspective.
- Utilise diverse learning experiences.
- Focus on the community involving all categories of people.
- Focus on training, research and experimentation.

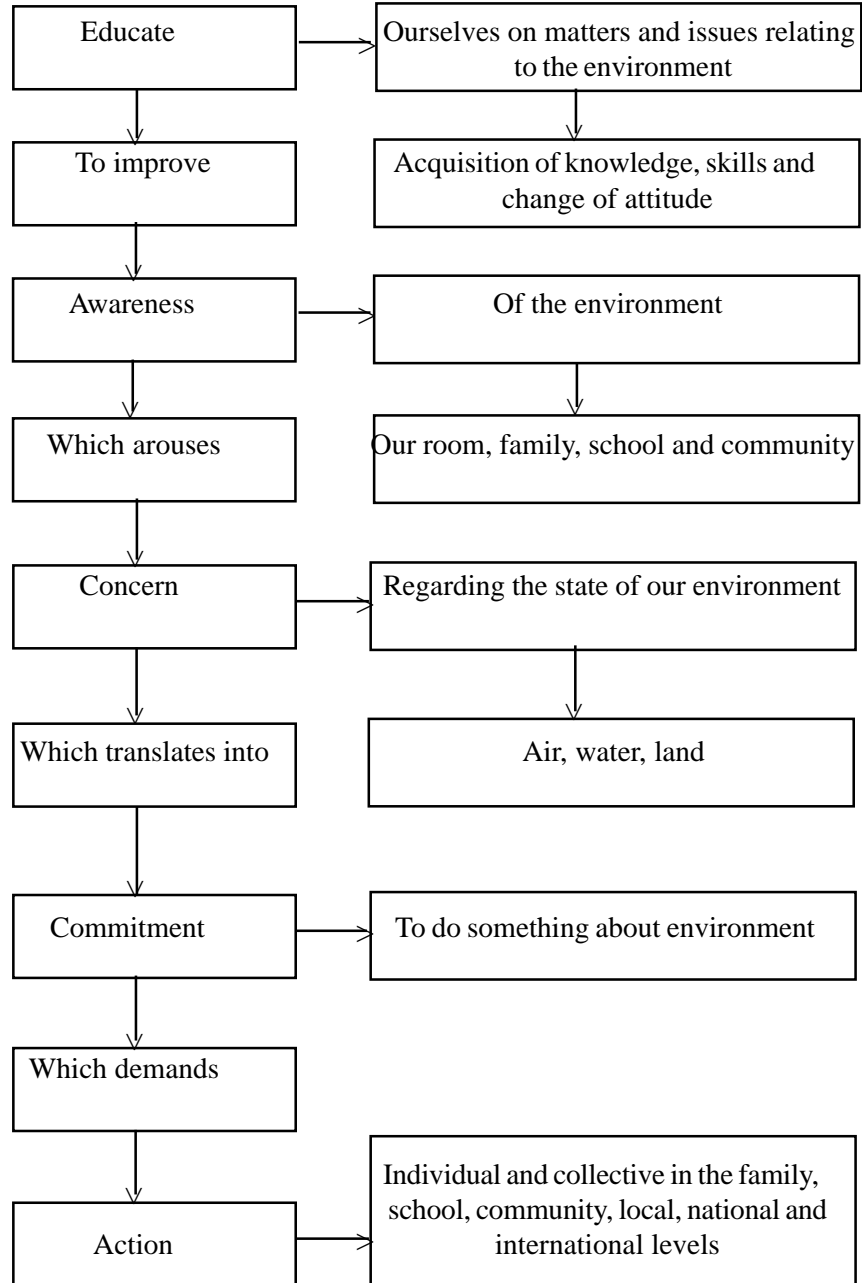
1.4.2. Non-Formal Environmental Education (NFEE)

EE outside the formal schooling is referred to as NFEE. It is less definitive and structured; directed towards the public at large (may be one community or a section of a community or the society as a whole). It caters to varied target groups - children, students, teachers, administrators, social workers, women, slum dwellers, rural youth, non-student youth and public, in general - of different age groups and background; demands varied strategies, approaches and programmes on a sustained basis. The agenda of NFEE is very broad with the objectives that individuals and social groups should acquire awareness and knowledge, develop attitudes, skills, abilities and motivation to participate in solving real life problems with a practical bias for ensuring a healthy environment all around. Community awareness and public sensitivity cannot be achieved overnight, and it also cannot be a one-time exercise. Special programmes focusing on specific and varied target groups on a sustained basis are essential to create environmental awareness at the community level. Thus, NFEE requires involvement of people in the capacity of individual or organisations like NGOs, government agencies, educational institutions and public.

1.4.3. Non-Governmental Organisation (NGO):

In an Encyclopaedia article (1.44.3.7), an NGO has been defined as an independent voluntary association of people acting together on a continuous basis, for some common purpose, other than achieving government office, making money or illegal activities. This term came into currency in 1945 with the establishment of UN and from 1970 onwards it passed into popular usage. It connotes different meanings in different countries and cultures. In the Third World countries including India, the term generally refers to organisations involved in development. But, in general, an NGO is a non-profit, non-criminal, non-political and non-violent group independent of government control.

Flow Chart Presenting the Objectives of EE



Murthy and Rao (1997) note that four characteristics make the NGOs distinct organisations: voluntary formation, working towards development and amelioration of suffering, working with non-self serving aims and relative independence. They are relatively independent from the government in the sense that their policies are determined by their Board of Directors or Trustees. However, the NGOs usually have to work within the parameters of government. legislation and policies formulated for NGOs. They depend on internal donors and the government, for their existence, and they are more accountable to donors (Rajashekar 1998). Therefore, NGOs can be defined as those organisations which facilitate the implementation of development projects for the needy people without necessarily seeking profit from such an implementation.

1.5. Objectives

The present study with descriptive research and case study method aims at:

- identifying the NGOs in Bangalore District (Urban) working towards NFEE;
- studying the functioning of the NGOs selected for the study (case study);
- studying the effectiveness of the NGOs in promoting NFEE;
- studying the NGOs' linkage with school education to promote EE; and
- identifying the problems faced by/limitations of NGOs in promoting NFEE.

1.6. Variables Considered

In order to study the functioning and effectiveness of the NGOs towards the promotion of NFEE, the following variables have been considered:

- Objectives of the NGOs regarding EE.
- Target groups.
- Programmes.
- Follow-up activities/programmes.
- Approaches/methods/materials used.
- Evaluation procedures followed.
- Publication and Documentation.
- Funding.

- Linkage with schools; and
- Problems faced by/limitations of NGOs.

1.7. Operational Definition of Key Terms

Non-Formal Environment Education (NFEE): NFEE means EE outside the formal schooling, catering to varied target groups – children, students, teachers, general public, social workers, professionals, administrators, rural folk, weaker sections of the society like women, slum dwellers, down trodden etc. It aims at achieving the goals of EE in the non-formal sector.

Non-Government Organisation (NGO): This study considers an NGO as a Bangalore-based independent voluntary organisation working at the grassroot level, and has taken EE either as its main agenda or a part of its development programmes.

Effectiveness of NGOs in promoting NFEE: The effectiveness of NGOs is measured mainly in terms of the effectiveness of the programmes organised (considering the number, nature, type of the programmes and achievement from the programmes) in addition to the data on other variables listed above. For this purpose, an impressionist approach has been used wherein the impression/perception of the key informants, participants, public, teachers and students is considered. In addition to this, the level of environmental knowledge, awareness and action behaviour of the participants and students selected for the study, as measured by a series of environmental tests- EKT, EAT, EABT - prepared for this purpose are also considered. It is very important to note that neither cost-benefit analysis nor cost-effective analysis has been used here to measure the effectiveness.

CHAPTER II

METHODOLOGY

2.1. Design of the Study

The present study, aiming at identifying the NGOs working on Environmental Education and preparing case studies of selected NGOs, has employed normative survey method involving descriptive analysis and case study with multiple-case replication design. The study has been conducted in three phases:

- i) Identification of NGOs who are working on EE
- ii) Construction of research tools
- iii) Case studies of select NGOs

2.1.1. Identification of NGOs Who Are Working on EE

A list of NGOs in Bangalore District (Urban) was prepared by referring to the following sources like websites, directories and organisations:

- www.bangalorengos.com
- www.southindianngos.org
- www.princeton.edu/shanmuga/NGO/karnataka.html
- www.envirocircle.com/marketplace/ngolist.asp
- Environmental NGOs in India - A Directory 1994, WWF India's ENVIS Centre.
- Indira Gandhi Conservation Monitoring Centre, World Wide Fund for Nature-India, MOEF, Government. of India, Nov. 1994.
- Directory of Voluntary Organisations in Karnataka 2000.
- Bangalore Cares, New # 11, Lloyd Road, Cooke Town, Bangalore - 560 005.
- Environmental Education Initiatives in South India- A Directory.
- CEE, South Regional Cell, Bangalore, 1997.
- A Child Resource Directory for Bangalore 1999, Sutradhar 599, 17th A Cross, 7th Main, Indiranagar, II Stage, Bangalore 560 038.
- www.mahiti.org/sutradhar
- Karnataka Rajya Vijyan Parishat , IISc, C.V. Raman Road, Bangalore 560 012.

practicability. Then the tools were validated against the above-mentioned criteria in a participatory workshop involving four subject experts and thus, the tools have been claimed to have content validity. Further, the tools have been claimed to be reliable as the items included in them were objective and the tools were of considerable length. No separate attempts have been made to establish the validity and reliability for the tools.

Organisational Data Sheet

This data sheet was meant to collect data from the NGOs with respect to their establishment and composition, coverage of geographical area and target groups, details of the programmes held, approaches and methods used, instructional material and activities used as well as given to participants, evaluation procedure employed, problems faced by and future plans of the NGOs, linkage with schools, follow-up activities and funding details etc. The items in this data sheet have been put under two heads – 1. Introductory Data and 2. Programme-Related Data.

Interview Schedule for the Key Informants/Public and Questionnaire for the Participants

These tools were purported to seek information on the programmes and other details of the particular NGO; their opinion/experience regarding functioning of the NGO, achievement of its objectives and effectiveness of the programmes; suggestions to make the NGO more active and effective. The tools also attempted to get the opinion on NGOs' contribution, in general, towards NFEE and their views on EE in the Indian context, in particular. In all the three tools, items were placed under three heads – personal data, programme-related data and individual perception data.

Interview Schedule for School Heads and Teachers

This was meant for obtaining data from the school heads and teachers regarding the linkage between schools and the particular NGO. This sought information relating to the details on EE programmes held in or attended by the school in collaboration with the particular NGO, effectiveness and limitations of those programmes, problems faced by them in organising or attending the programmes, suggestions to make the programmes effective. Further, it attempted to get their opinion about NGOs' contribution, in general, towards NFEE and views on EE, in the Indian context, in particular.

Questionnaire for Students

This was intended to get the information on the details of the EE programmes held in the school, programmes in which they participated,

- Karnataka State Pollution Control Board, 24th Floor, Utility Building, Bangalore.
- Ministry of Environment and Forests (MOEF) - Regional Office, 4th Floor, Kendriya Sadana, Koramangala, Bangalore.
- Federation of Voluntary Organisations in Rural Development (FAVORD K), No. 44, New Bamboo Bazar, Contonment, Bangalore – 560 051.
- Regional Museum of Natural History, Siddartha Nagar, Mysore - 570 011.

The NGOs working towards NFEE were shortlisted after screening the thrust areas and objectives of the listed NGOs. Then these shortlisted NGOs were visited in person/contacted through e-mail/websites/telephone to crosscheck their status and identification with EE. It is found that some of the NGOs listed were not in existence, some could not be traced in the given address or elsewhere, some NGOs were not focusing on EE programmes (although it was mentioned as one of the thrust areas). Finally, twenty-two NGOs who were working exclusively on EE as part of development programmes were listed as those working on EE and the profiles of all the twenty-two NGOs were prepared.

2.1.2. Construction of Research Tools

This study being descriptive and case study type, required collection of data from multiple sources and different type of tools. As such, the following research tools required for the collection of data in the present study, were prepared and validated by the investigator.

1. Organisational Data Sheet
2. Interview Schedule for Key Informants
3. Interview Schedule for Public
4. Questionnaire for Participants
5. Interview Schedule for Heads and Teachers
6. Questionnaire for Students
7. Environmental Knowledge Test (EKT)
8. Environmental Awareness Test (EAT)
9. Environmental Action Behaviour Test (EABT)

The tools were prepared by the investigator following the points to be considered for constructing valid, reliable and comprehensive research tool. The items under each tool were scrutinised, some items were restructured and some were discarded to meet the criteria of truthfulness, consistency, comprehensiveness, repetitiveness, language precision and

effectiveness and limitations of the programmes, problems faced by them, suggestions to make the programmes more effective and their expectation from the NGOs.

Environmental Knowledge Test (EKT), Environmental Awareness Test (EAT) and Environmental Action Behaviour Test (EABT)

The purpose of these tests was to measure the level of environmental knowledge, awareness and action behaviour, respectively, among the participants and students. After identifying different aspects of environment to be included in these tests, adequate number of items were prepared by the investigator. Some items were drawn from Environmental Awareness Scale and Environmental Knowledge Test prepared and validated by Dr. Haseen Taj (Senior Lecturer, Dept. of Education, Bangalore University) and some items from these were modified to suit the level of beneficiaries. Then the items were scrutinised and validated.

Table 2.1: Distribution of Test Items Under Different Aspects of Environment in EKT, EAT and EABT

Aspects of Environment	Items Sl. No in EKT	Items Sl. No in EAT	Items Sl. No in EABT
Environmental concepts	1, 2, 3, 11, 13, 15	1, 3, 12, 14	—
Pollution and its control	4, 5, 7, 17	2, 4, 6, 10, 16	9, 10, 13, 14, 20
Population and health and hygiene	6, 18	19, 20	3, 11, 16
Animal world	14, 19	13, 17	8, 19
Bio-diversity	8, 9, 10	5, 9	2, 12, 18
Energy	12, 16	7, 8,	6
Environmental concern and legislation	20	11, 15, 18	1, 4, 5, 7, 15, 17

These tests were norm-referenced tests and consisted of 20 multiple choice items each focusing on seven different aspects of environment – Environmental concepts, Pollution and its control, Population and health and hygiene, Animal World, Bio-diversity, Energy, Environmental concern and Legislation. The distribution of test items over different aspects of environment in each of the 3 tests has been detailed above in Table 2.1.

2.1.3. Case Study of Select NGOs

Multiple case replication design was followed to carry out the case study of the select NGOs and the following principles (Yin 1994) were

considered for data collection:

- i. Using multiple sources of evidences by which the problem of construct validity can be addressed , because it provides multiple measures of the same phenomenon and provides for triangulation.
- ii. Creating a case study database with two types of data - data on evidentiary base and report of the investigator.
- iii. Maintaining a chain of evidence to increase the reliability of information.

Further, an attempt was made to establish the reliability of case studies by following the case study protocol. Totally, three NGOs were selected for case study and they were:

1. ATREE
2. ECO-WATCH
3. YMCA

The data were collected from and about these three NGOs by using multiple sources of evidence such as documentation, archival records, interview, questionnaire, tests and physical artifacts. The relevant documents and archival records were collected from the select NGOs; the questionnaire and the tests were administered to the participants and students; the key informants, public, school heads and teachers were interviewed. The select NGOs, schools and sites for physical evidences were personally visited and photographed.

It was felt useful to study what would be the level of environmental knowledge, awareness and action behaviour of the students from the schools without NGO intervention and whether they differed from those who were in the schools with NGO intervention. Hence, the data were collected by administering the three environmental tests - EKT, EAT and EABT - on 50 students from two schools without NGO intervention.

2.2. Sample Selection

The present study involved multiple-stage as well as multiple-source sampling and the sample for this study was drawn at three stages and from multiple sources. In the first stage, purposive sampling technique was used to select three NGOs for the detailed case studies. The criteria considered for selecting these NGOs have been given below:

Criteria for the Selection of NGOs for Case Study: All the three NGOs

- were grassroots Non-Government Development Organisations

(NGDOs) working at the local level in Bangalore city;

- had steady and regular programmes on EE;
- had both awareness and action programmes;
- had linkage with schools;
- had documentation of the programmes/activities held; and
- exhibited inclination to extend their co-operation to us in data collection

In the second stage, a convenient sampling technique was used to draw samples of different categories such as key informants, participants and public. In other words, the people (in each category) who were available, accessible and approachable only were considered for the study. The number of persons in each category (from each NGO) depended on their availability.

In the third stage, 1/3rd of the total number of schools, with which the selected NGOs had linkage, were considered for the sample of the study. The schools linked with each NGO were randomly selected. The total sample of the schools consisted of 11 schools, out of which 4 each were from ATREE and Eco-Watch, and 3 from YMCA. Using the convenient sampling technique, one head master/mistress of the school, teachers (1 or 2 as the case might be) who were in charge of the EE programmes in the school and the students who had participated in these EE programmes (the number depending on their availability) were considered for the present study.

The details of the effective sample considered for the study have been given in Table 2.2 and the school-wise details on the number of students and teachers considered for the study have been presented in Table 2.3.

Table 2.2: Effective Sample Drawn for the Study

SAMPLE CATEGORY	ATREE	ECO-WATCH	YMCA	TOTAL
Key informants	3	4	4	11
Participants	14	14	15	43
Public	5	5	5	15
Schools	4	4	3	11
Heads and teachers	9	9	7	25
Students	67	73	98	238

Table 2.3: School-wise Details of the Sample of the Students and Teachers

NGOs	Schools	No. of Students	No. of Teachers
ATREE	Bishop Cotton Girls High School	36	2
	Gear Foundation	10	2
	Poorna Learning Centre	12	2
	Vidyantikethana High School	9	3
	Total	67	9
ECO-WATCH	Cambridge Public School, HSR Layout	14	2
	Cambridge Public School, Koramangala	31	2
	East West High School	18	2
	Janaka Vidyalaya	10	3
	Total	73	9
YMCA	IQRA High School	38	2
	Stracey Memorial High School	30	3
	Vinayaka High School	30	2
	Total	98	7
GRAND TOTAL		238	25

2.3. Techniques Used for the Analysis of Data

Both the qualitative and quantitative data were considered for the study. The qualitative data were collected from both primary and secondary sources and the quantitative data were also used (wherever necessary) to supplement the analysis. By and large, the analysis of the data has been descriptive and inferential. (Analysis of the data is descriptive because descriptive statistical measures like Mean, Standard Deviation and Percentage have been calculated and they describe the status of a group on certain variables. It is inferential because ‘t’ test has been used to infer about the difference between groups). A few statistical measures like percentages, mean and standard deviation, and ‘t’ test for significance of the difference between means have been used for analysing the quantitative data. The details of the analysis and interpretation of the data have been presented in the following chapter.

CHAPTER III

ANALYSIS OF THE NGO PROFILES

After identifying the NGOs (objective 1 and research question 1) working towards NFEE in Bangalore District (Urban), the profiles of those NGOs were prepared and analysed considering the variables indicated (vide page no.13). The details of this analysis have been presented in this chapter.

3.1. Status of NGOs

An analysis of the profiles of the NGOs identified (22) in the present study shows that all the NGOs were grassroots Non-Government Development Organisations (NGDOs) working towards environmental conservation and environmental education, of which 5 NGOs - CEE, MYRADA, PARINATHI, TERI, WWF- worked as network NGOs too. Of them, only 12 NGOs were found working exclusively on EE whereas other NGOs (10) included EE as part of the development programmes, i.e., tribal/slum development, rural development, women empowerment, upliftment of downtrodden etc. It is also found that out of the 22 NGOs identified, 13 had been established after 1990, 7 after 1980 and 2 were very old (one each in early and mid-1900s); 14 had their own websites, which anybody could access for the details of those NGOs.

3.2. Objectives

All the 22 NGOs indicated their objectives in broader terms as 'environment awareness/environment education', but not clearly spelt out in terms of specific objectives to be achieved through their programmes.

3.3. Thrust Areas on Which NGOs Work

Different NGOs were working on different thrust areas and they have been listed below:

- Environmental awareness and conservation
- Bio-diversity and wildlife conservation
- Solid waste management
- Water conservation and waste water treatment
- Rainwater harvesting and watershed programmes
- Afforestation – social forestry and urban forestry
- Waste land development
- Tribal/slum development

- Rural and integrated development
- Women empowerment and upliftment of downtrodden
- Networking, consultancy, health, pollution control, capacity building etc.

This indicated that the NGOs were focusing on some of the concerns relating to environmental issues/ecological components and they could be grouped under 4 major headings - environmental awareness and bio-diversity /ecology conservation, air and water pollution, developmental activities, and others (including health, consultancy, networking etc).

3.4. Target Group

Twelve NGOs had students, teachers, youth, professionals, public and women as target groups whereas other 10 NGOs had exclusive categories like womenfolk, farmers, SC/ST and other weaker sections, villagers/rural folk. In other words, the NGOs with developmental programmes as the thrust areas had restricted category of people as their target groups, and it was quite obvious to achieve the intended goal. As such, the EE programmes also were restricted to the specified categories of people.

3.5. Geographical Coverage

Out of the 22, only 4 NGOs exclusively covered Bangalore District, whereas 7 NGOs worked in different districts of Karnataka and 11 NGOs worked in different states of India (3-4 had international linkage). It was inferred that the NGOs with geographical coverage of Bangalore District only were very few and more number of NGOs worked in different states of India.

3.6. Programmes and Approaches/Methods Used

Some of the NGOs expressed that the number and nature of their programmes depended upon the funds they got from the government or any other agency. In other words, they worked for the programmes sponsored under any scheme by the government or any other agency. Some NGOs organised programmes for which they had inclination and resources/facilities, and these programmes were regularly held in addition to the government-sponsored programmes.

Seminars, workshops, training programmes, field trips, lectures/talks, demonstrations and competitions were the common programmes organised by the NGOs (12) aiming exclusively at EE. Among these NGOs, 3 had networking, 3 consultancy, 3-4 research activities and 3-4 projects for eco-

development as additional programmes to the above list. The other NGOs (10) had developmental packages, capacity building, training and consultancy as their programmes.

It is quite interesting to note that all the 22 NGOs opined that they had both types of programmes - awareness and action-oriented. Further, it is found that the most commonly used approaches were participatory and interactive approaches. Lectures, fieldtrips, demonstrations, slide shows, discussions with hands-on/outdoor activities were the methods employed for EE programmes.

3.7. Follow-Up Programmes/Activities

The NGOs with developmental programmes could take up follow-up activities whereas in the case of NGOs with environmental awareness and conservation programmes, it was not possible to have follow-up activities in many cases. This appeared to be the major limitation of the NGOs.

3.8. Evaluation Procedure Followed

All the NGOs evaluated their programmes informally, by getting the opinion of the participants at the end of each programme. In some cases, the programmes were evaluated by the funding agencies as per their requirement. Formal evaluation with structured format had not been thought of.

3.9. Linkage with Schools

Out of the 22 NGOs identified, 12 had established linkages with schools (one in 1991, 3-1997 onwards, 4-1980 onwards, 4-2000). This implied that only 50 per cent of the NGOs identified had established linkages with schools for the promotion of EE.

3.10. Funding

All the NGOs depended on self-generated funds in addition to sponsorship from certain agencies for certain programmes. The NGOs indicated the names of the funding agencies, but had not given the details regarding the nature and level of funding and the amount spent on the programmes. However, the contact persons of these NGOs expressed that funding was not adequate, and mobilisation of funds from different sources well in time was a highly difficult task for the NGOs.

3.11. Publication and Documentation

Twelve of the 22 NGOs published materials whereas other 10 did not. Of those with publications, only 4 NGOs had rich publication history with many books, booklets, monographs, journals, e-journals etc (CEE,

DR.R.M.Lohiya Institute of Ecology and Environment, ATREE and TERI) and the remaining 8 brought out only newsletters, annual reports and brochures as their publications. This indicated that publication work was not taken up by all the NGOs. The NGOs felt that publication work was difficult as it involved money and expertise. Eighteen out of the 22 NGOs had documentation in the form of annual reports, out of which 14 had access to website for detailed information. Other 4 NGOs did not have any documentation.

3.12. Conclusion

On the whole, it was found that there were different categories of NGOs such as NGOs with stability fund and stable as well as regular programmes and those who did not have; single-purpose NGOs mainly aiming at EE, and multipurpose NGOs who considered EE as part of their development programme; NGOs who mainly depended on government-sponsored programmes and those who had upward linkage with other agencies (national/international).

CHAPTER IV

CASE STUDIES

In order to study the functioning of NGOs to promote NFEE (objective 2 and research question 2), the case studies of three NGOs - ATREE, Eco-Watch, YMCA – were conducted. The functioning of the NGOs was studied with reference to the following variables - objectives, thrust areas, target groups, programmes, follow-up activities, approaches/ methods/materials used, evaluation procedure followed, publications, linkage with schools and problems faced by the NGOs. Consolidating the information collected through the organisational data sheet constructed for the purpose, the NGOs' documentation, archival records and the interview with the key informants of the respective NGOs selected for the study, the case report were prepared. The detailed case reports of the three NGOs selected for the study have been presented in this chapter.

4.1. NGO 1: Ashoka Trust for Research in Ecology and the Environment (ATREE)

4.1.1. ATREE - At a Glance

Address	: 59, 5 th 'A' Main, Hebbal, Bangalore - 560024
Telephone Nos.	: 23530069/23533942/23633942
Fax	: 23530070
Email	: info@atree.org / atree@vsnl.com
Website	: www.atree.org
Contact person	: Ms. Suparna Biswas
Year of establishment	: 1996
Year of initiation of EE	
Programmes	: 2000
Type of NGO	: Grassroots
Thrust areas	: Bio-diversity conservation, scientific research and education, policy development, and awareness of environmental conservation
Objectives of the NGO	: To conserve biodiversity, promote sustainable use of natural resources, build networking of local institutions, advance protection of the environment, develop environmental awareness
Geographical coverage	: Bangalore (Karnataka), Western Ghats in South India and Eastern Himalayas in North India

Target group	: Students, teachers, general public, farmers and local institutions
Funding agencies	: Government, MacArthur Foundation, IPGRI, CIFOR
Other supporting organisations	: Centre for Environmental Education (CEE), Centre for Science and Environment (CSE), University of Agricultural Sciences (UAS) and National Museum of Natural History (NMNH)- Government of India

4.1.2. ATREE - In Detail

4.1.2.1. About ATREE

ATREE is a charitable trust founded in 1996 with the express goal of meeting the challenges of environmental degradation and economic development in India. This trust is managed by an Executive Board with the Executive Director as its chief operating officer and it is based in three places with the following addresses:

Offices:

- # 659, 5th A Main, Hebbal, **Bangalore** 560 024, **Karnataka**, India
Tel: (91) (80) 23533942, 23530069, 23638771
Fax: (91) (80) 23530070 email: director@atree.org
- Bungalow No.2, Bhujiapani, Near Air Force Officer's Enclave, **Bagdogra**, District Darjeeling, **West Bengal** 734 422, India
Tel: (91) (353) 550093, 551110 email: atree@sancharnet.in
- M-93, Saket, **New Delhi**-110 017, India
Tel: (91) (11) 26854707/26532693 email: mdabas@atree.org

Field Station:

- Biligiri Field Station, BR Hills, Yelandur Taluk, Chamarajanagara District, Karnataka 571 441, India
Tel : (91) (821) 2744 076 email: hiremath@atree.org

ATREE's efforts are currently focused on India's two hotspots of bio-diversity - the Western Ghats and the Eastern Himalayas. These spots are prone to high levels of habitat loss due to deforestation, changes in land-use and the over-harvesting of natural resources. ATREE aims at preventing the loss of bio-diversity and protecting these important habitats in order to preserve the regions' genetic diversity, to maintain the economic well-being

of the millions of people who rely on these resources, and to preserve these habitats for future generations. Ministry of Science and Technology has recognised ATREE as a Scientific and Industrial Research Organisation.

ATREE-Bangalore has a team of 40 (28 full-time and 12 part-time) members including 12 Scientists, 12 Research Staff and Outreach Workers either in their offices at Bangalore, Delhi and Badagora or at the various field stations. In addition to the Executive Board, it has an Advisory Board also. The President, Kamalajit S. Bawa, is the distinguished Professor of Biology, University of Massachusetts, Boston, USA. Dr. Gladwin Joseph and Smt. Suparna Biswas are the Director and Asst. Director of the ATREE respectively. The details of their CV indicate that all the members involved in the functioning of ATREE are highly qualified and distinguished scholars in different fields. The scientists and research staff are invariably Ph.D holders from distinguished Universities of India with remarkable credentials and rich experience in carrying out research work. It is a non-profit making organisation, which concentrates on research in ecological conservation, driving policy change and awareness building through EE. It is avowedly not involved in activism and is unique in nature as it

- i) combines public concern over the deteriorating economic and physical environment with a vigorous scientific approach to solve the environmental problems;
- ii) utilises an interdisciplinary approach to address issues of environmental degradation and economic development. This approach leads to the improvement of the human condition through economic development while conserving our environment and natural resources;
- iii) is exclusively devoted to conservation of bio-diversity in all its dimensions: biological, social and economic;
- iv) emphasises research work to the extent that its environmental education and training programmes are based on its research work, which, in turn, is reinforced and enriched by its outreach activities and educational programmes;
- v) attempts to bridge the gap between grassroots, community-based organisations and the policy making agencies of the government; and
- vi) fosters collaboration with other like-minded individuals and organisations, and provides support to its partners to promote conservation, sustainable use of natural resources and poverty alleviation.

Using the principles of natural and social sciences, ATREE strives to conserve bio-diversity and promotes sustainable development while seeking to advance the protection of the environment. This organisation promotes

scientific research and education, policy development, and community outreach in the following core thematic areas:

- Conservation and Livelihoods
- Conservation Planning
- Land Use and Land-Cover Change
- Genetic Resources
- Restoration
- Forest Ecology and Management

4.1.2.2. Programmes/Activities of ATREE :

ATREE's programmes of **research, education, outreach and policy** are integrated with its core thematical areas to achieve its main goals. These main components draw on and reinforce each other. The research forms the basis of action, policy and outreach programmes, and insights gained from outreach activities contribute to the development of research and educational programmes. Educational programmes draw upon the strength of the research programme, and pedagogical approaches developed in the educational programmes contribute to outreach activities. ATREE's activities are being conducted from all its three offices in Bangalore, Bagdogra and Delhi, which helps it to effectively incorporate regional dimensions enhancing the local acceptance of its offerings. The details of the programmes taken up within Karnataka only have been considered for this study.

A. Programmes Organised During the Last 5 years - 1998 to 2003

i) Environmental Education Programmes (2000 to 2003):

ATREE's educational programmes are based on its staff's expertise in bio-diversity conservation and natural resources management. They are offered for school, college and university students as well as teachers, and also for a wide array of professionals. Most of the programmes are organised at 'Navadarshana', a 110-acre 'eco-ashram' developed by ATREE near Anekal, Bangalore. It was a barren land with small hillocks. Less than a decade ago, it was brought to the present condition by planting trees and shrubs, and with a greenbelt all round. Constant vigil on grazing, logging and hunting helped the natural life balance back. The houses built in Navadarshana are made from sun baked bricks, mud and lime mortar, and have thatched roofs reflecting the rural setup. The details of the programmes organised by ATREE since its initiation to the EE programmes (2000) have

been given below. Further, the details regarding the follow-up activities, success stories, future plans, mode of publicising the programmes, effectiveness of the programmes and the co-operation from the community /participants have also been presented under this head.

ii) Research

ATREE initiates and conducts applied research to strengthen the foundation of knowledge upon which conservation decisions are made. It has contributed extensively to this knowledge base through its publications and scientific presentations and its educational programmes benefit significantly from these contributions. The core objectives of this programme are - applying natural and social sciences to solve the complex environmental problems at multiple scales, developing and implementing innovative educational modules for various target groups. Table 4.2 presents the details of the work of ATREE in the core thematic areas.

iii) Outreach Activities

ATREE's outreach activities, like its educational programmes, draw upon the research and expertise of its staff in the field of conservation and have 3 objectives: to build the capacity of the government and non-governmental organisations; to create awareness among students, teachers, professionals and public, and to provide a forum for discussion and debate; to foster network of institutions

iv) Policy

ATREE's policy-related work has 3 objectives: to analyse policies regarding land use, conservation planning and management of forest resources; to bring a change in the policies; to provide a forum for discussion and exchange of ideas regarding policies.

Following are the actions taken up by ATREE:

1. Contributed to the development of a National Bio-diversity Strategy Action Plan (NBSAP) by the Co-ordinator of the Technical Policy Core Group
2. Worked with VGKK in BRT Wildlife Sanctuary to change the policies concerning payment of the fees to harvest non-timber products
3. Organised the Workshop on 'Forest Genetic Resources' and its output is published as a book by IBH Publishing Co. Pvt. Ltd., New Delhi, in association with ATREE.

Table 4.1: Environmental Education Programmes

Sl.No	Programme	Target Group	Content	Methods/ Materials Used
1	In Bangalore : Conservation Biology course for students (2 weeks programme) conservation work	Graduates, Post-Graduates Karnataka, AP, TN and Pondichery	Conservation Biology distribution of bio-diversity conservation	Lecture-cum-field work, students' project work
2	Vacation courses for students (2 programmes of 3 weeks each)	High School students	Bio-diversity conservation	- do -
3	Outdoor environmental learning initiative (OELI) in collaboration with the National Museum of Natural History, GOK	School students from Delhi, Bangalore and Darjeeling	Activities that supplement curriculum based learning in school EE programmes	Outdoor environmental modules
4	Workshop on Insect diversity and conservation	Under-graduate students	Insect diversity and conservation	Interaction and practical exposure
5	Workshop on honeybees	Senior and Junior Researchers	Surveying and monitoring honeybees	- do -
6	A day-long teachers' workshop	Teachers	Problems and challenges in EE in schools	Discussion on organisation of outdoor environment learning camps
7	Study tour	Post-Graduate students	Nature study	Observation, discussion and interaction
8	Release of International Journal, 'Conservation and Society'	-	-	-
9	Preparation of a CD on the Western Ghats called 'Sasya Sahyadri'	-	-	-

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Sl.No	Programme	Target Group	Content	Methods/ Materials Used
10	Creation of a database on entire plant tree species of 1,000 kms. long Western Ghats	-	1 st Indian digital plant database of Western Ghats	-
11	Outside Bangalore: Development of skills in EE at CEE, Bangalore (supported)	School teachers of BR Hills	Skills in EE	Field exercises and activities
12	Development of Instruction modules at BR Hills	School teachers	Environment education	-
13	Western Ghats learning facility under plaNET programme at BR Hills and Chamarajanagar Dt.	Teachers and students	Environment education	Outdoor learning under OELI
14	2 Day training workshop in BRT Wildlife Sanctuary	Forest Guards	Forest conservation and management	Lecture and interaction, practical activity

Table 4.2: Work of ATREE in the Core Thematic Areas

Area	Work of ATREE
Conservation and livelihoods	<p>Working with Vivekananda Girijana Kalyana Kendra (VGKK) and Tata Energy Research Institute (TERI), ATREE has helped <i>Soligas</i>, the indigenous people of Biligiri Rangan Hills (Biligiri Rangaswamy Temple Wildlife Sanctuary) in the Western Ghats, in establishing forest –based enterprises that incorporate principles of conservation and sustainable management.</p> <ul style="list-style-type: none"> -Has established a honey processing plant to process honey collected from wild honey bees, a food processing plant for wild fruits, and a herbal medicinal plant. -Has implemented a biological monitoring programme including participatory resource monitoring -Has initiated socio-economic monitoring to empower the local community to realise social and economic benefits from various government and non-government activities aimed at their welfare.
Conservation planning	<p>Has aimed at comprehensive assessment of bio-diversity to identify gaps in conservation, assess threats to bio-diversity, identify indicators for the loss of bio-diversity, and to improve policy and institutional framework for the conservation of bio-diversity</p> <ul style="list-style-type: none"> -Has conducted a gap analysis for the Agastyamalai region in Western Ghats -Has identified conservation-priority areas in Arunachala Pradesh, a biodiversity-rich region in the Eastern Himalayas. -Has devised new tools for assessing biodiversity (new methods of classifying forests) -Has been helping the Karnataka Forest Department in inventorying the biodiversity and assessing the threat status of lesser known insect groups in different protected areas (e.g., Nagarahole National Park and Biligiri Rangaswamy Temple Wildlife Sanctuary)
Land use and land cover change	<p>Purported to assess the extent of change in land cover, particularly deforestation and forest degradation, identify the causes of change, and examine their consequences.</p>

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-Using remote sensing imagery, archive maps and ground surveys, scientists associated with ATREE have examined land use change and deforestation in four areas:

Agasthyamalai Hills, Malai Mahadeshwara Hills and Biligirirangana Hills in the Western Ghats, and Darjeeling Hills in the Eastern Himalayas. The data gathered have been assembled into a Geographic Information System (GIS) format.

-Working with the National Remote Sensing Agency (NRSA), Hyderabad, ATREE scientists have shown that the rate of deforestation in the Western Ghats remains high, modeled rates of future deforestation in Arunachal Pradesh have shown that unless current trends are reversed, a large amount of biodiversity will be lost forever.

-Has provided hard facts and valuable insights into the bamboo crisis in the Western Ghats of Karnataka, and have emphasised the need for some urgent and hard solutions to conserve and manage the remaining bamboo resources in the state. (Studies indicate that Medar families are losing the art and skill of working with bamboo, going in search of other non-traditional occupations and do not wish their children to continue the hereditary occupation)

-Has been involved in a long-term programme to monitor plant diversity and turn over in the Kalakad Mundanthurai Tiger Reserve (KMTR), in the Western Ghats of Tamil Nadu.

Genetic
resources

The University of Agricultural Sciences (UAS) and ATREE, together, have attempted to map the genetic diversity of economically important forest tree species of the Western Ghats, assess the impacts of anthropogenic pressures on the genetic diversity of non-timber forest product species, evaluate the socio-economic causes and consequences of loss of genetic resources on the livelihoods of forest fringe communities and develop novel strategies for the conservation of forest genetic resources at a regional level.

-Have assessed the distribution of bamboo and rattan resources in the country and the genetic variability of a

Contd...

few economically important species of bamboo and rattan in the central Western Ghats.

- Have mapped the genetic diversity of 19 sandal populations in Peninsular India (indicated a substantial decline in the total quantity of sandal extracted from Karnataka in recent years)
- Have associated in developing conservation plans for the medicinal plants of South India. Initiated a programme to identify centres of high genetic diversity of three of the most important medicinal plants, collectively referred as Triphala.

Restoration Has been understanding the process of natural restoration and succession, restoring native bio-diversity to areas invaded by exotic weeds, restoring non-productive agricultural land utilising organic farming methods that integrate trees and other beneficial vegetation, and developing appropriate nursery and reforestation technology.

Forest Ecology Management Has been bringing scientifically informed changes in policy and ground level management that conserves and restores our fragile ecosystems. Has been bringing interaction meetings at Kombudikki and Ponnachi in the Malai Mahadeshwara Hills.

Table 4.3: Outreach Activities in Karnataka

Programme	Objective
Participatory Resource Monitoring at BR Hills	To enable the Soligas to attain harvest sustainability and to derive better economic returns
State Level Congress of Tribal Youth at VGKK in BRT Wildlife Santury	To expose the tribal youth to opportunities in education, health and urgency bio-diversity conservation.

v) A New Institutional Initiative

ATREE signed a Memorandum of Understanding (MOU) with the Institute for Social and Economic Change (ISEC), Bangalore, for a new activity (March 2001), viz., ISEC - ATREE Centre for Interdisciplinary Studies in Environment and Development (CISED). Since 2002, CISED has emerged as a Centre of Excellence promoted by ISEC, managed by

an Executive Committee with the Director, ISEC, and other learned persons, guided by an Advisory Committee consisting of internationally renowned scholars, activists and policy makers. Its main goal is to create an institutional space for conducting interdisciplinary research and training on problems at the interface of environment and development in ways that ensure relevance for action and policy without sacrificing scientific/academic rigour. Research, teaching and training, outreach and stakeholder interaction are the activities envisaged by CISED.

A. Follow-Up Activities

There is continuous follow-up work as far as research is concerned. But regarding EE programmes, no follow-up could be taken up with the same batch of participants in the same focus area as different programmes involved different participants. However, it has been attempted to have a follow-up with the same schools and same category of students like high school students, graduates or postgraduates etc. This has enabled ATREE to reach more students and make them develop environmental awareness and eco-friendly attitude.

B. Success Stories

- Capacity Building in BR Hills and MM Hills.
- Basic Research on Ecology and Environment.
- Conservation Biology Courses.
- Vacation Training Programmes.
- Conservation Education.
- PlaNETwork.

A. Future Plans

- i. To reach out and provide hands-on (means first-hand experience or experiencing on their own, through activities) experience to 70 schools in Bangalore city, in the forthcoming year.
- ii. To set up a Teacher Database for EE.

A. Other Details on the Programmes

The programmes of ATREE are publicised through advertisements in print, radio and internet, personal contact, professional friends, posters and pamphlets. All the programmes are reported as effective to the extent of 75 per cent to 90 per cent. The co-operation from the participants is rated at more than 75 per cent, whereas from the public it is less than 50 per

cent. It has adequate number of in-house resource persons (Scientists/ Research Staff) who have enriched experience out of their research work; only 2 or 3 are external resource persons.

4.1.2.3. Approaches/Methods and Materials Used

By considering the details of the programmes as provided by the NGO, it has been found that the most commonly adopted approach is participatory and interactive. Lecture-cum-field trip appears to be the most commonly used method for EE. In the field trip programme, the participants were given individual or group activities where they were allowed to observe the nature and learn. In some cases, demonstration was used along with certain hands-on-activities.

Regarding the materials used, it is mentioned that relevant material has given to the participants along with the brochure of ATREE and 1 or 2 page note about the respective programme. But the researcher could not get any material for perusal.

4.1.2.4. Evaluation Procedure Followed

ATREE has not concentrated on the formal evaluation of the effectiveness of the programmes organised by it. The programmes are evaluated by getting oral feedback from the participants at the end of the programme. No structured pro forma for this has been thought of.

4.1.2.5. Publications

According to the list of publications available, it is found that there are 137 publications in total, of which the details are as given below:

Books	-	4
Manuals	-	2
Popular articles	-	8
Journal	-	1
Articles in Professional Journals and books	-	110
Reports - a) On activities of ATREE	-	2
b) Research and other reports	-	3
Newsletters - a) ATREE branches	-	3
b) SARACA	-	4

It is interesting to note that all the publications are exclusively in English. Except Reports and Newsletters giving the details of the activities of ATREE, all others are research based and scientific in nature. In addition to this, a brochure with an introductory note on ATREE is available. As such, publications cater only to the professionals, not to the general public.

No publication is found regarding Environmental Education as such. The reports, newsletters and brochure are colourful, quite attractive and appealing; moreover, they are quite comprehensive and comprehensible.

4.1.2.6. Linkage with Schools and Other Organisations

a) Linkage with Schools: ATREE has established association with eight schools in Bangalore City for its EE programmes and Table 4.4 presents the list of those schools.

b) Linkage with other Organisations: ATREE is associated with the following organisations for its EE programmes.

- Centre for Environmental Education (CEE)
- Centre for Science and Environment (CSE)
- University of Agricultural Sciences (UAS)
- National Museum for Natural History (NMNH)

Table 4.4: List of Schools Linked with ATREE

Sl.No	School	Address	Phone No.
1.	Bishop Cottons Boys School	Residency Road, Bangalore-560025	22210268
2.	Bishop Cottons Girls School	St.Marks Road, Bangalore-560025	25570970
3.	FAPS	Cambridge Layout, Bangalore - 560008	28440919
4.	GEAR Innovative International School,	Doddakannali, Outer Ring Road, Bangalore-560035	28462506
5.	Mallya Aditi	Yelahanka, Bangalore	23620364
6.	Poorna Learnig Centre	Kodigehalli' Sahakaranagar, Bangalore-560092	
7.	Vidyaniketan Public School	Kempapura, Hebbal, Bangalore-560024	23531340

4.1.2.7. Funding

Some of the funding agencies from which ATREE gets funds are mentioned, but the details of the funds received are not indicated. It gets funds from the Government also for research, but has not taken any schematic fund for EE programmes.

4.1.3. Conclusion

On the whole, 2 out of 3 key informants opine that ATREE is a small institution with good credibility and is doing considerable work in biodiversity conservation as well as environmental education ; it is trying to reach the target groups all over India. According to another person, it is an organisation mainly involved in basic research on ecology and environment; is moderately effective in EE programmes and is still in the growing stage.

4.2. NGO 2: Eco-Watch (Centre for Promotion of Environment and Research)

4.2.1. Eco-Watch - At a Glance

Address	: 403/404, 18 th Cross, New Diagonal Road, Jayanagar, 3 rd Block, Bangalore - 560011
Telephone Nos.	: 26655070 / 9845288263 (Mobile)
Fax	: _____
Email	: echowatch22@yahoo.com / canopy@rediffmail.com
Contact person	: Mr. Suresh Heblikar/Mr. Akshaya Heblikar
Year of establishment	: 1995
Year of initiation of EE programme	: 1997
Type of NGO	: Grass roots
Thrust areas	: Environment education, water conservation, solid-waste management, afforestation, eco-development, urban pollution control, tribal welfare and urban forestry
Objectives of the NGO	: Environmental awareness and conservation
Geographical coverage	: Bangalore, Dharwad, Kolar, Tumkur, Haveri and Western Ghats
Target group	: Teachers, students, youth, general community and corporate sector
Funding agency	: Government, NWF, donations/ sponsorships and self generation
Other supporting organisations	: ESCAPE, State Pollution Control Board

4.2.2. Eco-Watch - In Detail

4.2.2.1. About Eco-Watch:

Eco-Watch, Centre for Promotion of Environment and Research, founded in 1995, is an action-oriented organisation and it intends to address itself seriously to various environmental issues by developing and conducting relevant programmes for the benefit and knowledge of people. This mainly aims to create awareness among students, teachers, general community, policy makers and corporate sector, and to conserve water as well as ecology.

Eco-Watch is a Trust with 5 members (Chairman, Vice-Chairman and 3 Trustees), 7 Associates, 2 Field Staff and an Advisory Committee of 7 members. Further, it has an office consisting of totally 10 persons (including 1 Technical Assistant., 2 Field Assistants. and 3 Research Associates) among whom 4 are fulltime employees and 6 are volunteers. It is a point of compliment to Eco-Watch that the members of the Trust and Associates, Advisory Committee are highly educated with high credentials and rich experience in the field of environment. The Chairman himself is a well-known environmentalist, a very distinguished and dynamic personality with an MA in Economics and a Diploma in Marketing and Advertising. He is involved in many activities in the field of environment, has delivered lectures, has made presentations at conferences and seminars, has acted, directed and produced many feature films in Kannada and documentaries on environmental issues; has been a member of many bodies/committees of Karnataka Govt. (Pollution Control Board, Forest Dept. etc). Further, he has received many Awards, including Kempegowda Award from Bangalore Mahanagara Palike, Rajyostava Award from Karnataka Govt., B.M. Persis Award from Corporate Management and Paul Haris Fellowship from International Rotary Foundation. He is considered one of the authorities in the field of Environment.

Eco-Watch's uniqueness is reflected in the statement expressed emphatically by its chairman: "There is a need to stave off this peril of environmental catastrophe and it could be possible if all of us tried to become a little more spiritual and philosophical, and lived a simple life." Another unique point is that it is run by a distinguished pair of a father (Mr. Suresh Heblikar) and son (Mr. Akshay Heblikar) having the same conviction and commitment, and also vision regarding environment. The father is a Kannada film actor and director as well as a well-known environmentalist, whose dream is to turn environment into a religion; and the son is a post-graduate, pursuing Ph.D in Environmental Science, who is equally concerned with environment protection and has high credentials in the field of environment

through his projects, presentations and association with his father.

The programmes are mainly conducted at the Centre, which is situated in Mantapa village, adjacent to the Bannerghatta National Park. Sometimes, depending upon the target group and the nature of activity, they are conducted at different places. The campus of the Centre consists of a library, a pond created by rain-water harvesting, varied species of herbs, shrubs and trees that are planted by students and members of Eco-Watch. It is ideal for conducting camps, field trips, study tours and other physical training and field work for students. Since the bio-diversity around the area is constantly being improved by Eco-Watch and other volunteers, a variety of bird life and various life forms like insects, moths, butterflies etc. are now observed around the centre. A number of regular studies and nature camps (with Resource Persons) are held for different schools, colleges and other interested target groups.

4.2.2.2. Programmes/Activities of Eco-Watch

The programmes of Eco-Watch consist of Environmental education programmes/activities, projects for eco-development, research activities, and films and stage/street plays.

A. Programmes Organised During the Last 5 Years - 1998 to 2003

i) Environmental Education Programmes

Varied nature of programmes have been organised in and around Bangalore, and also in different districts of Karnataka. The details of the programmes organised by the Eco-watch for the last 5 years (1998-2003) have been presented in Table 4.7. Further, the details regarding the follow-up activities, success stories, future plans, mode of publicising the programmes, effectiveness of the programmes and the co-operation from the community/participants have also been presented under this head.

ii) Projects for Eco-development

Various projects have been taken up by the members of Eco-Watch, to promote eco development. The details have been given in Table 4.6.

iii) Research

Eco-Watch has taken up research activities to strengthen the foundation of knowledge upon which conservation decisions are made (Table 4.7).

Table 4. 5: Environmental Education Programmes

Sl.No	Programme	Target Group	Content	Methods/Materials Used
1	In Bangalore : Awareness Programme-cum Film show (with WWF and PEAS)	School and college students	Environment protection	Quiz, competitions, film show, tree planting
2	4 Day Study-cum-Adventure Camp at Kaveri Nisargadhama and Coorg	College students	River ecology	Adventure activities like river crossing, water rafting
3	Academic tour to Western Ghats region	College students	Survey of eco-system	Interaction with local communities, field survey and trekking
4	International Conference (with OISCA International, Japan) at IIAT, Bangalore	Professionals and college students	Man and environment - Govt. policies	Paper presentation, exhibition and demonstrations and talks
5	Training and Workshop	Members, volunteers of Eco-Watch	Eco-development, rain water harvesting and water management	Practical activities
8	Seminar	General public	Rain water harvesting, groundwater recharge, lake restoration	Traditional, simple and efficient techniques of conservation
9	Tree planting	General public	Solid waste disposal and management	Vermi composting
10	Awareness programme	High school students	Importance of trees	Talk and actual planting
11	Environmental Education and Training Camp	Students of spastic society of Karnataka	Environment conservation	Audio presentations, lectures, outdoor camps
12	Outside Bangalore Awareness Programme (At Chitradurga)	Coastal region communities School and college students	Aquaculture and Pisciculture Eco-system studies	Interaction with community people and talk Quiz, essay writing, painting, nature games
13	Wilderness Camp (at Chandavar, North Kanara District)	Scouts and guides	Role of youth and students in environment protection	Lecture-cum- discussion
14	Adventure Camp (with Bison Eiver Resorts group and Wildcraft at Kali river)	College students	Environment study and awareness	Bamboo rafting, kayaking, river crossing
15	Performance by Caroline Nderitu, an actress, poet and an environmentalist from Kenya	General public	Environment	Water rafting, trekking, outdoor camps
16	Workshop on environment and media with Indian Institute of Journalism and New Media, Karnataka State Pollution Board	School children Students, public, journalists	Environment - different aspects Environment and media	Activities on environment – poetry labs, performance and presentations by her Interactions and discussions

Table 4.6: Projects Undertaken to Promote Eco-Development

Sl. No	Title of the Project	Venue	Target Groups Involved
1	Tree planting and lake restoration	ISRO Layout, Bangalore	Students and residents of the layout
2	Survey on the impact of quarrying on the eco-system and the wildlife	Bannerghatta National Park	Project Associates of Eco-Watch
3	Little eco-friends	Bangalore City	Students
4	Water resource conservation including restoration of lake, creation of artificial water bodies, rejuvenation of wells	In and outside Bangalore City	Students and community people
5	Urbanforestry - senaranya with varied programmes - a. Massive afforestation - variety of tree species b. Programme with audio presentation by Johney Biosphere, Canada c. Medicinal plant garden etc.	ASC Centre, Airport Road, Bagalore City	Students, teachers, dignitaries and community people
6	Establishment of green patches	In and around Bangalore	- do -
7	School bio-diversity register project	Tumkur District	School students
8	Green teachers workshop - training for teachers	Tumkur and Kolar Districts	Teachers and students
9	Geneplasm bank/gene pool - identification and collection of diverse tree species	ASC Centre, Bangalore	Public, students and teachers

iv) Films and Stage/Street Plays

Eco-Watch has made films on the status of Indian environment, socio-economic impacts of unplanned growth and expansion of urban centres, global environmental scenario which have been widely telecast on different channels and networks regularly on the state as well as national network. Some of the major films dealing with environmental aspects have been listed here in Table 4.8. Some films have been awarded at the National and International levels (for excellency).

B. Follow-Up Activities

Follow-up work is difficult. However, follow-up has been taken up with the urban forestry at Bangalore and lake restoration at Kolar and Tumkur. In case of other programmes, no follow-up has been taken up with the same batch of participants in the same area of focus as different programmes cater to different participants. However, there has been an attempt to have follow-up with the same schools, teachers and same category of students like high school or college students etc. This has enabled the Eco-Watch to reach a wide array of people from different strata of the society and make them environmentally conscious.

C. Success Stories

- Green Teachers' Workshop in Tumkur and Kolar Districts: Teachers are trained in the area of Bio-diversity education for students.
- Creation of an urban forest as a model for urban environmental improvement
- Restoration of lakes and creation of artificial water bodies.
- Establishment of green patches in and around Bangalore and other Districts in Karnataka.
- Documentaries on environmental issues. Some of them have been awarded at the National and International levels.
- 'Little Eco-friends'; a group of students trained by Eco-watch (4 students have been awarded Volvo International Award in the programme held at Sweden).
- School Bio-diversity Register Project in Tumkur District with CES, Bangalore.
- Urban Area Networking for tree conservation - Development of Forest, with Tumkur Science Centre and Aganag Adventures Centre, Kolar.
- Gene pool/Genepiasm Bank - conserving variety of species of plants

and trees in the South Eastern Dry Zone (Bangalore, Kolar and Tumkur).

D. Future Plans

- Green Teachers Workshop - to be extended to northern part of Karnataka (Raichur and Haveri).
- Documentary films on different environmental issues.
- Forestry project involving students.
- Tie up with SDM Engineering College at Dharwad for the restoration of a lake and rain water harvesting (work has already been initiated).
- Environmental Education Newsletter.
- Study of hotspots of Bangalore.

E. Other Details on the Programmes

The programmes of Eco-Watch are publicised through advertisements in print, radio, personal contact, friends and employees of the NGO. All the programmes have been reported as effective to the extent of 75 per cent to 90 per cent. The co-operation from the participants has been rated between 75 per cent and 90 per cent, whereas from the community it has been rated as 50 per cent to 60 per cent. The resource persons involved in these programmes are really resourceful with their remarkable credentials and rich experience in the field.

4.2.2.3. Approaches/Methods and Materials Used

By considering the details of the programmes as provided by the NGO, it has been found that the most commonly adopted approach is participatory and interactive. Lectures, field trips, demonstrations, discussions and project work are the methods used in the EE programmes. First hand experience/practical orientation is emphasised and the participants are encouraged to involve either individually or in groups. The resource material published in the form of booklets, pamphlets (listed under publications), which are specific to the respective programmes conducted at different places are used and distributed to the participants

4.2.2.4. Evaluation Procedure Followed

Eco-Watch has not practised any formal evaluation of the effectiveness of the programmes organised by it. The programmes are evaluated by getting general opinion orally from the participants and through small write-ups from the students as well as teachers at the end of the programme. Sometimes, paper statements/cutouts about the programme (after the programme) are also considered. But, no structured/standard pro

Table 4.8: Documentaries and Short Films on Environment and Education

Sl. No	Title	Duration	Content	Remarks
1	Shepherds on the move	15 min.	Relation between man, animal and nature - lifestyle and livelihood in this present world, of shepherds of North Karnataka	Won the United Nations - FAO Award 'Osiris' at the International Agro Film Festival 2002, held at Nitra, in the Slovak Republic under the theme - Bread and Peace to All People
2	Ecology of the Western Ghats	20 min.	Different types of eco-system, vegetation patterns, flora and fauna, and other unique features of the W. Ghats (Karnataka) and the impact of its destruction and degradation	
3	Jewels of the Western Ghats	18 min.	Early days of W. Ghats of Karnataka and its gradual degeneration and degradation; wildlife conservation	British Tourism Award (National Level)
4	Greening the barren lands	22 min.	Impact of industrialisation on precious forests, especially on bamboo and cane forests	
5	Bio-mass for energy	13 min.	Details of the technique and the methodologies used in getting energy from the bio-mass	Also covers its utilisation in certain villages
6	Rural sanitation	25 min.	Construction of twin-pit-latrines in the villages of North Karnataka and Bangalore Dist.	Telecast in various cable and national networks to create its awareness
7	Low-cost efficient technologies	25 min.	Low-cost fuel-efficient technologies for rural industries like area, jaggery -making, rubber and so on	Highlights the reduction in the dependence on wood as fuel

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Table 4.7: Research Projects Carried Out by Eco-Watch

Sl.No	Title	Duration	Content
1	Environmental scenario of Vaddarahalli Watershed area	4 months	Changes due to the exploitation of watershed area for various purposes and remedial measures for improving this watershed area
2	Impact of selective felling on the structure and composition of soil in disturbed and natural forests of Western Ghats	4 months	Effect of selective logging on the quality of soil and in turn, on the surrounding eco-system in two different regions of Kudremukh National Park
3	Role of soil in global warming	5 months	Analysis of soil samples and its impact on vegetation and crops, and other flora
4	Socio-economic status of the inhabitants of Kudremukh National Park	5 months	Depletion of natural/forest resources due to mining and its impact on communities
5	Impact of selective felling on the vegetation dynamics in disturbed and natural forests of Western Ghats	5 months	Diversity of tree species in disturbed and natural forests, which were subjected to selective felling around 30 years ago
6	Vegetation analysis of Uttara Kannada District using geographic information system(GIS) and Remote Sensing Techniques	5 months	Study of vegetation types, land use and land cover pattern of Uttara Kannada District, and its mapping using GIS techniques
7	Economic upliftment of TRIBES inhabiting Nagarahole National Park	2 months	Study of community development, culture and livelihood of Nagarahole tribes
8	Socio-economic status of local communities in North Kanara Dist.	2 months	Depletion of natural/forest resources and its impact on the surrounding communities
9	Collection and maintenance of diverse tree species of South Eastern Dry Zone of Karnataka at Bangalore, Kolar and Tumkur under forestry programme	2 months	Study of diverse plant species by students and teachers

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Sl. No	Title	Duration	Content	Remarks
8	Gorukana	30 min.	Work by Vivekananda Girijana Kalyana Kendra for the welfare of Soligas in BR Hills	
9	Waste to Wealth	4 min	Indigenous technology for converting industrial waste into energy	Short video film
10	Solar Energy - A Future Alternative	12 min.	Applications of solar energy, equipments and technologies that aid in using them	Highlights efficient use of solar energy in India
11	Wasteland Development	12 min.	Deforestation into wasteland and the steps taken to develop these wastelands	
12	Water	3 min	Conservation and efficient utilisation of water	Telecast on various national and state networks
13	Lakes	15 min	Importance and present status of lakes, need to restore them	
14	Solid Waste Management	12 min	Conversion of organic waste into bio-fertiliser; Vermi-composting	Focused on the garbage generated in Bangalore city
15	Tobacco the Devil	25 min	Ill-effects of tobacco consumption	
16	Oiling the Wheels of Economy	25 min	Process of oil refining and the treatment of the waste generated in the process	
17	Gandu Mettida Nela	25 min	Environment, agriculture, culture of Dharwad	Karnataka State Govt. Award for the best documentary film
18	Shakthiya Moolagalu	15 min	Application and technologies of different sources of energy	Science Jatha Award

forma is being used for this purpose. The programme organised by any other funding agency is evaluated by that agency using its criteria prescribed for the purpose.

4.2.2.5. Publications

According to the list of publications available, it has been found that there are quite a number of publications in the form of small books, booklets, brochures and pamphlets as resource material on different topics considered for different programmes. Additions to the list are a brochure with an introductory information on Eco-watch and annual reports, which are very simple in printing and apt for the purpose. All the publications are in both the languages Kannada and English, and are adequate as well as suitable to the level of the target groups; not highly technical in nature. The material for publication is prepared by the Resource Persons on their first hand experience and ground reality. 'Green Teachers Training Manual' (in Kannada) is complimented as quite a comprehensive guide for teachers, students or those who are interested in the study of eco-system. The books entitled 'Environment and You' and '*Navu mattu Parisara*' are well received by the people.

4.2.2.6. Linkage with Schools and Other Organisations

a) **Linkage with Schools:** Eco-Watch has established association with ten schools in Bangalore city for its EE programmes and Table 4.9 presents the list of those schools.

Table 4.9: List of Schools Linked with Eco-Watch

Sl. No	School	Address	Phone No.
1.	Cambridge Public School	H.S.R Extension layout, Bangalore-560034	25723839
2.	Cambridge Public School	Koramangala, Bangalore-560034	25531094
3.	Janak Vidyalaya	Bannerghatta Road, Hulimavu, Syndicate Bank Colony, Bangalore-560076	26581477
4.	East West School	Armugam Circle, Basvanagudi, Bangalore-560004	26572536
5.	Embassy Public School	Magadi Road, Bangalore-560091	
6.	A.P.S Public School	N.R. Colony, Bangalore-560019	26602586
7.	Sudharshan Vidya Mandir	4 th T Block, Bangalore-560041	26646221
8.	Canadian School of India	Kodigehalli, Sahakarnagar, Bangalore-560092	23438414
9.	Bright High School	Victoria Layout, Bangalore-560095	25712191

b) Linkage with Other Organisations :

Eco-Watch is associated with the following organisations for its EE programmes.

- Centre for Environmental Education (CEE)
- Centre for Ecological Sciences (CES)
- Environment Health Foundation (EHF)

4.2.2.7. Funding

In general, the fund is self-generated through the sale of educational material (booklets and documentary films) and other contributions. But, no information is given about the details of the funds received or spent. Eco-watch gets funding for some of its programme through State/Central Governments - Pollution Control Board, Dept. of Ecology and Environment, INEP and sponsorship from various trusts as well as individuals.

4.2.3. Conclusion

On the whole, all the 4 key informants express that Eco-Watch as an organisation, is doing good work in creating environmental awareness among the public and especially student community on key environmental issues, and also in the conservation of bio-diversity. It has been considered one of the best NGOs and awarded the 'Best Environmental Group Award' by the Rotary Club, Bangalore.

4.3. NGO 3: THE YOUNG MEN'S CHRISTIAN ASSOCIATION (YMCA)**4.3.1. YMCA - At a Glance**

Address	: 66, Infantry Road, Bangalore - 560001
Telephone No.	: 25591681 Fax: 91-80-25591583
Email	: arun_karodi@yahoo.com/ ymca_bangalore@vsnl.com
Website	: www.ymcablr.net
Contact person	: Mr. Arun Kumar
Year of establishment	: 1900
Year of intiation to EE programmes	: 1991
Type of the NGO	: Grass root
Thrust areas	: Serving the abused, demoralised and involving in women issues(SADWI), rural development, ecology and environment, secularism issues,

	youth issues
Objectives of the NGO :	Rehabilitation of street children, vocational guidance, creating environment awareness; facilitating integrated development of the personality-body, mind and spirit
Geographical coverage :	Karnataka including Bangalore, India and different Nations
Target group :	Students, teachers, youth, street children, rural people, Women and others
Funding agencies :	Government, donations and self generation
Other supporting organisations :	CES (Prof. Madhav Gadgil), CEE

4.3.2. YMCA - In Detail

4.3.2.1. About YMCA

The YMCA, Bangalore, is a non-profit, service-based organisation which was started in the year 1900. It was started primarily as a youth movement. Besides providing its members with sports, games and recreational facilities, it has been serving the cause of humanity through various community-based programmes especially for the betterment of the economically weaker sections or the less privileged. It was in the 1980s that the YMCA, Bangalore, thought of focusing on some of the burning issues of Bangalore City. So, five task groups focusing on different thrust areas were formed under the dynamic leadership of Shri. M. J. Narendranath, General Secretary, YMCA, Bangalore. The following are the task groups:

Task Group on Youth Issues.

Task Group on Secularism.

Task Group on Ecology and Environment.

Task Group on Rural Development

Task Group SADWI (Serving Abused, Demoralised and Women Issues).

The YMCA is a well-established organisation with a Board of Directors, secretarial and office staff with General Secretary as the head. The Task Group on Ecology and Environment consists of 27 members, including Chairman, Vice-Chairman and Secretary. The members of the Board, the secretarial staff and the Task Group are all experienced persons with service motto and commitment to reach the goals of the organisation. The YMCA General Secretary, Shri M.J. Narendranth, is a dynamic person, has travelled all over the world and has high regards for India. He considers India as a sacred land with 5,000 years of history glorifying the significance

of environment and its protection. He has served YMCA in different capacities, has been a member of different committees of sports; is a recipient of Karnataka State Rajyostava Award for his unique contribution to youth activities and sports organisations. Shri Arun Kumar Karodi, Senior Secretary in charge of the Task Group on Ecology and Environment, is also an active person and works for the promotion of EE, YMCA. In addition to its main office, it has many branches and projects in different areas of Bangalore City. But, the data required for this study were collected from the office at the above-mentioned address, the central place for the Task Group on Ecology and Environment.

YMCA is an international organisation networked globally as the World Alliance of YMCAs with its headquarters in Geneva, Switzerland. It was founded by Sir George Williams with a small group of young people in 1844 in London and now it is spread over 126 countries. The YMCA's mission is to identify the social, cultural, physical and intellectual needs of mankind and cater to these needs by facilitating the integrated development of the threefold aspects of human personality - the body, mind and spirit - which is enshrined in the YMCA emblem, the equilateral triangle. The YMCA the world over is committed to building healthy individuals, families and communities, and striving hard to usher in the reign of God where people live in harmony, peace and justice. This mission, in general, is perpetuated in all the YMCAs. However, this general mission statement has been reworded (not affecting the core theme) by different YMCAs to meet the requirement of the respective societies. As such, YMCA, Bangalore, has its own mission statement - general and particular statements for each of its task groups. As the focus of the present study is on Environment Education, the details of the **Task Group on Ecology and Environment** only have been considered here.

Mission Statement of YMCA, Bangalore

The Young Men's Christian Association of Bangalore seeks to unite people to build a just and equitable society, where the individual freedom will be enhanced to develop a human community from all faiths under the parenthood of God. The YMCA will celebrate, preserve, enhance and sustain creation in which people will be inspired to grow and work towards the reign of God. The YMCA will continue its struggle against oppression, marginalisation, poverty, violence and empower men, women and children in crisis so that the homes will become the witness of the creator God.

Mission Statement of Task Group On Ecology and Environment

The Bangalore YMCA Task Group on Ecology and Environment believes that living and non-living creations and their interaction and inter-dependence are gifts of God. The five elements, namely, earth, water, air, fire and space, constitute the whole cosmos. Therefore, it re-affirms to work with people towards creating awareness and as a movement for preservice, sustenance of flora and fauna, and cosmic elements, and to usher ecology and environment of this earth where integrity of creation will be a cherished value.

The YMCA's uniqueness is reflected in its mission statement, which speaks of everything in the name of God and emphasises the parenthood of God for human community. It envisions a just and equitable society with integrated personalities, who work towards the reign of God. The Task Group on Ecology and Environment believes that the cosmos in which we are living is the gift of God and is made up of *panchabhoothas*, which are to be respected and protected. This upholds their belief that the spiritual orientation among people is very much required to minimise the problem of environment degradation and to lead a comfortable life.

4.3.2.2. Programmes/Activities of YMCA

The programmes of YMCA consist of Environmental Education programmes/activities, projects for eco-development/environment protection. The details have been presented in the tables given below. Many programmes are conducted at different places in and around Bangalore, whereas some of the awareness programmes and camps are held at YMCA rural centre, Kumbalgodu. This centre located in a serene atmosphere has varied species of trees and medicinal plants with restored vrishabhavathi river flow, community hall and other facilities required for the camps.

A. Programmes Organised During the Last 5 years- 1998 to 2003

i) Environmental Education Programmes

The details of the programmes organised by the YMCA in the last 5 years (1998-2003) have been presented in Table 4.10. Further, the details regarding the follow-up activities, success stories, future plans, mode of publicising the programmes, effectiveness of the programmes and the co-operation from the community/participants have also been presented under this head.

Table 4.10: Environmental Education Programmes

Sl.No	Programme	Target Group	Content	Methods/Materials/Activities Used
1	Awareness and Action Programmes	Teachers of rural school Slum women Club members and children College students	Use of medicinal plants - do - Water management Conservation of fuel Air and vehicular pollution, garbage problem, save B'lore	Slide show, fieldtrip, lecture Lecture-cum-display lecture, eco-quiz Home composting, poster exhibition, discussion
2	World Environment Day (every year)	Students, teachers, public	Environmental awareness and protection	Talks, video programmes, tree planting, competitions
3	Competitions (every year)	Students	Different aspects of environment	Debate, essays, posters, street plays, painting.
4	Exhibition	Students and teachers	Medicinal plants	Plants collection, display and presentation
5	Clean Air Campaign (quite often)	Public and college students	Air, noise and vehicular pollution	Interaction and execution of certain measures - listing the vehicles which violate rules etc.
6	NEEP Scheme programme i. Awareness programme ii. Training iii. Workshop	School students Teachers Teachers	Environment awareness and environment education Environment education Water as a natural resource	Activity booklet ' I in the Env't' Activities, skits, expts. Prepared a booklet in Kannada (activity based instructional material)
7	NEAC Programme One day workshop	Students of Physical Edu. College College students	Environmental awareness and education Air pollution control	Prepared resource material for EE on water (booklet) 300 two wheelers were emission checked
9	Awareness programme for environment promoters	Students	Tree planting and nurturing	Training in rising saplings
10	Tree planting	High School and college students	Tree planting - need and action	Planting saplings

ii) Projects for Eco-Development

Various projects have been taken up by the members of YMCA to promote eco-development. The details have been given in Table 4.11.

Table 4.11: Projects Undertaken to Promote Eco-Development

Sl. No	Title of the Project	Venue	Target Groups Involved
1	Save Bangalore Movement (95-99) - with multiple programmes like campaigns, protests etc.	Bangalore city	Community, students, service agencies
2	Environment promoters - involved in planting and maintaining trees	Bangalore city	Students
3	Vrishabhavathi river cleaning	-do-	Public, Govt. bodies - Pollution Control Board, BWSSB
4	Eco Clubs (in different schools)	-do-	Students, teachers
5	Massive tree plantation (centenary mega project since 2000)	-do-	Students, teachers, community
6	YMCA Aqua Watch (for the problem of drinking water and underground water)	-do-	Community, students
7	Environment orientation in school education (EOSE) - preparation of Naliyuttha Kaliyona and its implementation	-do-	Teachers

B. Follow-up Activities

Follow-up was taken up with all the project works, but with some programmes they faced some difficulty. In case of other programmes, no follow-up could be taken up with the same batch of participants in the same area of focus as different programmes catered to different participants. However, there has been attempts to have a follow-up with the same schools, teachers and same category of students like high school or college students etc. This enabled YMCA to cover larger number of people under EE programmes

C. Success Stories

- Save Bangalore Movement.
- Vrishabhavathi River Cleaning.
- *Naliyuttha kaliyona* (workshop for teachers).
- Environment Promoters.
- Massive Tree Plantation.

D. Future Plans

- Set up 500 Eco-clubs within a span of 10 years.
- Eco-camp for school children.
- Workshop on rain water harvesting.
- Various Environmental Education Programmes.
- Revive Save Bangalore Movement.

E. Other Details on the Programmes

The programmes of YMCA are publicised through advertisements in print media, on radio and TV, and through personal contact, friends and employees of the NGO. All the programmes are reported as effective to the extent of about 90 per cent, as all the programmes are well-organised and experienced Resource Persons are involved. The co-operation from the participants is rated about 90 per cent, whereas from the community it is more than 75 per cent. The Resource Persons involved in these programmes are resourceful with their high credentials and rich experience in the field. It is remarkable to find Shri A.N. Yellappa Reddy and Late Fr. Cecil Saldhana, both committed environmentalists, on the list of Resource Persons of YMCA.

4.3.2.3. Approaches/Methods and Materials Used

By considering the details of the programmes as provided by the NGO, it is found that the most commonly adopted approach is participatory and interactive. Lectures, field visits, discussions and project work are the methods employed in the EE programmes. Various activities like slide shows, games, skits, competitions and displays with audio-visual aids are used. The resource material in the form of booklets, pamphlets are distributed to the participants only in certain programmes.

4.3.2.4. Evaluation Procedure Followed

Generally, the effectiveness of the programmes organised by the YMCA is being evaluated informally by getting oral feedback from the participants at the end of the programme. No structured pro forma for this is thought of. However, an attempt has been made to prepare a questionnaire for pre- and post-evaluation of a particular programme on 'water conservation'. Time given is 10 minutes each. The questions included do not focus on the important part/components of the programme. It is nothing but another way of getting the opinion of the participants, i.e., in written form.

4.3.2.5. Publications

The YMCA's publication is very limited and consists of Annual Reports (Programme Consultation), Newsletter (Footprints), Manual of EE Activities in Kannada (*Naliyutta Kaliyona*), Brochure and Pamphlets (both in Kannada and English). Of these, the Manual of EE Activities in Kannada is apt and adequate, well received by teachers and students; Annual Reports and Newsletters are colourful, attractive and of high quality print, but exhibit too much of repetition of activities of YMCA.

4.3.2.6. Linkage with Schools and Other Organisations

a) Linkage with Schools: YMCA has established association with thieteen schools in Bangalore city for its EE programmes and Table 4.12 presents the list of those schools.

Table 4.12: List of Schools Linked with YMCA

Sl.No	School	Address	Phone No.
1.	Iqra High School	R.T.Nagar, Bangalore-560032	23631171
2.	Lourdes High School	Cubbonpet, Bangalore-560002	
3.	Mahila Seva Samaj	K.R.Road, Bangalore	26673391
4.	Mitralaya High School	Mission Road, Bangalore-560027	22237442
5.	National Public School	H.A.L II Stage, Bangalore-560008	25280611
6.	New Horizon English High School	100 ft Road, Indiranagar, Bangalore-560008	25261528
7.	Sarvodaya High School	Jayanagar II Block, Bangalore	
8.	Sarvodaya High School	Hulimavu, Bannerghatta Road, Bangalore-560076	
9.	Sri Vinayaka High School	Cubbonpet, Bangalore -560002	22210459
10.	Indian High School	Grant Road, Bangalore-560001	22212570
11.	Tracey Memorial High School	St.Marks Road, Bangalore-560025	25595235
12.	Turnbridge High School	Infantry Road, Bangalore - 560001	25582813

b) Linkage with Other Organisations :

YMCA is associated with the following organisations for its EE programmes.

- SMILE GROUP, Bangalore.
- Lions Club - Orchards, Bangalore.
- Rotary Club - Peenya, Bangalore.
- Amp SAWMAR Ltd.

4.3.2.7. Funding

YMCA indicates that it gets funds from State/Central Government schematic projects, German YMCA, Rotary and Lions Club, in addition to local donations, but the details of the funds received are not indicated. However, it has given the total amount spent on the programmes and the proposed budget for the programmes to be held during 2004. The unit cost, for all the programmes, and the range of unit cost was calculated. It is found that the range of unit cost is Rs.15/- to Rs.500/- in case of completed programmes and Rs.15/- to Rs.800/- in the proposed programmes.

4.3.3. Conclusion

All the 4 key informants opine that YMCA, Bangalore, as an NGO, is acting as an effective instrument of spreading God's love and concern for human kind through its multifaceted programmes. It has proved itself effective in creating environmental awareness among the community people and school children.

CHAPTER V

EFFECTIVENESS OF THE PROGRAMMES OF NGOs

The effectiveness of the EE programmes of 3 case-study NGOs (objective 3 and research question 3) was studied through impressionist approach, wherein the perceptions of key informants, participants and public about the programmes (number, nature, effectiveness, limitations and suggestions for improvement) were considered. For this purpose, data were collected through questionnaires, interviews and field visits for verifying physical artifacts, and the details have been presented in this chapter.

5.1. Perception of the Key Informants

Totally, 11 Key informants (3 from ATREE, 4 each from Eco-Watch and YMCA) were interviewed and the details of the analysis of their responses regarding the effectiveness of the programmes/NGO have been presented below:

Two out of 3 Key informants rated ATREE at 75 to 90 per cent effectiveness because of systematic and thematic approaches, scientific data-based fieldwork and publications, whereas one person rated it at less than 50 per cent effectiveness considering it a new NGO which is yet to establish itself well.

Three out of 4 Key informants rated Eco-Watch at 75 to 90 per cent effectiveness as they could reach out various sections of the society - students, teachers, public (urban and rural) and promote environmental awareness, whereas one person indicated it between 50 per cent and 75 per cent as this NGO is yet to work throughout Karnataka to reach its goals.

All the four Key informants opined that YMCA was effective to an extent of above 90 per cent as all the programmes were well-organised involving community and school children, executed through committed personnel and proved effective as per the oral feedback got from the participants at the end of the programmes.

5.2. Perception of Participants

Totally, 43 (ATREE 14, Eco-Watch 14 and YMCA 15) participants who were available, accessible and approachable (mostly those who attended the programmes for the last 2 years only) were considered and the details of the analysis of their responses have been given in the following paragraphs.

5.2.1. Participants' Profile

Out of the 14 participants of ATREE, 7 were teachers of age group (42-49 years) and 7 students of 11/12th Std (17-18 years). As ATREE is basically research-oriented and academic in nature, it caters only to the educated class, that too mainly to teachers and students in Bangalore city. It is interesting to note that all the participants (except one) were females only, whereas, all the 14 participants of Eco-watch were female teachers of 25-45 years of age (9 graduates and 5 post graduates) and all the 15 of YMCA were males, out of whom 10 were students of 10th std and 5 were officials (3 undergraduates and 2 post graduates). From this data, it could be inferred that all the three NGOs mainly catered to the educated class of people, particularly teachers and students and preferably teenagers and middle age group people. This raises a question: why this preferences to gender and educated class of people by NGOs in their programmes?

5.2.2. Programmes Attended by the Participants

Considering the number and nature of the programmes organised and the methods/materials used, it is evident that Eco-Watch had organised more number of programmes and of varied nature, used adequate material and provided some reference material too to the participants. Although YMCA had organised adequate number of programmes, they appeared to be rally type and competitions and the materials were given to the participants only in a few programmes (not adequate), whereas the programmes of ATREE were less in number and were of talks/ lectures type, with no material given to the participants.

Totally, 56 per cent of the participants (24 out of 43) expressed that the programmes organised by the NGOs were knowledge-oriented whereas 44 per cent (19 out of 43) indicated that the programmes were both knowledge and action-oriented ones. From this, it is concluded that more number of programmes by the NGOs were knowledge-oriented rather than action-oriented. Comparison of the responses for 3 NGOs separately indicated that Eco-Watch was rated higher for action-oriented programmes than the other 2 NGOs.

5.2.3. Motivation to Attend the Programmes

Of the total 43 participants from all the three NGOs, 6 were motivated by the NGOs and 7 by friends, whereas all the remaining teachers were motivated by their colleagues and the students were motivated by the teachers in their respective schools. No incentive was given to the participants. This indicates that more people were not motivated by the

NGOs and this raises a pertinent question: what should be done by NGOs to motivate the people to get more participants for their programmes?

5.2.4. Effectiveness of the Programmes

More number of participants (20 out of 36) opined that the programmes were effective to an extent of 50 per cent to 75 per cent whereas (14 out of 36) indicated 75 per cent to 90 per cent level effectiveness. From this, it can be concluded that most of the programmes of the NGOs were found to be effective at the level of 50 per cent to 75 per cent and certain programmes were effective to an extent of 75 to 90 per cent. This suggests that the NGOs should look into the factors responsible for the low level of effectiveness and try to make the programmes more effective.

5.2.5. Achievement from the Programmes of the NGOs

**Table 5.1: Achievement from the Programmes of the NGOs
(Multiple Responses)**

ACHIEVEMENT	ATREE	ECO-WATCH	YMCA	TOTAL
Awareness and sensitivity to environment problems	5	7	7	19
Knowledge of environmental and related problems	4	7	8	19
Positive attitude towards environment protection	3	9	8	20
Skill of sustainable use of environment	3	5	5	13
Sensitivity to do something towards environment conservation	2	6	6	14
Any other, specify	-	-	-	-

Less than 50 per cent of the participants had responded to this question. Of them, a majority of the respondents had indicated environmental awareness, knowledge and positive attitude towards environment protection, followed by sensitivity to do something towards environment conservation. The least indicated goal was the skill of sustainable use of environment. A comparative study indicated that despite some minute differences, the trend of achievement from the programmes was similar in all the 3 NGOs.

5.2.6. Interesting Part of the Programmes

As per Table 5.2, it appears that the themes of the programmes and experienced resource persons were the most interesting part of the

programme. Provision for active participation and activities conducted appears to be the next interesting part of the programmes in that order. The least interesting part was the methods and materials used/supplied. On comparison, it is revealed that the most interesting part of the programme was the themes of the programme for ATREE, resource persons for Eco-Watch, active participation and activities conducted for YMCA. The 2nd preference of interesting part was resource persons for ATREE, themes of the programmes for Eco-Watch and YMCA. The least interesting part of the programmes for all the 3 NGOs was the methods and materials used/supplied. It is an important point to note that evaluation aspect was not at all considered by all the 3 NGOs.

Table 5.2: Interesting Part of the Programmes (Multiple Response Table)

Interesting Items	No. of Respondents			
	ATREE	ECO-WATCH	YMCA	TOTAL
Theme of the programme	5	6	7	18
Method and material used	1	3	-	4
Experienced and learned resource persons	3	9	5	17
Provision for active participation	2	5	8	15
Instructional material supplied.	-	5	4	9
Activities conducted	1	3	8	12
Evaluation procedure followed	-	-	-	-
Any other, specify	-	-	-	-

5.2.7. Implementation/Follow-Up of the Programmes

Very few participants responded to this item, and based on their responses it is found that the follow-up of the programmes was taken up by more number of participants from Eco-Watch whereas no considerable effort was put in this regard by the participants of ATREE and YMCA. It can be concluded that Eco-Watch was better than the other 2 NGOs in convincing people to take up further action after the programmes, ex: taking up rain water harvesting, growing ayurvedic plants in the garden.

5.2.8. Programmes Expected by the Participants

The most commonly expected programmes by the participants, from the NGOs were the programmes on different types of pollution and their control, follow-up programmes, camps and field trips. Very few participants expected community-based action programmes and seminars/workshops on different aspects of environment.

5.2.9. Problems Faced by the Participants

A majority of the participants (20 out of 43) reported no problems in attending the programmes. It is quite interesting to note that 17 out of 20 were students. Thirteen teachers reported the problem of distance and lack of transport facility to the venue of the programmes whereas other 9 (5 officials and 4 teachers) expressed the problem of lack of time to attend the programme and only 2 reported physical fatigue.

Students reporting no problem were quite obvious as they were quite free from all other burdens except their academic work, and teachers in the school or parents at home took responsibility to see that they attended the programmes. The only thing required on the part of the students was having interest in the programme. It is commendable that all the students who participated in the EE programmes of the NGO were interested in the programmes. Further, it is also quite clear that in a big city like Bangalore, the venue of the programmes would be distant and transport was a problem for some people (highly impossible to think of a place suitable to everybody in the city). If people were really interested in the programme, this would not be a problem at all. However, it is substantiated from the other related data that NGOs showed consideration in fixing the venue suitable to the majority of the participants.

5.2.10. Performance on Environmental Tests

From Table 5.3 one should infer that a majority of the participants from all the 3 NGOs had exhibited average performance on all the 3 Environmental tests - EKT, EAT, EABT - and very less number of participants were found in 'above average' and 'below average' category. This again supports the participants' ratings on the effectiveness of the programmes by the NGOs.

Table 5.3: No. of Participants at Different Levels of Performance in EKT, EAT and EABT

Tests	Above Average	Average	Below Average
ATREE			
EKT	1	13	-
EAT	1	12	1
EABT	1	12	1
Eco-Watch			
EKT	2	11	1
EAT	2	11	1
EABT	1	12	1
YMCA			
EKT	3	10	2
EAT	2	12	1
EABT	2	10	3

5.3. Perceptions of the Public

Totally, 15 people (5 for each of the 3 NGOs) including officials, teachers and students (households and some men from that area outrightly rejected our offer to interview them saying that they did not know anything about NGOs) were interviewed and the details have been given below:

5.3.1. ATREE

Regarding ATREE, there was no free access to meet the public and those public whom we met were not ready to interact with us. It was difficult to get people who could extend their co-operation in getting the information on ATREE. Three or four persons, who were so ignorant about ATREE, said outright, “we do not know anything about it”. One neighbour of ATREE office expressed that there was an office with the name board (ATREE), people came and went, but he did not know what was going on inside. One more person said, it collaborated with ISEC, Bangalore, in starting CIPED unit, but did not know other details about it. This indicated that ATREE, being more research-oriented towards meeting the challenges of environmental degradation and natural resources management particularly in Western Ghats, was an NGO working for EE, was out of reach to the public in Bangalore City. It was an exclusive organisation with restricted outreach; not known even in the circle of educated and elite class of people.

Two out of 5 persons who had responded indicated that they had just heard about the organisation as an NGO working towards EE and had seen the building, but did not know the details regarding what was going on inside it. The other 3 could come out with the details, which have been summarised as below:

1. Field trips, workshops, seminars and lectures/talks on important issues of environment for teachers and summer programmes for students were the programmes organised by ATREE. Most of the programmes were knowledge-oriented than action-oriented.
2. Though less in number, the programmes are effective in developing awareness and interest in environmental issues. Generally, the programmes catered to teachers and students.
3. It was very difficult to get the public involved in the programmes. However, there was good response from the participants.
4. Literature on research topics were published in the form of monographs, booklets and books, and they were very attractive and informative.
5. ATREE is a concerned and committed NGO working towards environment conservation mainly through research work and then EE programmes for teachers and students (both school and college). It is

an organisation with in-house programmes only for the elite group and is doing considerable work in Bangalore City.

5.3.2. Eco-Watch

Four or five members said that they were aware of the programmes of the Eco-Watch through newspaper write-ups (like urban forestry and lake restoration), 3 or 4 persons opined that it was a good environmental group in Bangalore, working towards environment conservation. But, all these showed reluctance to spare their time for a detailed interview. Totally, 5 persons co-operated for the interview and the summary of the interview with them has been presented below. This implied that the people were familiar with the existence of Eco-Watch and its activities in Bangalore City; it stood as a cynosure among other NGOs working on EE in and outside the City.

1. It is reported that Eco-Watch organised the following programmes—urban forestry, lake restoration, EE workshop for teachers, EE awareness programmes for the public and students, seminars for the public and teachers, demonstrations about certain environmental aspects, camps and field trips for students. Some programmes were knowledge-oriented and some were both knowledge as well as action-oriented.
2. All the programmes proved effective in developing environmental awareness and interest towards environmental protection. The programmes of Eco-Watch involved teachers, students, youth and public.
3. Reported positive and good response from the participants and public.
4. It is unanimously reported that Eco-Watch published quite a number of booklets, pamphlets and documentary films on different aspects of environment.
5. The common view about Eco-Watch was that it was doing good work as a NGO, making people to be aware of environmental problems and issues, and convince them to take up action towards environmental protection. It was working hard to reach more people in and outside Bangalore City.

5.3.3. Y.M.C.A

Four to five persons expressed that they were familiar with YMCA activities mainly through its sports activities, and then through ‘Save Bangalore’ and ‘Vrishabhavati river cleaning’ programmes. But, they did not co-operate for further probing about YMCA. Another 5 members co-operated with us for the interview and their views regarding YMCA have been summarised here. This implied that YMCA was also known to the

people as an NGO working for environmental protection in Bangalore City. The programmes conducted by the YMCA were:

1. Environment awareness programmes, 'Save Water' rally, 'Save Bangalore' workshops, seminars, street plays, debates, essay and painting competitions, tree-planting are the programmes organised by YMCA. Most of them were knowledge-oriented, some were both knowledge and action-oriented. All the programmes were meant for school children (both elementary and secondary).
2. All the programmes proved quite effective in promoting environmental awareness among students.
3. There was good co-operation from participants (schools) and public.
4. They published annual reports and handouts on certain environmental issues.
5. Generally, they opined that YMCA was doing good work in developing environment awareness and promoting environment protection.

Considering the above points, it can be concluded that all the three NGOs were doing good work regarding EE in Bangalore City; organising varied programmes exclusively for EE, out of which more number were knowledge-oriented and some were both knowledge- and action-oriented. This confirms the opinion of the participants that most of the programmes of NGOs were knowledge-oriented leading to the development of environmental awareness. All the programmes were quite effective (level not indicated) in promoting environmental awareness, and developing interest in knowing more about environment among the target groups. It is noted that ATREE programmes covered only teachers and students, Eco-Watch catered to youth and public too in addition to teachers and students, whereas YMCA targeted only students of elementary and secondary schools. This also indicates that Eco-Watch catered to the wider sector and was reaching more and more people than the other two NGOs who were focusing only on a select category of people. All the 3 have publications of their own, but differed about their utilisation by the public. This raises an important question about the utility and reach out of the publications by NGOs for the benefit of others.

From this analysis, it is concluded that the key informants had claimed higher level of effectiveness (75 per cent to 90 per cent) of the programmes/ NGO, whereas the perception of the participants and their performance on the environmental tests indicated 50 per cent to 75 per cent effectiveness. Further, the public also felt that the programmes were quite effective (level

not indicated) in creating awareness and interest in environmental issues among public, and the NGOs were doing good work in this regard.

5.4. SWOT Analysis

In order to determine the level of effectiveness of the 3 case-study NGOs - ATREE, Eco-Watch and YMCA - they were subjected to 'SWOT Analysis', considering the data collected from multiple sources. The SWOT Analysis provided information that was helpful in matching the organisation's resources and capabilities in the competitive environment in which it operated. In this analysis, the environment of an organisation was analysed in terms of the environmental factors internal to the organisation, i.e., Strengths (S) and Weaknesses (W), and the factors external to the organisation, i.e., Opportunities (O) and Threats (T). The level of effectiveness was determined by considering the total points on these 4 factors; higher points on the Strengths (S) and Opportunities (O) together, i.e., SO factors indicated the maximum level effectiveness. The comparative account of the SWOT Analysis done with respect to the case-study NGOs has been presented in Table 5.4.

From this SWOT analysis, it can be inferred that the single-purpose NGO with more points on Strengths and Opportunities, and less points on Weaknesses and Threats, i.e., Eco-Watch in this study, was considered to be better functioning and more effective NGO promoting NFEE than the other two. This implies that a single-purpose NGO with limited geographical coverage, led by dynamic leadership with professionalism, and which has upward linkage with other national/international agencies, steady and regular programmes, more action-oriented programmes with more outdoor/hands-on activities, has more follow-up activities, good publications and documentation, and effective linkage with schools has been considered a more effective NGO than the others.

Table 5.4: Comparative Account of ‘SWOT Analysis’ with Respect to Three Case-Study NGOs

Sl. No.	ATREE(A)	ECO-WATCH(E)	YMCA(Y)
	Multipurpose NGO with EE as Part of Its Programmes	Single Purpose NGO with EE and Environment Conservation as Main Agenda	Multipurpose NGO with EE as a Part of Its Programmes
I STRENGTHS			
1	Recognised by the Ministry of Science and Technology as a Scientific and Industrial Research Organisation	Recognised as one of the best NGOs and awarded ‘Best Environmental Group’ from Rotary Club, Bangalore	Recognised for its service in the field of sports and development of downtrodden
2	Utilises an interdisciplinary approach in addition to participatory and interactive approach, has the capacity to address issues of environmental degradation	Utilities participatory and interactive approaches to address the environmental issues	Utilises participatory and interactive approaches to address environmental issues
3	Composition of NGO is adequate	-	Composition of NGO is adequate
4	Programmes - Research, education, outreach and policy changes	Programmes – education, research, and projects for eco-development	Programmes - education, and projects for eco-development
5	-	Programmes organised are adequate in number	Programmes organised are adequate in no.
6	Programmes organised are varied in nature	Programmes organised are varied in nature	Programmes organised are less varied
7	Programmes are effective to some extent	Programmes are effective to a greater extent	Programmes are effective to some extent
8	-	Different methods/activities are employed, which encourage active participation of participants	-
9	-	Reference material supplied is adequate and appropriate	-
10	-	Uses both Kannada and English languages	Uses both Kannada and English languages
11	Has in-house resource persons with rich knowledge and experience	Resource persons are from outside, but well informed with rich experience in the field	Resource persons are from outside, but well informed with rich experience in the field
12	-	Could convince more no. of participants to take action towards environment protection	Could convince a few participants to take action towards environment protection

Contd...

Sl. No.	A	E	Y
13	Has rich publications- scientific and highly technical in nature	Has adequate publications- simple and appropriate for common people	-
14	Has good documentation	Has good documentation	Has good documentation
15	-	Has better linkage with schools	Linkage with schools in considerable
16	Has group leadership	Has good individual leadership and also can promote second order leadership	Has group leadership
17	-	The leader himself is knowledgeable and experienced in the field, has professionalism	-
18	Does not depend mainly on Govt. funds, has upward linkage with other agencies	Does not depend mainly on Govt. funds, has upward linkage with other agencies	Does not depend mainly on Govt. funds, has upward linkage with other agencies
	II. WEAKNESSES		
1	-	Composition of NGO is limited	-
2	EE is an aspect of development programme	-	EE is an aspect of development programme
3	No clarity in objectives	No clarity in objectives	No clarity in objectives
4	Can reach only students and teachers (limited sector)	-	Can reach mainly students and rural folk to some extent
5	Programmes organised are not adequate in number	-	Programmes organised are not adequate in numbers (rallies competitions)
6	Restricted methods/activities	-	Restricted methods/activities
7	No clarity regarding reference material supplied	-	Reference material supplied is not adequate, but appropriate.
8	Uses only English language	-	-
9	Difficult to convince people to take action towards environment protection	-	-
10	-	-	Publication is not adequate, but simple and appropriate for the common people
11	Linkage with schools is not considerable	-	-
12	Leaders are experienced in research field and has professionalism, but not reflected in EE programmes	-	Leaders' knowledge and experience in the field are limited, lack professionalism

Contd...

Sl. No.	A	E	Y
	III. OPPORTUNITIES		
1	Has upward linkage with other funding agencies	Has upward linkage with other funding agencies	Has upward linkage with other funding agencies
2	Utilises research experience for educational programmes	Utilises research experience for educational programmes	-
3	-	Provides adequate number of documentary films on different aspects/issues of environment/ conservation	-
4	Has scope for publicity among professionals/scientists regarding research work	Has scope for wider publicity for EE programmes among common people	Has scope for publicity among common people regarding developmental work
	IV. THREATS		
1	-	Competition with other NGOs	Competition with other NGOs
2	No transparency regarding its functioning	-	-
3	Getting cooperation from public is difficult	Getting cooperation from public is difficult	Getting cooperation from public is difficult
4	Schools are not proactive	Getting like - minded people work is difficult	Schools are not proactive
5	-	Getting fund is difficult	-
6	Cannot reach public	Motivating participants is difficult	Getting fund is difficult
7	Getting fund is difficult	Motivating participants is difficult	Motivating participants is difficult
8	Motivating participants is difficult	-	Required to have more and more out door activities
9	Required to have more action-oriented/hands on activities	No networking of NGOs	No networking of NGOs
10	No networking of NGOs		

CHAPTER VI

LINKAGE WITH THE SCHOOLS

As indicated in the case-study report, all the three NGOs selected for the study were associated with certain schools (ATREE-8, Eco-Watch-10, YMCA-13) in Bangalore City. In order to study the extent of NGOs' linkage with schools to promote Environmental Education (objective 4 and research question 4), one-third of the total number of schools (31) linked with them were selected randomly. The total number of schools selected for the study consisted of 11 schools, with 4 each from ATREE and Eco-Watch, 3 from YMCA. From these 11 schools, totally 25 teachers and 238 students (9 and 67 from ATREE, 9 and 73 from Eco-Watch, 7 and 98 from YMCA respectively) were drawn as sample for the study. The data are in terms of perceptions of teachers and students, and also the performance of students in the environment tests. The data were collected using the interview schedule for teachers, questionnaire and environment tests (EKT, EAT, EABT) for the students

6.1. School Profiles

It is interesting to note that all the schools that were linked with the NGOs under study, including the 11 schools selected for the study, were private and well-established English medium schools in Bangalore City. Further, it was found that EE programmes were initiated in 2000 and 2001 in 6 of the 11 schools selected for the study, whereas it was in 3 schools during 1997-98, in one school during 1993 and in one school during 2003. From this, it is quite evident that initiation to EE programmes in schools was a recent phenomenon. Some of the schools selected for the study and a few teachers from these schools had been associated with other organisations, for EE and other programmes.

Two schools linked with ATREE - (1) Poorna Learning Centre and (2) Gear Foundation - had in-house programmes for EE apart from NGO intervention. All the 4 schools with ATREE were associated with other NGOs for EE programmes like CMCA, PEAS, KERCF, WWF and TERI which had different programmes on EE. All the schools with Eco-Watch (except one, i.e., Janaka Vidyalaya which had a link with 'Save Tiger' group) and YMCA had no association with any other NGO.

6.2. Teacher Profiles

All the teachers associated with EE programmes in schools were invariably Science and Physical Education teachers and they had 5-15 years

of teaching experience whereas HMs had more than 30 years of teaching experience, and were not aware of the details of the EE programmes in their schools. Some of the HMs outrightly refused to respond to us saying that they had no time to answer these questions; some responded very well on the general aspects of EE programmes but again for the details, they referred us to teachers. Only 3 HMs were found resourceful and were well aware of the EE programmes and had concern for environmental conservation.

6.3. Perception of Teachers

6.3.1. Programmes by Organisations Other than the School

Based on the responses of the teachers in charge of EE programmes in the schools, it could be inferred that quite a few programmes like bird watching, water quality monitoring, talk on bio-diversity and snakes, pollution awareness programmes and science exhibitions were conducted by the organisations such as Developmental Alternatives (DA), CMCA, KERF in the schools attached to ATREE. In only one school associated with Eco-Watch (Janaka Vidyalaya) 'Save Tiger' slide shows were conducted by the Save Tiger Group. Otherwise, no programme was conducted in the schools with Eco-Watch and YMCA as they did not have association with any other NGOs/agencies.

6.3.2. Programmes by the NGOs Selected for the Study

ATREE organised only one programme each in all the 4 schools selected for the study - talk on Bio-diversity (Poorna), Science exhibition (Vidyaniketan) Environmental day celebration, awareness programmes (Bishop Cottons and GEAR Foundation). Most of the programmes were knowledge-oriented. Some brochures and pamphlets about bio-diversity were distributed to the participants in one programme, i.e., talk on bio-diversity. Although charts and slides were used in other programmes, no material was given to the participants; language used was only English.

The schools with the other two NGOs were involved in more number of programmes. The programmes conducted by the Eco-Watch were: Our Eco-Save Environment slide show (Janaka Vidyalaya), Urban Forestry, Nature study- field trips, Water conservation- demonstration (CPHS, Koramangala), Green brigade, Rainwater harvesting and Vermiculture (CPHS, HSR Layout), talk on Environmental Protection and Management by a Kenyan Environmentalist (East West school). The programmes were both knowledge- and action-oriented; involved participatory approach with lectures, demonstrations, slide shows, field-trips and films. Related literature

for these programmes had been distributed to the participants in the form of booklets/pamphlets and brochures; both Kannada and English languages were used suitably.

The programmes of YMCA were environmental awareness programmes - World Environment Day (Vinayaka), Save Water rally, debate, tree-planting and drawing competition (IQRA School), Water Day rally, Environmental Day rally, Green clubs and tree-planting (Stracey School). Most of the programmes were knowledge-oriented and rally/competitions type; only pamphlets were distributed to the participants in some of the programmes; both Kannada and English were used in the programmes. No incentive was provided to the students to participate in the programmes, but certificates were given to them as a mark of recognition.

Based on this data, it is inferred that the schools linked with ATREE appeared to be self-sufficient and self-reliant; had in-house programmes and association with other NGOs. ATREE's intervention was not considerable. The schools with Eco-Watch and YMCA had no in-house programmes and they were initiated towards EE programmes through these NGOs only. Thus, Eco-Watch and YMCA were doing considerable work with schools, and Eco-Watch seemed to be better in its deliberations with the schools in achieving the goals of EE.

6.3.3. Effectiveness of the Programmes

A majority of the teachers (65 per cent) rated the programmes of the NGOs at 50-75 per cent level effectiveness; some (25 per cent) rated them at 75 to 90 per cent. This indicates that most of the programmes of EE with schools were effective to the extent of 50-75 per cent and raises a pertinent question for further study - what were the factors responsible for this status? What best could be done by NGOs to increase the level of effectiveness of the programmes?

6.3.4. Achievement from the Programmes

Table 6.1 indicates that major achievements of the programmes were awareness and sensitivity to environment problems, knowledge of environmental and related problems, sensitivity to do something towards environment conservation and positive attitude towards environment protection, in that order (3-4 teachers from Eco-Watch and YMCA did not respond). It is very pertinent to note that the very important and foremost objective of EE, i.e., the skill of sustainable use of environment, was not at all considered by any of the NGOs.

Table 6.1: Achievement from the Programmes

Achievements	A (8)	Y (7)	E (9)	TOTAL (24)
1. Awareness and sensitivity to environment problems	8	3	5	16
2. Knowledge and environment related problems	7	3	5	15
3. Positive attitude towards environment protection	4	6	3	13
4. Skill of sustainable use of environment	-	-	-	-
5. Sensitivity to do something towards environment conservation	6	4	5	15
6. Any other, specify	-	-	-	-

6.3.5. Interesting Part of the Programmes**Table 6.2: Interesting Part of the Programmes**

Items	A (8)	Y (7)	E (9)	TOTAL (24)
1. Theme of the programme	6	4	2	12
2. Methods and materials used	2	-	-	2
3. Experienced and learned resource persons	6	4	-	10
4. Provision for active participation	2	4	3	9
5. Instructional material supplied	2	1	-	3
6. Activities conducted	6	2	-	8
7. Evaluation procedure followed	-	-	-	-
8. Any other, specify	-	-	-	-

As indicated in Table 6.2, the most interesting part of the programmes was the theme of the programme, experienced and learned resource persons, provision for active participation and activities conducted in that order. Evaluation was not at all considered.

6.3.6. Implementation/Follow-up of the Programmes

Out of 4 schools associated with ATREE, the knowledge obtained by the EE programmes was implemented in one school (rain water harvesting, solar heating) and one school reported that it would be implemented appropriately. It had not been implemented in other 2 schools for the reason of having no time and energy on the part of the teachers because of heavy work load in the school and no scope for implementing, as the programme was knowledge-oriented in another school. Out of 4 schools with Eco-Watch, it was implemented in 2 schools (herbal plant garden, cactus garden, Nature

club, green brigade, rainwater harvesting, vermiculture, tree-planting in the school campus and other areas around the school) and not implemented in 2 schools for lack of resource persons and technical know-how. No school with YMCA had attempted to implement the knowledge obtained through the EE programmes and they reported lack of time and space for that.

6.3.7. Programmes Expected from the NGOs

A majority of the teachers (more than 70 per cent) from all the three NGOs expected the following programmes which seemed to be more action-oriented and encouraged students' active participation in awareness programmes – nature camps, field trips, shramdands, slide shows, lecture-cum-demonstration on different aspects of environment and pollution, hands-on activities, more number of programmes of any type.

6.3.8. Co-operation from Teachers, Students and Parents:

Teachers' co-operation in planning, executing and preparation of material was 75 per cent-90 per cent; student's co-operation in terms of participation was 75 -90 per cent, in terms of execution and preparation of materials for the programmes was 50-75 per cent. Point of considerable observation was the low level of co-operation from parents' side. It was opined by a majority of the teachers that parents hardly co-operated with the school (less than 50%) in terms of planning, execution and participation in the EE programmes. This was due to lack of motivation on the part of parents or lack of time, heavy work schedule, lack of awareness. This raises the question of motivating parents towards EE programmes as parents play a significant role in the education of children and so also in EE.

6.3.9. Problems Faced in Organising/Participating in the Programmes of NGOs

Table 6.3: Problems Faced in Organising/Participating in the Programmes

Problems	A (8)	Y (7)	E (9)	TOTAL (24)
1. Lack of interest	-	-	-	-
2. Lack of time	4	4	4	12
3. Lack of transport facility	-	1	3	4
4. Lack of funds	1	3	-	4
5. Long distance of the venue	-	2	2	4
6. Physical fatigue	2	1	-	3
7. Non-feasibility of timings	2	-	4	6
8. Any other, specify	-	-	-	-

A majority of the teachers did not indicate any problem except 'lack of time' (teachers from 2 schools reported no problems at all), whereas a negligible number of teachers had expressed problems of lack of transport facility, physical fatigue, long distance of the programme, non-feasibility of timings (problems of only 3 to 4 out of 24 teachers). Thus, it is concluded that the major problem faced by the teachers was "lack of time".

6.3.10. Summing Up

All the teachers (from all the three NGOs) opined that the particular NGO with which they were associated was doing good work in developing awareness among students and teachers, identifying the problems and suggesting some solutions to them. A majority of the teachers suggested that the NGOs could be improved in organising varieties of programmes with clearly spelt-out objectives to have a sustained interaction with the schools.

6.4. Perception of Students

6.4.1. Status of EE in Schools

As per the responses of a majority of the students (more than 80 %) from Eco-watch and YMCA schools, the environmental concepts were taught as related concepts while teaching other subjects as part of co-curricular activities, and mainly through demonstration and activities outside classroom followed by activities through non-formal sector whereas about 75 per cent of the students from ATREE schools expressed that it was taught as a separate subject as well as a part of co-curricular activities, and by explaining and dictating notes followed by demonstration and other outdoor activities.

As indicated by most of the students (60 % to 70 %), Sports club, Eco-club/Nature clubs, Cultural activities/Humanities club and Science clubs were most commonly found in almost all the schools except 2 or 3 schools selected for the study. But the details regarding the activities held under them were not furnished by them.

6.4.2. Programmes by the Organisations Other than School

Very negligible number of students had responded to the question on the programmes organised by the bodies other than the school and the programmes most liked by them. However, it was found that in some of the schools a few EE and other programmes had been organised by 2 or 3 different organisations like Developmental Alternatives, Rotary club and ISRO etc., in addition to the NGOs considered for the study. Vermiculture/composting, water conservation activities and watching animals/birds were

reported as the activities most liked by the students. From this, it is inferred that some of the schools had association with other organisations too in addition to the NGO considered for the study, and more action-oriented outdoor activities were liked by the students. This has been substantiated by the findings on the item regarding the programmes expected by the students.

6.4.3. Motivation to Attend the Programmes of the NGOs

More than 50 per cent of the students from all the three NGOs were motivated by their teachers, more than 30 per cent by self and about 20 per cent by their parents. As teachers played a major role in motivating students, it was suggested that teachers should take interest and work with conviction to make the students develop interest in the Environmental study and its protection. It is quite interesting to note that no incentives were given by the NGOs to students to attend their programmes.

6.4.4. Effectiveness of the Programmes

Only 30 per cent (from ATREE and Eco-Watch schools) and 50 per cent (from YMCA schools) of the students considered for the study responded to the question on the effectiveness of the programmes. Of these, more than 50 per cent (from ATREE and YMCA) expressed that the programmes were effective to the extent of 50 per cent to 75 per cent and from Eco-Watch it was rated more than 75 per cent. Thus, it is concluded that the effectiveness of the programmes was higher in the case of Eco-watch than in ATREE and YMCA.

6.4.5. Achievement from the Programmes

Table 6.4: Achievement from the Programmes

ACHIEVEMENTS	ATREE		ECO-WATCH		YMCA		TOTAL	
	No.	%	No.	%	No.	%	No.	%
Awareness and sensitivity to environmental problems	34	50.75	32	43.84	59	60.20	125	52.52
Knowledge of environmental and related problems	15	22.39	24	32.88	52	53.06	091	38.24
Positive attitude towards environmental protection	13	19.40	17	23.29	20	20.41	050	21.01
Skill of sustainable use of environment	09	13.43	10	13.70	07	7.14	026	10.92
Sensitivity to do something towards environment conservation	19	28.36	30	41.10	54	55.10	103	43.28

It can be inferred from Table 6.4, that the higher percentage of students had achieved awareness and sensitivity to environmental problems, sensitivity to do something towards environment conservation, and knowledge of environmental and related concepts. The least percentage of students had achieved the skill of sustainable use of environment followed by positive attitude towards environmental protection.

6.4.6. Part of the Programmes Most Liked by the Students

As per Table 6.5, the most liked part of the programmes held by the three NGOs, in general, were provision for active participation followed by the instructional material supplied, and the evaluation procedure followed was not at all considered. However, there were certain differences found among the three NGOs.

Table 6.5: Part of the Programmes Most Liked by the Students

ITEMS	ATREE		ECO-WATCH		YMCA		TOTAL	
	No.	%	No.	%	No.	%	No.	%
Theme of the programme	10	6.70	21	15.33	10	9.80	41	17.23
Method/approach/ strategy used	13	8.71	7	5.11	27	6.46	47	19.75
Experienced and learned resource person	4	2.68	15	10.95	18	17.64	37	15.55
Provision for active participation	8	5.36	3	2.19	51	49.98	62	26.05
Instructional material supplied	3	2.01	5	3.65	43	42.14	51	21.43
Activities conducted	2	1.96	25	18.25	12	11.76	39	16.39
Evaluation procedure followed			-		-		-	

6.4.7. Programmes Expected by the Students

The response by the students (table) indicated that the most commonly expected programmes were pollution awareness and control (air and water), fieldtrips, excursions, camps, visits, nature walks etc.; Nature clubs, Environment clubs, Science clubs, projects on environment, Environmental awareness and protection programmes, water conservation programmes and vermiculture/composting. All the programmes expected by the students seemed to be both knowledge and action-oriented programmes and this again substantiated the finding that more action-oriented programmes were liked by the students.

6.4.8. Problems Faced in Participating in the Programmes

Very few responded to this question. Considering their responses it is inferred that the most commonly faced problems by the students in participating in the programmes were (in the order of preference) – could not concentrate on their studies, felt physical fatigue, timings were not feasible, affected their study habits and demanded more work as well as time.

Table 6.6: Problems Faced in Participating in the Programmes

PROBLEMS FACED	ATREE		ECO-WATCH		YMCA		TOTAL	
	No	%	No.	%	No.	%	No.	%
No encouragement from teachers/parents	1	0.57	-	-	9	8.1	10	4.20
Lack of interest	8	4.56			8	7.2	16	6.72
Non-feasibility of timings	9	5.13	28	19.04	4	3.6	41	17.23
Physical fatigue	1	0.57			47	42.3	48	20.17
Affects study habits	2	1.14	15	11.56	10	9.0	28	11.77
Cannot concentrate on studies	1	0.57	1	2.04	55	49.5	58	24.37
Demands more work and time	3	1.71	21	14.28	3	2.7	27	11.35

6.4.9. Influence of NGO Programmes on Students' Learning

Table 6.7: Influence of NGO Programmes on Students' Learning

ITEMS	ATREE		ECO-WATCH		YMCA		TOTAL	
	No	%	No.	%	No.	%	No.	%
To get more marks	3	2.01	2	1.46	9	8.82	14	5.88
To understand the concepts	10	6.7	17	12.41	5	4.9	32	13.45
To apply this knowledge in life situation	14	9.38	11	8.03	13	2.74	29	12.19
To develop scientific inquiry	1	0.67	12	8.76	8	7.84	21	8.82
To develop interest towards environmental matters	12	8.04	35	25.55	13	2.74	60	25.21
To develop concern towards environmental protections	15	10.05	20	14.6	17	16.66	52	21.85
To get prizes in competitions	5	3.35	2	1.46	8	7.84	15	6.3

Not all students had responded to this question. The responses given by them (Table 6.7) indicated that the programmes of NGOs had influenced the students on the following points in the order of priority - to develop interest towards environmental matters, to develop concern towards environmental protection, to understand the environmental concepts and to apply his knowledge in life situation. The least influenced points were - getting prizes and more marks in the examinations.

6.5. Performance of Students on Environmental Tests

From Tables 6.8-6.10, it is found that more than 75 per cent of the students from each of the three NGOs separately and more than 70 per cent of the students from all the three NGOs together had exhibited an average level of performance in all the three tests.

Table 6.8: No. and Percentage of Students at Different Levels of Environmental Knowledge

School	N	Above Average		Average		Below Average	
		N	%	N	%	N	%
ATREE							
Bishop Cottons	35	2	6	26	74	7	20
Gear Foundation	10	-	-	7	70	3	30
Poorna Learning Centre	13	1	8	11	84	1	8
Vidyaniketan	10	1	10	8	80	1	10
Total	68	4	6	52	76	12	18
Eco-Watch							
C.P.S. (HSR)	14	1	7	11	79	2	14
C.P.S. (K)	30	4	13	22	74	4	13
East West	18	3	17	14	78	1	5
Janak Vidyalaya	10	1	10	8	80	1	10
Total	72	9	13	55	76	8	11
YMCA							
IQRA	38	1	3	35	92	2	5
Strarey Memorial	30	2	7	24	80	4	13
Vinayaka	30	5	17	20	66	5	17
Total	98	13	13	72	74	13	13
Grand Total	238	34	14	169	71	35	15

Table 6.9: No. and Percentage of Students at Different Levels of Environmental Awareness

School	N	Above Average		Average		Below Average	
		N	%	N	%	N	%
ATREE							
Vidyaniketan	9	1	11	6	67	2	22
Gear Foundation	10	1	10	8	80	1	10
Poorna Learning Centre	11	1	9	9	82	1	9
Bishop Cottons	36	3	8	26	72	7	9
Total	66	6	9	49	74	11	17
ECO-WATCH							
C.P.S. (HSR)	14	2	14	11	79	1	7
C.P.S. (K)	31	5	16	23	74	3	10
East West	18	3	17	15	83	-	-
Janak Vidyalaya	10	1	10	9	90	-	-
Total	173	11	15	58	79	4	6
MCA							
IQRA	38	-	-	38	100	-	-
Strarey Memorial	30	2	7	22	73	6	20
Vinayaka	30	3	10	21	70	6	20
Total	98	7	7	78	80	13	13
Grand Total	238	25	11	177	74	36	15

Further, it is noticed that, of the remaining, the percentage of students was higher at the above average level than the below average level in the case of Eco-Watch, whereas it was reversed in the cases of ATREE, YMCA and in the total sample. It is inferred that a majority of the students were average in their level of environmental awareness, knowledge and sensitivity.

Interestingly, it is attempted here to know whether the level of environmental awareness, knowledge and sensitivity among the students from the schools with NGO intervention were better than those from the schools without NGO intervention. For this purpose, all the three tests - EKT, EAT and EABT - were administered to 50 students from 2 schools without the intervention of any NGO for EE programmes and their performance was analysed, the details of which have been presented in the Table 6.11.

Table 6.10: No. and Percentage of Students at Different Levels of Environmental Action Behaviour

School	N	Above Average		Average		Below Average	
		N	%	N	%	N	%
ATREE							
Vidyaniketan	9	-	-	7	78	2	22
Gear Foundation	10	2	20	8	80	-	-
Poorna Learning Centre	12	1	8	10	84	1	8
Bishop Cottons	36	4	11	27	75	5	14
Total	67	7	10	52	78	8	12
Eco-Watch							
C.P.S. (HSR)	14	2	14	11	79	1	7
C.P.S. (K)	31	5	16	22	71	4	13
East West	18	-	-	16	89	2	11
Janak Vidyalaya	10	1	10	8	80	1	10
Total	73	8	11	57	78	8	11
YMCA							
IQRA	38	-	-	37	99	1	1
Strarey Memorial	30	4	13	22	74	4	13
Vinayaka	30	4	13	21	70	5	17
Total	98	8	8	75	76	15	16
Grand Total	238	27	11	176	74	35	15

Table 6.11: No. and Percentage of Students at Different Levels of Environmental Knowledge, Awareness and Action Behaviour (for the Schools Without NGO Intervention)

School	N	Above Average		Average		Below Average	
		N	%	N	%	N	%
EKT							
BKS High School	20	2	11	15	80	3	16
Kamalabai High School	25	2	8	21	84	2	8
Total	45	9	21	31	68	5	11
EAT							
BKS High School	20	2	11	16	84	2	11
Kamalabai High School	25	2	8	22	88	1	4
Total	45	8	16	31	70	6	14
EABT							
BKS High School	20	2	10	15	80	3	16
Kamalabai High School	25	3	12	18	72	4	16
Total	45	6	19	35	69	4	12

About 68 - 70 per cent of the students from these schools had exhibited average level performance on all the three tests; of the remaining percentage of students, higher percentage the students was found in above average category than that of in below average category as found in the case of Eco-Watch.

Although students from both the categories of schools exhibited average level of performance, it was possible that they might differ in the mean performance. Hence, Mean and Standard Deviation were calculated for the scores obtained on the tests, and 't' test for the significance of difference between means (independent means) was employed. 't' value was found highly significant beyond 0.01 level, and thus, concluded that there was significant difference between the mean performance of the students from the schools with NGO intervention and those without intervention. This finding suffices their ratings of effectiveness of the programmes and raises many issues relating to the effectiveness of the NGOs in promoting NFEE.

6.6. Conclusion

Considering the nature of the programmes, methods/activities and materials used/given to the participants and level of effectiveness in promoting follow up activities, Eco-Watch is found better than YMCA which was also doing considerable work with schools in establishing and strengthening linkage with schools to promote EE. ATREE's contribution towards this was not found considerable and its linkage with schools for the promotion of EE was not very effective. Though NGOs were attempting to establish linkage, schools were not pro-active in using the resources of NGOs. It is inferred that the NGO linkage with schools for promoting NFEE was not very effective and it is very important to look into the issues to be considered for promoting more effective linkage with schools.

CHAPTER VII

PROBLEMS AND LIMITATIONS OF NGOs

In order to study the problems and limitations of the NGOs working towards NFEE (objective 5, research question 5), data were collected from multiple sources - key informants, participants, public, teachers and students. Further, suggestions were also sought from them, to make the programmes /NGO more effective. The consolidated responses have been presented in this chapter under 3 headings – a) Problems faced by the NGOs, b) Limitations of NGOs, c) Suggestions for improvement.

7.1. Problems Faced by the NGOs

All the key informants from all the 3 case study NGOs – ATREE, Eco-Watch, YMCA – perceived the following problems

- i. Funding – Funds from the Government were not adequate, inordinate delay in getting funds, difficulty in mobilising funds from different sources, non-availability of information and procedures regarding funding.
- ii. Co-operation from the community and participants – very difficult to convince and motivate them for the purpose.
- iii. Follow-up of programmes – by and large, follow-up work was a very difficult task; not possible to have direct and adequate follow-up activities. Cross-sectional follow-up was possible in some cases, but not the longitudinal follow-up.

It is also found that the organisational problems like time management, venue and changes in the Resource Persons at the last hours of the programmes were specific to Eco-Watch and YMCA, whereas communication with other organisations/local institutions was a problem for ATREE only.

Further, the discussion with key persons of the NGOs (22) identified in the study revealed that most of the NGOs were facing the following problems (in addition to the above-mentioned 3 major problems) in their way to reach the expected goals of EE

- Mobilisation of human resources like resource persons, participants, public and community facilities.
- Frequent transfers and discontinuity of Heads and teachers in the schools, officials in the government offices.
- Dissemination of information on their programmes to public.
- Networking with other organisations.

7.2. Limitations of NGOs

i. As perceived by the key informants

It is found that each case-study NGO had different limitations.

ATREE – Limited reached out to schools, could not directly reach public and did not have network with other local organisations.

Eco-Watch – Limited capacity of the organisation and financial resources, limited time factor and manpower, limited co-ordination with the government and other organisations.

YMCA – No limitations except delay in certain programmes due to delayed release of funds.

ii. As perceived by the participants

As the limitations of the programmes by NGOs indicated their limitations too, the perceptions of the participants, teachers and the students about the limitations of the programmes have been considered here.

No limitations were indicated by a majority of the participants. From the responses of the other few, it is found that the most significant limitation of the programme was lack of follow-up work, lack of action-orientation and poor response from the participants.

iii. As perceived by the teachers

Most commonly found limitations (as reported by more number of teachers) were – the programmes were knowledge-oriented, not action-oriented; no hands-on activities/audio visual aids; attracted limited number of participants; inadequate number of experienced and practising resource persons.

iv. As perceived by the students

As per the opinion of a majority of the students (about 60%) who responded to this question, the most commonly found limitations in the programmes of all the three NGOs were time management and restricted possibility to participate in all the activities. But certain limitations like lack of organisation and adequate communication were referred specifically to YMCA programmes. It is quite obvious, as YMCA always attempted to have a mass of students to participate in rallies and protests and thus, failed to manage the students well during the programmes.

7.3. Suggestions for Improvement

By Key informants: The key informants of different NGOs have given different suggestions to make it more active and effective, and the suggestions have been presented here NGO-wise:

For ATREE

- Reach out programmes should be increased.
- Build up networking with other NGOs and local institutions.
- Work with greater consistency and commitment.

For Eco-Watch

- Get like-minded people/organisations to work with this NGO on the programmes outside Bangalore.
- Take up membership drive to extend its network with people.
- Extend the programmes to more number of people both in cities and villages.
- Continue/sustain hard work with commitment and conviction.
- Accommodate more resource persons and manpower.
- Establish a Nature Interpretation Centre reachable to the public.

For YMCA

- Have more funds from the government .
- Work with rigour to get more support from the community and students.
- Have good networking with other NGOs.
- Involve more number of volunteers to work under the guidance of the experts.

By Participants: Not many responded to this item. Of those who responded, a majority of them suggested NGOs to have more hands on activities, follow-up activities, give more publicity for the programmes and to see that the programmes reached common people.

A few respondents suggested to NGOs, in general, to have variety in the programmes, promote active participation of the community and train volunteers to hold programmes in larger circles.

By Teachers: Only a few teachers responded to this question, and based on these responses the following suggestions to make the programmes more meaningful and effective were identified-make the programmes action-oriented, participatory/interactive, extend the programmes to more number of students/teachers, organise varieties of programmes (should not be stereotyped like lectures, rallies, competitions), involve experienced resource persons for different programmes.

By Students: Very few students responded to this item. The most common suggestions given by them to make the programmes of NGOs more meaningful and effective were-have more outdoor activities and continuation /follow-up activities, provision for active/compulsory participation, conduct the programmes more often and more action programmes than awareness programmes.

By the Public: Following suggestions (NGO-wise) were given to make the NGO more effective.

For ATREE

- i. Experienced people in the area of EE need to be involved to make programmes effective.
- ii. Should try to reach more number of schools (especially the Government, and schools catering to lower SES children) to get larger number of students and teachers.
- iii. Should try to reach common people other than teachers and students.
- iv. Make the programmes more action-oriented.

For Eco-Watch, it has been suggested to reach more and more people.

For YMCA, it has been suggested to take up more and more continuous programmes and follow-ups.

Further, the suggestions given by the public for improving the functioning of NGOs imply that the NGOs needed to extend their hands to wider section of the people and also to aim at more and more action-oriented programmes so that people could be motivated and encouraged to take meaningful actions towards environmental protection and management.

7.4. General Opinion about NGOs and Environment Education

With an interest to know the general opinion of different sampling groups considered for the present study, about NGOs and EE in general, an attempt was made to collect their opinion. The consolidated view of the participants, public and teachers regarding the contribution of NGOs, in general, towards the promotion of EE, and EE in general has been presented here.

7.4.1. Contribution of NGOs in General Towards EE:

Key Informants' View

Most of the key informants felt that all the NGOs working on EE were not effective. Considerable number of NGOs were doing their best to achieve the goals of EE, whereas some were not contributing any thing to the cause. Some of them opined that although activities were being

undertaken, the success rate was questionable; NGOs should have clarity in their objectives and approaches. A few expressed that networking of NGOs was very much essential for the success of the endeavour; NGOs should bring out publications on environmental issues to reach the message to many people.

Participants' View

Most of the NGOs took up only situational/contextual programmes and did not take follow up work. Although contributions of NGOs were satisfactory, they should have introduced more number of programmes to achieve the goals of EE to the maximum extent. Some of the participants felt that many NGOs were doing good work and some were not; some NGOs were not clear about their objectives.

Public View

Some NGOs were doing good work towards environment conservation a some were not. Most of the NGOs organised programmes for which they got funds from some sources and they did not have follow-up programmes. NGOs needed to reach more and more people in Bangalore city. Some people were aware of the fact that many NGOs were working towards environment conservation but did not know the details about them.

Teachers' View

Some NGOs were doing good work with genuine concern for environmental protection whereas some NGOs were doing work with vested interest. NGOs, in general, did not have sustained interaction with the schools; did not have clearly spelt-out objectives and appropriate approaches for achieving the ultimate goal of EE. Some NGOs, however, contributing substantially through their publications.

7.4.2. Views about Environment Education

Key Informants' View

The common opinion of the key informants was that EE was essential for all people and because of EE, today, people are aware of environmental problems; EE should be a compulsory component of the school curriculum. A few key informants opined that the society should be more responsible and should take initiative to work for environment protection. Corporates/ industries and other organisations including NGOs should come forward to promote EE; more and more NGOs should take initiative in this regard.

It is very important to quote the views of one key informant, i.e., Shri Yellappa Reddy, a well-known environmentalist, who came out with a

meaningful strategy for NGOs to deal with the environment protection. According to him, the NGOs should address all ecological components in totality; they should identify a particular ecosystem, list out all the manifestations of pollution, clearly project an eco-chart of the locality and educate people to improve the existing condition, prepare the programme of work, go to funding agencies and then to the community. This strategy seems to be quite good and sound, but raises an important issue that is its practicability.

Participants' View

Stereotyped response was found. It is commonly opined that EE was a necessity and was required for everybody. In order to achieve the goals of EE, more and more action-oriented programmes were required than the stereotype and theoretical programmes. 50 per cent of them indicated that EE should be a compulsory subject in schools.

Public View

A majority of them opined that EE was important for all categories of people; it should be an experienced/activity-based programme. It should reach more and more people through more and more programmes. Some were of the opinion that it should be a compulsory component of the school syllabus.

Teachers' View

The general opinion of the teachers was that EE should reach all (both literates and illiterates) to make them environmentally conscious citizens. But there were different individual opinions. One teacher felt that EE had made a good beginning and needed time to feel its impact, whereas another opined that EE should be culture based and should involve the community with schools. As expressed by another, it should be a part of the school syllabus. It is very interesting to note the comment of one head of the institution that EE should not be bookish, but should be experience and activity based; needed to be shared by the community, NGOs and Government. If the Government takes the responsibility of funding and the NGOs take the initiative to organise the programmes with genuine interest and concern, and the community supported it, definitely one can achieve the goal of EE, specifically, NGOs can only work in this regard because it warrants imagination, initiative and responsiveness to the needs of individual school, and also support from the community. This statement highlights the significance of the role of NGOs in promoting environmental education through non-formal intervention.

CHAPTER VIII

SUMMARY AND CONCLUSIONS

8.1. Objectives and Methodology

The present study was taken up to identify the NGOs involved in Non-Formal Environmental Education and to make a case-study of some of them in Bangalore District (Urban), the administrative centre of Karnataka. This study mainly aimed at:

- identifying the NGOs in Bangalore District (Urban) working towards NFEE;
- studying the functioning of the NGOs selected for the study (case-studies)
- studying the effectiveness of the NGOs in promoting NFEE;
- studying the NGOs' linkage with school education to promote EE; and
- identifying the problems faced by/limitations of NGOs in promoting NFEE.

This study employed the normative survey method involving descriptive analysis and case-study with multiple case replication design. The list of NGOs in Bangalore District (Urban) was prepared by referring to the sources like websites, directories and organisations. The NGOs who were working towards NFEE were short-listed after screening the thrust areas and objectives of the listed NGOs. Then, these NGOs were visited in person/contacted through e-mails/websites/telephone numbers, and totally 22 NGOs were identified as those working on EE, and their profiles were prepared. Out of these 22 NGOs, 3 were selected (ATREE, ECOWATCH and YMCA) for the case study. The data were collected from these 3 NGOs by using multiple sources of evidence such as documentation, archival records, interview, questionnaire, tests and physical artifacts. The research tools required for the data collection were prepared by the investigator and validated in a participatory workshop involving the subject experts.

The sample for the study was drawn using a multiple stage, multiple sources and multiple sampling technique. In addition to the secondary data from the documents, the primary data were collected from 11 key informants, 43 participants, 15 public, 11 schools, 25 teachers and 238 students. Both the qualitative and quantitative data collected for the study were subjected to descriptive as well as interpretative analysis. A few statistical measures

like mean and standard deviation, 't' test for significance of the difference between means were used for analysing the quantitative data. The major findings which emerged from the study have been presented in the following paragraphs:

8.2. Findings and Implications

8.2.1. Typology of NGOs

All the 22 NGOs identified in the present study were the grassroots Non-Government Development Organisations (NGDOs) working on NFEE, out of which 5 NGOs – CEE, MYRADA, PARINITI, TERI, WWF – worked as network NGOs too. Of them, only 12 NGOs were found working exclusively on EE in the direction of promoting environmental awareness and knowledge among public and environment conservation, whereas other 10 NGOs were involved in EE as part of their development programmes and worked for it. This implied that only one per cent of the total number of NGOs in Bangalore district were working towards EE and it was concluded that the concern for EE among NGOs was very limited.

8.2.2. Functioning of NGOs

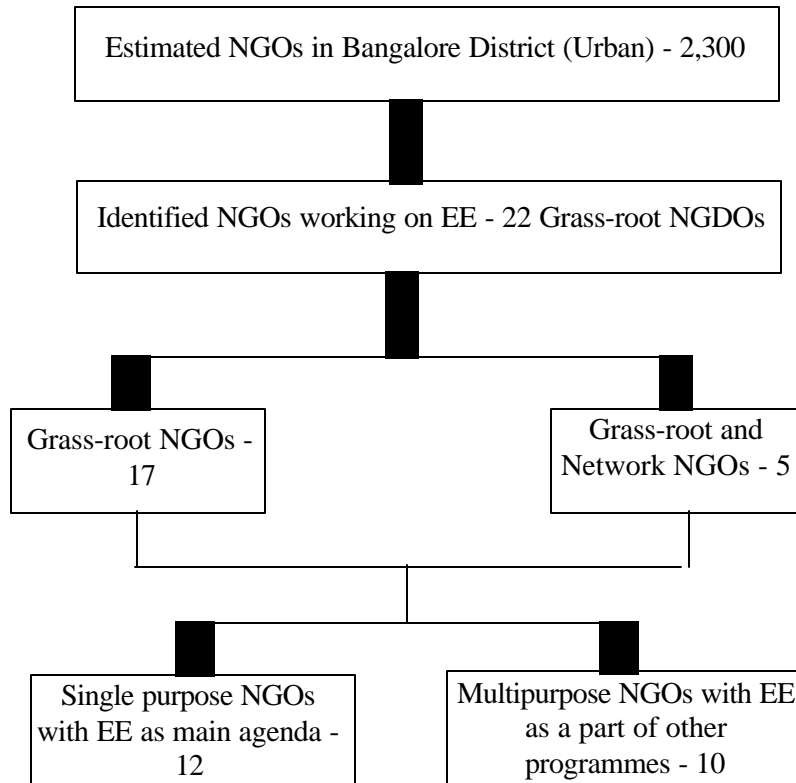
The functioning and effectiveness of the NGOs towards promotion of NFEE were studied taking into account the following variables:

- Objectives of NGOs regarding EE
- Target groups
- Programmes (No., nature, variety, effectiveness)
- Follow-up activities/programmes (No., and effectiveness)
- Approaches/methods/materials used
- Evaluation procedures followed
- Publication and documentation (No., nature, suitability)
- Funding
- Linkage with schools
- Problems faced by/limitations of NGO

Objectives

The perusal of the agenda of NGOs indicated that the objectives of the NGOs regarding NFEE had not been clearly and specifically spelt-out, and all the objectives expected of NFEE had not been considered by these NGOs. This inference held well also in the case of three NGOs considered for the case study. It implied that NGOs did not have clarity in their objectives regarding EE. Clarity in the objectives is very important for any successful programme as the objectives are the guiding indicators to decide upon the strategies/approaches. Hence, it was suggested that the NGOs should clearly specify the objectives in their agenda for NFEE.

Flowchart of NGO Typology



Thrust Areas

Most of the NGOs focused on 'water conservation and treatment' as water is considered as 'elixir of life' in these days. It is interesting to note that 'water conservation programmes' were given priority in addition to eco-development, biodiversity conservation and educational programmes by the case study NGOs too. This implied that the concerns of NGOs regarding environmental issues reflected the national/global concerns about environment.

Target Groups

Most of the NGOs targeted students, teachers, youth, professionals, public and women for their programmes whereas only a few NGOs concentrated on different sections of the society like farmers, women folk, rural folk. The case-study mentions that the NGOs targeted mainly students

and teachers; public/rural folk, to some extent. It is inferred that if the environmental message is to reach the wider sections of the population including weaker sections like rural folk, slum dwellers, non-student youth and public, in general, the NGOs should target on sections of population, which are not at all touched upon.

Programmes

It is found that many NGOs organised programmes which were sponsored by the government, or for which they got funds from other agencies (not regular). Some NGOs organised programmes regularly as per their interest, resource and concern for environment protection. Based on this, it is concluded that the NGOs who worked towards EE could be classified under two categories: 1) NGOs with steady, regular/scheduled programmes, and 2) NGOs without steady, regular/scheduled programmes. All the 3 case study NGOs belonged to the 1st category of NGOs. ATREE had taken up any EE programme sponsored by the government, whereas YMCA had taken up some schematic programmes from the government, i.e., under NEEP and NEAC programmes. Eco-Watch sought Government funds for only a few projects of its own including 'Senaranya' (biggest project involving the support of different departments). The participants, public and teachers also felt that most of the NGOs took up situational/contextual programmes for which they got funds from the government or some other sources. It is implied that the organisation and conduct of the programmes were influenced by extraneous factors like donor priorities, policies, vested interest convenience/facilities.

Most of the NGOs had educational programmes like seminars, workshops, training, lectures/talks etc., outreach programmes and certain projects, whereas a few NGOs had research programmes, capacity building, networking, consultancy and developmental activities. It is found that the NGOs selected for the study had all the educational programmes listed above, research programmes, projects and outreach programmes (YMCA does not have research component). The number of educational programmes conducted and projects taken up was adequate (except in ATREE where research work was adequate, not the EE programmes). All the 22 NGOs identified in this study claimed that they had both types of programmes - awareness and action-oriented. It has been found from the case study report and perception of the participants, public, teachers and students selected for the study that many of the programmes of the NGOs were awareness/knowledge-oriented and some were both knowledge and action-oriented. This, again, supports the general statement that most of the programmes of

NGOs were knowledge-oriented leading to development of environmental awareness, and a few were action-oriented leading to proper action in the direction of environment protection.

Approaches/Methods and Materials

It has been found that all the NGOs including the case-study NGOs employed participatory and interactive approach, which encouraged active participation of the participants. However, ATREE's claim for the use of interdisciplinary approach was not reflected in its programmes.

As per the documents and perception of the key Informants, the commonly employed methods/activities by the NGOs were lectures, field trips, discussions, displays, demonstrations, nature study, hands on activities, slide shows, films and stage/street plays, games and competitions. But, the participants and teachers opined that all these methods/activities had not been used in the programmes of the NGOs; lectures-cum-demonstrations, field trips were the most commonly used activities whereas other activities were used only in some of the programmes. However, most of the participants, teachers and students had more hands-on activities/out-door activities to make the programmes more effective and meaningful; the students expressed their liking to the programmes with more out-door/hands on activities, and other activities demanding their active participation. It can be said here that although three case study NGOs were attempting to have varied activities like slide shows, nature study, field trips, films and stage plays including hands on/outdoor activities, more and more activities of this type were expected of the NGOs by the participants and students.

Further, it is very interesting to note that the instructional/reference material were given to the participants in the programmes, but the participants had not commented on the suitability and usability of the material given. However, expert opinion was sought to decide upon the adequacy and the aptness of the materials used and supplied to the participants. It is inferred, from the case study, that the instructional/reference material was given to the participants in all the programmes and it was adequate as well as apt in the case of Eco-Watch, only appropriate in the case of YMCA and nothing could be commented on the materials given by ATREE because of their non-availability. Neither participants nor teachers/students commented on the suitability and usability of the material given. However, expert opinion was sought to decide upon the adequacy and the aptness of the materials used and supplied to the participants. Another significant finding was that ATREE used only English for communication and all deliberations, whereas Eco-Watch and YMCA used both Kannada and English in their programmes,

materials and all other deliberations. It is quite obvious and is evident that local language played an important role in making any programme more effective for common people/public. Hence, it is recommended that NGOs should give preference to local language in their activities. This is very much required, as NFEE programmes should reach all sections of the population to reap its fruits.

Evaluation Procedure Followed

With regard to the evaluation procedure followed to measure the effectiveness of the programmes, it is found that all the NGOs evaluated their programmes informally, by getting oral opinion from the participants and in some cases through small write-ups at the end of the programmes. Sometimes, paper statements and programme review in the print media, were also considered for this purpose. However, an attempt by YMCA to prepare a questionnaire (of 10 minutes duration) for pre and post evaluation of a particular programme on 'water conservation' was complimented, in spite of its limitations to be a good questionnaire. Further, all the NGOs identified, including 3 case-study NGOs, opined that they had not thought of formal evaluation with structured/standard format for the purpose; some sponsored programmes were evaluated by the respective sponsoring agencies. The researcher could not get any evidence regarding the documented evaluation of the programmes, thus, it is inferred that the evaluation of the programmes was a grey area. However, this highlights the shortfall of the NGOs, and an imperative need to reflect and also to take up adequate measures to make the evaluation programme a strong component of the NFEE programmes.

Follow-Up Programmes/Activities

Regarding follow-up programmes, it is found that the NGOs with development programmes were able to undertake follow-up activities, whereas in the case of NGOs with EE programmes it was not possible to have follow-up activities in many cases. The key informants from all the 3 NGOs considered for the study expressed that, by and large, follow-up work was difficult. While the follow-up could be taken up for the projects on eco-development, in the case of other educational programmes, no follow-up could be taken up with the same batch of participants in the same focus area, as different programmes involved different participants. Further, it is claimed that follow-up was attempted with the same schools and same category of participants, but with the different focus area. This had enabled them to reach more and more people, and spread the message of environmental awareness and eco-friendly attitude required for environment

conservation. In other words, it can be said that even though longitudinal follow-up was not possible, cross-sectional follow-up was being attempted. The participants, teachers and public also opined that NGOs did not have adequate follow-up work. This appears to be a major limitation of the NGOs.

It is quite interesting to note that (as per the perception of the participants) Eco-watch could convince people to take up the follow-up of the programmes, i.e., taking up rain water harvesting, growing ayurvedic/ medicinal plants in the garden etc. YMCA could influence some students to continue tree planting and maintenance, but not so effective, whereas ATREE was not putting any effort in this regard. It is inferred that Eco-Watch exhibited better performance than the other two NGOs in convincing people to take up follow-up of the programmes.

From this, it can be inferred that the EE programmes by NGOs for schools lent scope for their further implementation, as follow up and the schools were also interested in implementing them. While some of the schools with required facilities and resources could take up follow-up of certain programmes, it was not being done in many schools because of lack of time /resource persons/technical know-how. The schools are generally geared to particular syllabus, text books, examination system oriented towards academic achievement of students. As such, any action-oriented deliberation through non-formal sector for the achievement of the objectives of EE becomes secondary importance to the schools.

Funding

It is found that all the NGOs including the case study NGOs depend on self-generated funds, in addition to the sponsorships from certain agencies including State and Central Governments, and some international agencies too, for certain programmes.

The NGOs indicated the names of the funding agencies, but no information could be obtained regarding the nature and the level of funding and budget for the programmes. However, they expressed that the funding was not adequate and mobilisation of funds from different sources and getting it well in time was the most difficult task for the NGOs. Based on the information given by YMCA, it is found that the unit cost spent by them for EE programmes ranged between Rs.15/- and Rs.500/- in the case of completed programmes, and Rs.15/- and Rs.500/- per individual per programme in the case of completed programmes, and Rs.15/- and Rs. 800/- per individual per programme in the case of proposed programmes.

Publication and Documentation

About 50 per cent of the NGOs identified in the study had publications in the form of newsletter/annual report and brochure. Out of these, only 4 NGOs had considerable publications with many books, booklets, monographs, journals, e-journals etc, in addition to newsletters, annual reports and brochures (CEE, Dr.R.M.Lohiya Institute of Ecology and Environment, ATREE and TERI). Many NGOs had not given due emphasis for publication work. Of the 3 NGOs, ATREE had good publications, exclusively in English, whereas Eco-Watch and YMCA had some publications both in Kannada and English (considerable number by Eco-Watch, limited by YMCA).

By and large, the NGOs had documentation in the form of annual report and out of them 75 per cent had website documentation. Very few NGOs did not have any documentation. All the 3 case study NGOs had good documentation (ATREE and YMCA in both print and website, Eco-Watch only in print). It is the complimentary point of the NGOs working on NFEE. It was also suggested that those NGOs without documentation should attempt to have it, at least in print. This documentation became handy to know the status and functioning of the NGOs.

8.2.3. Effectiveness of the Programmes

While the key informants of all the case study NGOs claimed that the NGOs and their programmes were effective to an extent of 75 per cent to 90 per cent (YMCA above 90%), the participants, teachers and students expressed that many programmes were 50 per cent to 75 per cent effective and some programmes were 75 per cent to 90 per cent effective. It can be concluded that, by and large, the programmes of the NGOs were 50 per cent to 75 per cent effective. NGOs were required to work with greater commitment and conviction, rigour and clarity in their objectives, approach and methods to prove themselves more effective in achieving the goals of NFEE.

While most of the participants, public, teachers and students could get knowledge/awareness of the environment and its problems; some could develop sensitivity to do something towards environment conservation and also develop eco-friendly attitude which involved interest and skill of studying the nature as well as perceiving environmental problems. A least number of students achieved the skill of sustainable use of environment. From this, it is concluded that although some NGOs had consideration to provide for all the objectives, they had not proved effective in achieving them. However, they could sensitise people towards environmental problems but it was not possible to make the mass to practice and take action for environment

protection. Based on this data, it is inferred that NGOs' attempt at developing environmental knowledge, awareness and sensitivity was appreciable where as efforts at developing and monitoring the skills for environment protection among the participants and students was very marginal.

Further, the SWOT analysis of all the 3 case study NGOs – ATREE, Eco-Watch, YMCA – indicates that all the 3 NGOs were making considerable attempts in the direction of promoting NFEE. Of them, single purpose NGO with limited geographical coverage, lead by dynamic leadership with professionalism, and which had upward linkage with other national/international agencies, steady and regular programmes with more action-oriented programmes with more outdoor/hands on activities, had more follow-up activities, good publication and documentation. Effective linkage with schools (Eco-Watch) was considered as more effective in this NGO than the others.

8.2.4. Linkage with Schools

Only 50 per cent of the NGOs identified in the study had established linkages with schools. Although, the NGOs were working on EE for many years, this phenomenon of linkage with schools for EE programmes is a recent phenomenon in most of the cases. Among the case study NGOs, this linkage started from 1997 onwards. The schools with which the linkage had been established by the case study NGOs were not many (ATREE:8 schools, Eco-Watch:10 schools, Y.M.C.A: 13 schools). Further, it is found that EE programmes were initiated in most of the schools selected for the study in 2000-01 and in some schools in 1997-98. It can be said that the attempts towards initiation to EE programmes in schools is also a very recent phenomenon. Totally, one-third of the schools linked with case study NGOs, i.e., 11 out of 31 schools were selected for the study and it was found that all of them were well established English medium schools. Further, it was some of the schools selected for the study (all the schools with ATREE and only one school with Eco-Watch) and a few teachers from these schools were associated with other organisations for EE and other programmes.

It is interesting to note that all the teachers associated with EE programmes in these schools were invariably science and physical education teachers. It appeared that most of the teachers were involved in EE programmes, only because they were assigned that responsibility. Headmasters (HM) from most of the schools were not aware of the details of the EE programmes in their schools; only 3 out of 11 Headmasters (HM) were found resourceful and were aware of EE programmes with concern for environmental awareness. This finding implies that EE was considered

as the responsibility of science teachers and physical education teachers only because of the wrong notion that environment was science related and involved many outdoor activities for which science and physical education teachers were required.

It is found that most of the programmes of EE by the NGOs with schools were effective to the extent of 50 per cent to 75 per cent (as per the ratings of teachers and students). It is also found that the students from the selected schools (both with and without NGO intervention) exhibited average level of performance on the environmental tests – EKT, EAT and EABT; the difference between the mean performance of students from two types of schools (with and without intervention) was very less but statistically significant. From this, it could be inferred that the NGOs were effective at the average level (50% - 60%) in promoting EE in schools. This raises a pertinent question for further study; what are the factors responsible for this level of performance and what best can be done by NGOs to increase the level of effectiveness of the programmes. Through the programmes of NGOs both students and teachers could gain knowledge, awareness and sensitivity to environmental issues but not the skill of sustainable use of environment; both teachers and students expected more action oriented programmes with outdoor activities which encourage their active participation.

Most of the teachers expressed that getting co-operation from parents was a very difficult task (less than 50%) while co-operation from students in terms of participation was not a problem (75%-90%). The low-level of co-operation from parents raises an important question which needs to be addressed regarding the motivation, interest and problems of parents.

On the whole, considering the nature of the programmes, methods/activities and materials used/given to the participants and level of effectiveness in promoting follow up activities, Eco-Watch was found to be better than YMCA, which was also involved with schools considerably. In establishing and strengthening linkages with schools to promote EE, ATREE's contribution towards this was not significant. It could be inferred that NGO's linkage with schools for the promotion of EE was not very effective. Though NGOs were attempting to establish linkages, the schools were not proactive in using the resources of NGOs.

8.2.5. Problems Faced/Limitations

As per the perception of key informants the most common problems faced by all the NGOs identified including 3 case study NGOs were:

1. Funding - Funds from the government was not adequate, inordinate delay in getting funds, difficulty in mobilising funds from different sources,

- non-availability of information and procedures regarding funding.
2. Follow-up programmes – it is possible to have a follow-up of developmental programmes, but not possible to have direct and adequate follow-up activities in the case of EE programmes. Cross-sectional follow-up is possible in some cases, but not the longitudinal follow-up.
 3. Co-operation from the community and participants – very difficult to convince and motivate them for the purpose.

The problems specific to each case study NGO were:

1. Organisational problems – like venue, time management and changes in the Resource Person (specific to Eco-Watch).
2. Late coming and changes in Resource Person (specific to YMCA).
3. Communication with other organisations (specific to ATREE).

The other general problems as expressed by the key persons of all the 22 identified NGOs were:

1. Mobilisation of resource persons and community facilities.
2. Frequent transfers and discontinuity of Heads and teachers in the schools (particularly in govt. schools), and officials in the govt. offices.
3. Publicity of their programmes to reach the public.
4. Networking with other organisations.

Regarding the limitations of NGO, it is found that one NGO (YMCA) reported no limitations at all except the delay in certain programmes for want of funds whereas the other 2 NGOs (ATREE and Eco-Watch) indicated the following as their limitations :

ATREE

1. Limited reach-out to schools.
2. Cannot directly reach people.
3. Do not have network with other organisations.

Eco-Watch

1. Limited time factor and manpower.
2. Limited capacity of the organisation and financial resources.
3. Lack of co-ordination with govt. and other agencies/organisations.

8.3. Suggestions for Improvement

Following suggestions have been made by the key informants from 3 case-study NGOs, to enable the NGOs to be more active and effective

- Reach-out programmes should be increased so as to access more people both in rural and urban areas.

- Build up networking with other NGOs and local institutions.
- Sustain hardwork with greater consistency and commitment.
- Get like-minded people/organisations to work with the NGO.
- Accommodate more Resource Persons and manpower (Volunteers).
- Get more funds from the government and other agencies.

Further, it is suggested that the NGOs should consider the following points, in addition to the suggestions made above – NGOs should have clarity in the objectives and approaches for EE on their agenda, go for more action-oriented programmes with outdoor activities, have upward linkage with other agencies for funding, extend the programmes to the wider section of the society.

8.4. Conclusions

Environmental degradation represents one of the greatest challenges in the present century. World Commission on Environment and Development predicted that the world population will double and economic output will increase 4-5 folds in the next 40- 50 years. At that time the human needs require a major shift in their relationship to the environment. This major shift will need a long-term societal efforts in EE and the society will need a continuous supply of environmental specialists to deal with and understand the human requirements and environmental problems, and to develop strategies, policies and technology to keep the environment clean, productive and biologically diverse. It also needs environmentally sensitive people with eco-friendly attitudes and values to understand the environmental scenario and its adverse effects and also to act appropriately towards environment protection and improvement. There is no second argument regarding the role of EE in the direction of meeting the above said needs.

With the emergence of EE as a new dimension in the educational system (both formal and non-formal) several attempts were being made in terms of developing policies and strategies aiming at the creation of public awareness and sensitivity towards environmental problems and environmental protection leading to timely and meaningful action. While the Department of Education, MHRD took initiative for integration of EE into the formal system, MOEF took the responsibility of promoting NFEE and it has sought support from NGOs, Educational institutions, Self-Help Groups, Research Centres and other organisations.

It is very clear, NGOs play a significant role in promoting NFEE as they can reach all sections of the society. Many NGOs are contributing

considerably through their EE programmes to reach the goals of EE. But, notwithstanding this, the present study has thrown light on certain issues relating to the functioning of NGOs and has suggested that there are many areas which need to be strengthened to improve the NGOs' role in promoting NFEE. Based on the findings of this study, the following policy implications have been suggested - strengthening the networking of NGOs, building leadership and resource capital, formulation of State policy and ensuring accountability of NGOs.

Strengthening the networking of NGOs: The main point emerging from this study is the lack of networking among NGOs and other local organisations. Because of this, NGOs are unable to interact with each other and know what they are contributing towards EE. NGOs are facing some common problems like inadequate funding, lack of co-operation from public and participants, organisational problems, resource persons and resource material problems, non-availability of information regarding funding and procedures as well as formalities to get the funds etc. All these problems can be discussed and tackled, provided there is a strong networking of NGOs. This implies that there is a great need for strengthening the network of NGOs through the formation of Associations of NGOs or NGO Forums, which provide a common platform to discuss the issues and problems of NGOs and find workable solutions. There are already certain network NGOs trying to bring together NGOs and facilitate effective functioning. But, it is seen that not many NGOs are utilising this facility. Many who work with NGOs feel that it is a Herculean task to have networking with NGOs. It is quite interesting to note that the first ever All India Conference of NGOs was held at ISEC in 1987 under the leadership of Anil Bordia, Secretary of Education Department. No further effort has been made in this direction, which again confirms the difficulty in organising NGOs. It appears, NGOs themselves are not capable of networking and government has to play a role in this regard.

Building leadership and resource capital: The finding of this study has highlighted the point to that though the functioning of NGOs largely depends on funding, it has not been a constraint. Leadership of the individuals leading the NGO and the capacity of other workers in the NGO are of crucial importance for the effectiveness of NGOs (as in the case of Eco-Watch). This emphasises a need for leadership and personality development, which is possible through training for NGO personnel. Government can take initiative in this direction - identify certain nodal agencies like State Resource

Centre (SRC), Academic Staff Training Centre, Department of Environment/Education, and certain voluntary organisations/NGOs like MYRADA, CEE, FAVOR(D)(K), WWF and support them to take up the responsibility of training. The Extension Service Units in the Universities and SRCs can also think of certain programmes like production and publication of literature on different aspects of environment and its protection to suit different categories of beneficiaries, orientation/refresher courses for NGO personnel. Nowadays leadership/personality development courses are gaining momentum mainly in management sector and the NGOs are not inclined to these courses.

Linkage with schools is found not very effective and the schools are not proactive to make use of the resources of NGOs. Many of the schools expect NGOs to go to their doors, not *vice-versa*. It has also been found that NGOs target mainly urban private schools as they have easy access and continuous interaction with the same HM and teachers. It is possible because private schools have some autonomy in their functioning, but it is not so in the case of Government schools. Either NGOs or schools have to seek permission from the Government for any kind of intervention in this regard. This demands provision for school autonomy in government schools also. Government can identify certain NGOs and attach some schools to each NGO for the promotion of EE in schools, and have some nodal agency to monitor this functioning. Teacher training is an important component for effective transaction of EE in schools and some NGOs can be involved in the training programme for teachers.

Formulation of a State policy for NGOs: After Stockholm conference (1972), India was the first country to express its concern for natural resources in its constitution through the 42nd Constitutional Amendment in 1976 wherein protection of natural resources was inserted into the Directive principles of the Constitution and Article 48A was added. Article 48A states: "The State shall endeavour to protect and improve the environment and to safeguard the forests and wild life of the country". Article 51A says: "It shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes and wild life, and to have compassion for the living creatures". Further, the 11th Schedule of 73rd Amendment to the Constitution, which deals with the functions of Panchayat Raj also has recognised environment protection as one of the important functions of Panchayat Raj. All these constitutional provisions indicate that environment protection is the responsibility of State and individual. The governments have enacted legislative Acts and have come out with environmental policy and

programmes, and have introduced EE as a new dimension in both the formal and non-formal education system.

Environment Education should not only create consciousness, but this consciousness should also be translated into coherent behaviours in which action finds a fundamental solution to the problems related to environment. The people should be able to appreciate and understand all the different dimensions of environment, recognise the truth that the individual and environment are the two inseparable and interdependent parts of a single system; able to see their environment as something to be cared for as they care for themselves. This is possible only when sincere efforts are made to develop environmental ethics and concern for environment for which government has to depend on public participation and other organisations, which promote this participation. NGOs are acting as a bridge between the state and people through their involvement in supporting the government in implementing EE programmes and also in enabling people to develop awareness about environmental issues and to know their responsibility towards environment protection. The present study has indicated that there are different categories of NGOs like those who have stable funding, steady and regular programmes and those who do not have this, those who have upward linkage with national/international agencies for their programmes and those who lack this (depend only on Government sponsorship), single purpose NGOs with EE as their main goal and multipurpose NGOs with EE as a part of their development programmes. Most NGOs are not doing better in the area of EE because of many problems like inadequate funding, lack of good governance and leadership, organisational problems etc. It can be said that the government's effort in seeking NGO's support only through sponsored programmes is not enough, it should develop a meaningful relationship with NGOs who play a significant role in promoting public participation; the state should realise that it has a responsibility to facilitate NGOs to function effectively in the right direction. This envisages a greater need for a State policy for NGOs.

Ensuring accountability of NGOs: This study has found that the NGOs do not have clarity in their objectives and approaches, transparency regarding funding and evaluation of their effectiveness. This suggests that ensuring accountability of NGOs is required for their effective functioning. Accountability of NGOs implies 3 types: academic, administrative and financial. The academic accountability implies the extent to which NGO activities and programmes seek to fulfill the objectives with which NGOs were started; administrative accountability speaks of the office modalities

of NGOs such as recruitment guidelines, planning and implementation of programmes etc., whereas financial accountability refers to financial matters of the NGOs. One of the strategies to ensure accountability is the evaluation of NGOs by an external agency, using a common scale. This work is again to be initiated by the government as NGOs are not interested in this evaluation. But, it appears to be a difficult task because of distrust among NGOs towards government and government's apathy towards NGOs. Thus, how NGOs are accountable partners of the government is a question to which there are no clear cut answers. Thus, the accountability of NGOs remains as a question for which answers are varied and are not acceptable to everybody.

APPENDIX

PROFILES OF THE NGOs

1. **Name of the NGO** : **ASHOKA TRUST FOR RESEARCH IN ECOLOGY AND ENVIRONMENT (ATREE)**
2. **Address** : 59, 5th 'A' main, Hebbal, Bangalore - 560024
3. **Telephone Nos.** : 23530069/23533942/23633942
4. **Fax** : 23530070
5. **Email** : info@atree.org/atree@vsnl.com
6. **Website** : www.atree.org
7. **Contact person** : Ms. Suparna Biswas
8. **Year of establishment** : 1996
9. **Initiation of EE programmes** : 2000
10. **Type of the NGO** : Grassroots
11. **Thrust areas** : Biodiversity conservation, awareness of environmental conservation
12. **Objectives of the NGO** : To conserve biodiversity, promote sustainable use of natural resources, build local institutions, advance protection of the environment and develop environmental awareness
13. **Approaches and methods used** : Seminars, workshops, field trips and nature camps
14. **Geographical coverage** : Bangalore, Eastern and Western Ghats and North India
15. **Target group** : Students, general public, farmers and local institutions
16. **Amount spent on the programmes** : ————
17. **Funding agencies** : Government, MacArthur Foundation, IPGRI, CIFOR
18. **Documentation** : Yes
19. **Publication of the NGO** : Bimonthly Newsletter (listed in the annua report)
20. **Linkage with schools** :
21. **Other supporting organisations** : ————
22. **Evaluation procedure employed** : Informal evaluation at the end of the programme

23. Coverage of the programmes in the last 5 years:

Programmes/Projects	Follow up
1. Capacity building in B.R.Hills	yes
2. Basic ecological research	yes
3. Monitoring biodiversity in Western Ghats	yes
4. Nature camps	no
5. EE workshops	no
6. Development of EE curriculum material	no
7. Biodiversity conservation and natural resource management	yes
8. EE training of school teachers	no
9. Conservation Biology Course	no
10. plaNET	no

24. Nature of the programmes held : Action and awareness

25. Achievement of the NGO : Capacity building in B.R.Hills and M.M.Hills, Basic research on ecology and environment, conservation biology courses and PlaNET Work.

- 1. Name of the NGO** : **CENTRE FOR ENVIRONMENT EDUCATION (CEE) - SOUTH**
- 2. Address** : Southern Regional Cell , 'Kamala Mansion', 143, Infantry Road, Bangalore - 560001
- 3. Telephone Nos.** : 22869094/22869907
- 4. Fax** : 22868209
- 5. Email** : cee@blr.vsnl.net.in
- 6. Website** : _____
- 7. Contact person** : Dr. Ravindranath
- 8. Year of establishment** : 1984
- 9. Initiation of EE programmes** : 1984
- 10. Type of the NGO** : Grassroots, networking
- 11. Thrust areas** : Environment awareness, framing programmes, solid waste management, networking, documentation, consultancy and co-ordination
- 12. Objectives of the NGO** : To train, organise, implement, network, disseminate appropriate rural technologies, document, and to provide resources facilities and co-ordination in the field of EE
- 13. Approaches and methods used** : Workshops, seminars, training and nature study

- 14. Geographical coverage** : South Indian States and Union Territories (Andhra Pradesh, Kerala, Karnataka, Tamil Nadu, Pondicherry, Andaman and Nicobar Islands).
- 15. Target group** : Children, teachers, youth, NGOs, in-service professionals, rural and urban communities
- 16. Amount spent on the programmes** : ———
- 17. Funding agency** : Government and self generation
- 18. Documentation** : Yes
- 19. Publication of the NGO** : Green books, directory
- 20. Linkage with schools :**
- 21. Other supporting organisations** : FEVORD-K, TERI
- 22. Evaluation procedure employed** : Informal
- 23. Coverage of the programmes in the last 5 years:**

Programmes/Projects	Follow up
Teacher training programme	no
School environmental awareness programmes	yes
Water testing	no
Workshops	no
Seminars on EE	no
Outreach programmes	yes
Training for IFS officers	no
Developed EE package in Braille	no

- 24. Nature of the programmes held** : Awareness, creation and action
- 25. Achievements of the NGO** : A package on EE was developed in Braille, formation of school clusters to create environmental awareness, restoring hope in Gujarat after the earthquake.

1. **Name of the NGO** : **CHILDREN'S MOVEMENT FOR CIVIC AWARENESS (CMCA)**
2. **Address** : C/o Public Affairs Centre, 422, 80 Ft Road, Koramangala 6th Block, Bangalore – 95
3. **Telephone Nos.** : 25537260
4. **Fax** : 25525452
5. **Email** : cmcaexpressions@yahoo.co.in
6. **Website** : www.pacindia.org/cmca
7. **Contact person** : Vrunda Bhaskar
8. **Year of establishment** : 2000
9. **Year of initiation of EE programme** : 2000
10. **Type of the NGO** : Grassrootsss
11. **Thrust areas** : Waste management, road safety, greening the environment, water conservation, urban environmental problems and wildlife conservation
12. **Objectives of the NGO:** To build environmental awareness, promote activism for environmental protection, initiate action research and promote self growth and community service
13. **Approaches and methods used** : Interactive sessions, interclub meet, hands-on methods used activities, campaign rallies, report card, survey, awareness programmes and workshop
14. **Geographical coverage** : Bangalore – urban
15. **Target group** : Students, teachers, public and NGOs
16. **Amount spent on the programmes** : ———
17. **Funding agencies** : Corporates and Public Affairs Centre
18. **Documentation** : Yes
19. **Publications of the NGO** : Report card on public services in Indian cities, Newsletter
20. **Linkage with schools** : Yes
21. **Other supporting organisations** : PEAS and DA
22. **Evaluation procedure used** : Informal feedback from students, teachers and principals,
23. **Coverage of the programmes in the last 5 years:**

Programmes/Projects	Follow up
Action research projects in schools	yes
Cycle rally to create civic awareness	no
Awareness campaigns and summer camps	no
Interschool civic fest-INSPIRATION	no
Report card on garbage	yes

24. **Nature of the programmes organised** : Awareness creation and action
25. **Achievements of the NGO** : Implementation of action research programmes in different schools, setting up civic awareness clubs and helping the children to monitor it.
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1. **Name of the NGO** : **DEVELOPMENT ALTERNATIVES (DA)**
2. **Address** : 5/1, 5th cross, Victoria Layout, Bangalore-560 004
3. **Telephone Nos** : 5565104
4. **Fax** : 5565136
5. **Email** : dabang@vsnl.net.in
6. **Website** : www.devalt.org/cleanindia.org
7. **Contact person** : Chaya/Ibrahim
8. **Year of establishment** : 1983
9. **Year of initiation to EE programmes** : 1989
10. **Type of the NGO** : Grassroots
11. **Thrust areas** : Environment education, consultancy, organic farming and waste management.
12. **Objectives of the NGO:** Environmental awareness building, value building, validation of action research and community action.
13. **Approaches and methods used** : Action research programmes in schools, water and air quality monitoring, hands-on activities, workshops talks and seminars.
14. **Geographical coverage** : India (Bangalore branch - Bangalore).
15. **Target group** : Students, teachers, public and NGOs.
16. **Amount spent on the programmes** : ———
17. **Funding agencies** : Local consultancy, MOWR, EU.
18. **Documentation** : Yes
19. **Publications of the NGO** : Newsletter.
20. **Linkage with schools** :
21. **Other supporting organisations** : CMCA
22. **Evaluation procedure used** : Informal feedback from students, teachers and principals, a new evaluation form has been introduced.
23. **Coverage of the programmes in the last 5 years:**

Programmes/Projects	Follow up
Action research projects for each school	yes
Consultancy	no
Training programme	no
Rain water harvesting	no
Water management	yes
24. Nature of the programmes organised	: Awareness creation and Action
25. Achievements of the NGO	: Implementation of action research programmes in different schools successfully and its validation.

1. **Name of the NGO** : **ECOWATCH**
2. **Address** : 403/404, 18th cross, New Diagonal Road, Jaya Nagar, 3rd Block, Bangalore - 560011
3. **Telephone Nos.** : 26655070/9845288263 (Mobile)
4. **Fax** : -----
5. **Email** : echowatch22@yahoo.co/canopy@rediffmail.com
6. **Website** : -----
7. **Contact person** : Mr. Suresh Heblikar/
Mr. Akshaya Heblikar
8. **Year of establishment** : 1995
9. **Year of initiation of EE programme** : 1997
10. **Type of the NGO** : Grassroots
11. **Thrust areas** : Environment, water conservation, solid waste management, afforestation, waste land development, urban pollution control, tribal welfare and urban forestry
12. **Objectives of the NGO**: Environmental awareness and conservation
13. **Approaches and methods used** : Workshop, seminar and training
14. **Geographical coverage** : Bangalore, Dhwarad, Kolar, Tumkur, Haveri and Western Ghats
15. **Target group** : Teachers, pupils, NGOs, general public and labour class
16. **Amount spent on the programmes** : -----
17. **Funding agency** : Government, NWF, donations and self generation
18. **Documentation** : Yes, Annual Reports
19. **Publication of the NGO** : Booklet on Ecowatch, rainwater harvesting, green teachers manual, films and documentaries.

20. **Linkage with schools** : Yes
 21. **Other supporting organisations** :
 22. **Evaluation procedure employed** : Informal and from the donor agency
 23. **Coverage of the programme in the last 5 years**

Programmes/Projects	Follow up
Urban forestry	yes
Monitoring biodiversity in Western Ghats	yes
Water regeneration	no
Rainwater harvesting	no
Gene plasma bank	yes
Green Brigade	yes
Lake restoration	no
Workshop- teachers	no
Nature study trips and camps	no

24. **Nature of the programmes held** : Awareness creation and Action
 25. **Achievements of the NGO** : Lake restoration, Urban forestry, Gene plasma bank, Green Brigade

1. **Name of the NGO** : **FEDINA (FOUNDATION FOR EDUCATION INNOVATIONS IN ASIA)**
 2. **Address** : 154, Anjaneya Temple Street, Domlur village, Bangalore-71
 3. **Telephone Nos.** : 25353190
 4. **Fax** : 25353563
 5. **Email** : fedina@bgl.vsnl.net.in
 6. **Website** : _____
 7. **Contact person** : Mr . Duarte Beretto
 8. **Year of establishment** : 1984
 9. **Year of initiation of EE programmes** :
 10. **Type of the NGO** : Grassroots
 11. **Thrust areas** : Tribal and slum development, human rights, landless agricultural workers (unionisation), waste water treatment and community toilets, housing and training NGOs.
 12. **Objectives of the NGO:** Land acquisition and development, economic empowerment of the people, gender equality, empowerment of women and children, protection and promotion of women's rights and human

- resource development activities.
- 13. Approaches and methods used** : Interaction, arbitrary settlement, capacity building, court settlement, action-oriented activities
- 14. Geographical coverage** : Bijapur, Kittur, Vellepuram, Kanyakumari, Tirunelveli, Ullala Upanagara (Bangalore)
- 15. Target group** : Tribals, slumdweller, landless workers, general public, women and NGOs
- 16. Amount spent on the programmes** : ———
- 17. Funding agencies** : BORDA, CCFD, FDH, ADER, FAP, CORDAID, TIDES foundation, Rotarians club, Bangalore.
- 18. Documentation** : Yes
- 19. Publications of the NGO** : No
- 20. Linkage with schools** : No
- 21. Other supporting organisations** : FEDINA DEWATS
42, Muniga Layout, Sevanagar Bangalore-560 033,
Phone- 5492712
- 22. Evaluation procedure employed** : Evaluation by donor agency
- 22. Coverage of the programmes in the last 5 Years**
- | Programmes/Projects | Follow up |
|--|-----------|
| Tribal uplift (including environment protection) | yes |
| Slum development | yes |
| Watershed programme | no |
| Promotion of human and women rights | yes |
| Wastewater treatment | yes |
| Poverty alleviation | yes |
- 24. Nature of programmes organised** : Action and awareness
- 25. Achievements of the NGO** : Tribal and women upliftment, waste water treatment
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1. **Name of the NGO** : **FIRE FLIES**
2. **Address** : Dinnepalya, Kaggalipura post, Bangalore-560062
3. **Telephone No.** : 28432725
4. **Fax** : 28432130
5. **Email** : pipaltee@vsnl.com
6. **Web site** : www.fire-flies.net/www.water-alliance.net
7. **Contact person** : Mr. Siddharth
8. **Year of establishment:** 1999
9. **Year of initiation of EE programme** : 2000
10. **Type of the NGO** : Grassroots
11. **Thrust areas** : Environmental awareness, protection and conservation, rural development, local and women empowerment, water management
12. **Objectives of the NGO:** Rural development, environmental conservation and women empowerment
13. **Approaches and methods used** : Environmental sensitization used talks, workshops, seminars, plays, theatre.
14. **Geographical coverage** : Bangalore (Dinnepalya and Kaggalipura, Ullala)
15. **Target group** : Children, women, farmers and NGOs
16. **Amount spent on the programmes** : ———
17. **Funding agencies** : SKIP, BORDA, CCFD, FDH, ADER, FAP, CORDAID, TIDES Foundation
18. **Documentation** : Yes
19. **Publication of the NGO** : No
20. **Linkage with schools** :
21. **Other supporting organisations** : FEDINA DEWATS, # 42, Muniga layout, Sevanagar, Bangalore-560 033, Ph- 5492712
21. **Evaluation procedure employed** : Informal and by the donor agencies
23. **Coverage of the programme in the last 5 years**

Programmes/Projects	Follow up
Lake restoration	Yes
Women upliftment	Yes
Networking with school on EE programmes	Yes
Vermicompost workshop for agriculturists	No
Organic farming workshop	No
Honey and mushroom cultivation	Yes

24. **Nature of the programmes organised** : Awareness and action programmes
25. **Achievements of the NGO** : Lake restoration, women upliftment and rural upliftment
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1. **Name of the NGO** : **INDIAN CO-OPERATIVE CREDIT SOCIETY Ltd**
2. **Address** : No. 82, Sunder Murty Road, Cox Town, Bangalore- 560005
3. **Telephone Nos.** : 5483439/5483445
4. **Fax** : ———
5. **Email** : wajerome@vsnl.com
6. **Web site** : ———
7. **Contact person** : Mr. W.A.Jerome (MD)
8. **Year of establishment** : 1998
9. **Year of initiation to EE programmes** :
10. **Type of the NGO** : Grassroots
11. **Thrust areas** : Economic empowerment for women
12. **Objectives of the NGO** : Empowerment of women, training for savings, extension of loans, creating awareness of natural resource conservation during training programme
12. **Approaches and methods used** : Community empowerment, training programme
13. **Geographical coverage** : Andhra Pradesh, Tamil Nadu, Karnataka, Kerala
14. **Target group** : Women, NGOs, masses under poverty line,
15. **Amount spent on the programmes** : ———
16. **Funding agencies** : Internal funds
17. **Documentation** : No
18. **Publications of the NGO** :
19. **Linkage with schools** :
20. **Other supporting organisations** : Co-op Aid Trust, Spandana (Koramangala)
21. **Evaluation procedure employed** : Internal
22. **Coverage of the programmes in the last 5 Years:**

Year	No of Programmes/Projects completed	No of programmes on Hand
2003	-	20
2002	-	20
2001	63	-
2000	14	-

23. Nature of the programmes hel :

24. Achivements of the NGO:

- 1. Name of the NGO : INSTITUTE FOR YOUTH AND DEVELOPMENT (IYD)**
- 2. Address : 97, 17th 'B' Main, 5^h Block Koramangala
Bangalore -560095**
- 3. Telephone Nos. : 25530597/25533989**
- 4. Fax : 25530597**
- 5. Email : -----**
- 6. Website : -----**
- 7. Contact person : Mr. Shamsuddin**
- 8. Year of establishment: 1979**
- 9. Year of initiation to EE programmes :**
- 10. Type of the NGO :**
- 11. Thrust areas : Integrated development through education, training and action programmes**
- 12. Objectives of the NGO : Rural development, non-conventional energy and creating environment awareness**
- 13. Approaches and methods used : Participatory, training**
- 14. Geographical coverage : Karnataka, Tamil Nadu**
- 15. Target group : Youth, landless, artisans, small/marginal farmers, scheduled caste and scheduled tribe communities**
- 16. Amount spent on the programmes : -----**
- 17. Funding agencies : NORAD, AFPRO**
- 18. Documentation : No**
- 19. Publication of the NGO :**
- 20. Linkage with schools :**
- 21. Other supporting organisations : AFPRO**
- 22. Evaluation procedure employed :**

Year	No of Programmes/Projects completed	No of programmes on hand
2003	10	2

24. Nature of the programmes held:**25. Achievements of the NGO:**

1. **Name of the NGO** : KARNATAKA ENVIRONMENT RESEARCH FOUNDATION (KERF)
2. **Address** : CES- IISC Campus
3. **Telephone Nos.** : 22933099/23600985
4. **Fax** : 23601428
5. **Email** : cestvr@ces.iisc.ernet.in
6. **Website** : ces.iisc.ernet.in/energyfinance/kerf
7. **Contact person** : Dr. T. V. Ramachandra
8. **Year of establishment** : 1990
9. **Year of initiation to EE:**
programmes : 1990
10. **Type of the NGO** : Grassroots
11. **Thrust areas** : Fresh water eco systems, limnology
12. **Objectives of the NGO:** To disseminate knowledge to students regarding environment and ecology, in general, and limnology, in particular.
13. **Approaches and methods used** : Environmental camps and treks, workshops, seminars, lectures, talks, slide shows, hands-on activities and interactive sessions.
14. **Geographical coverage:** Bangalore
15. **Target group** : Students, youth and individuals.
16. **Amount spent on the programmes** : ———
17. **Funding agencies** : Centre for Learning - Canada and self generation.
18. **Documentation** : Yes
19. **Publications of the NGO** : Newsletter and contributions to journals
20. **Linkage with schools** :
21. **Other supporting organisations** : ATREE
22. **Evaluation procedure used** : Informal feedback.
23. **Coverage of the programmes in the last 5 years**

Programmes/Projects	Follow up
Summer workshops on limnology	No
Dr. Jack Valentine's 'Know your eco system'- hands-on activity programme	No
Basic research on limnology	yes
24. Nature of the programmes organised	: Awareness building and Action
25. Achievements of the NGO	: Basic research and dissemination of ecological knowledge through regular summer workshops.

1. **Name of the NGO** : **MYRADA**
2. **Address** : # 2, Service Road , Domlur Layout, Bangalore-78.
3. **Telephone Nos.** : 25593166/25572028
4. **Fax** : _____
5. **Email** : myrada@vsnl.com
6. **Website** : www.myrada.org
7. **Contact person** : Mr. Aloysius P. Fernandez
8. **Year of establishment** : 1984
9. **Type of the NGO** : Grassroots and Networking
10. **Thrust areas** : Formation of self-help group and child development, micro watersheds, poverty alleviation, waste land management, upliftment of bonded labourers and refugees, strategies and training, education
11. **Objectives of the NGO** : To uplift the rural poor and downtrodden, promote women's and children's empowerment, influence public policy in favour of the poor, recreate balanced relationship between natural resources and the legitimate needs of the people, strengthen networking among formal and informal institutions
12. **Approaches and methods used** : Community participation in planning and implementation of the programmes
13. **Geographical coverage** : Kerala, Andhra Pradesh and Karnataka
14. **Target group** : NGOs, farmers, labourers, weaker sections and women and children
15. **Amount spent on the programmes** : _____
16. **Funding agencies** : Ford Foundation, Swiss Agency for Development and Co-operation (SDC), German Agro Action and CIDA/HIDA.
17. **Documentation** : Yes

18. **Publication of the NGO:** Yes
 19. **Linkage with schools:** No
 20. **Other supporting organisations** : FEDINA
 21. **Evaluation procedure employed** : Internal and External
 22. **Coverage of the programmes in the last 5 Years**

Programmes/Projects	Follow Up
Rural development	Yes
Formation of SHG	Yes
Women empowerment	Yes
Water shed management	Yes
Capacity building	Yes
Learning centres for rural school drop-outs	Yes
Sanitation programmes	Yes
Vocational training and guidance	Yes

23. **Nature of the Programmes held** : Awareness building and Action
 24. **Achievements of the NGO** : Rural upliftment, women empowerment and formation of SHGs.

1. **Name of the NGO** : **OUTREACH**
 2. **Address** : 109, Coles Road, Fraser Town, Bangalore - 560005
 3. **Telephone No.** : 25545365
 4. **Fax** : _____
 5. **Email** : _____
 6. **Website** : _____
 7. **Contact person** : Mr. Guruswamy
 8. **Year of establishment** : 1993
 9. **Year of initiation to EE programmes** :
 10. **Type of the NGO** : Grassroot
 11. **Thrust areas** : Developmental programmes to improve the environmental conditions in rural areas
 12. **Objectives of the NGO:** Management of natural resources, education and training programmes
 13. **Approaches and methods used** : Seminars, interaction sessions and workshops
 14. **Geographical coverage** : Karnataka, Tamil Nadu, Andhra Pradesh
 15. **Target group** : In-service professionals, field workers and NGO personnel in watershed management

16. Amount spent on the programmes : ———
17. Funding agencies : Donations
18. Documentation : Annual report
19. Publications of the NGO : No
20. Linkage with schools : No
21. Other supporting organisations : ———
22. Evaluation procedure employed : Informal
23. Coverage of the programmes in the last 5 years

Year	No of Programmes/ Projects completed	No of Programmes on Hand
2003		4

24. Nature of the programmes held : Awareness building and action

25. Achievements of the NGO : Rural upliftment women empowerment, upliftment of street children and rural health programmes.

1. Name of the NGO : **PARINATI**
2. Address : 2928, 1st floor 1/2, Cauvery Layout, near Crystal Plaza Hosur Road, Bangalore - 560029
3. Telephones : 25522070/25531751
4. Fax : 25531751
5. Email : parinati@bgl.vsnl.net.in
6. Website : www.parinati.org
7. Contact person : Mr. Joseph Panackel
8. Year of establishment : 1996
9. Year of initiation of EE programmes :
10. Type of the NGO : Grassroots and Networking
11. Thrust areas : Training of NGOs, women, children and tribals; water harvesting, slum development and water treatment.
12. Objectives of the NGO : Empowerment of NGOs, women and children; Environmental awareness building, conservation of water, interfacing NGOs with resource agencies.
13. Approaches and methods used : Participatory approach, seminars, lectures, workshops and demonstrations
14. Geographical coverage : Slums of Koramangala, Jigani (Anekal), Gundalpet
15. Target group : Tribal community, villagers - Gundalpet and Jigani, urban slums – Koramangala

16. **Amount spent on the programmes** : Rs.15 lakh plus
17. **Funding agencies** : Government funds and self funding
18. **Documentation** : Annual report
19. **Publication of the NGO** : No
20. **Linkage with schools** :
21. **Other supporting organisations** : VHAK, Ulsoor (Neerajakshi, Phone: 5546606)
22. **Evaluation procedure employed** : Informal and through reports when funded by the Government.

23. Coverage of the programmes in the last 5 years:

Programmes/Projects	Follow up
Tribal uplift	Yes
Rainwater harvesting	No
Networking of NGOs	Yes
Consultancy	Yes
Slum Development	Yes

24. **Nature of the programmes held** : Awareness building and action
25. **Achievements of the NGO** : Tribal upliftment and slum development

1. **Name of the NGO** : **PROGRAMME FOR ENVIRONMENTAL AWARENESS IN SCHOOLS (PEAS)**
2. **Address** : 54, MIG, KHB Colony, 5th Block, 2b Cross, Kormangala , Bangalore-560 095
3. **Telephone No.** : 25531154
4. **Fax** : 25533387
5. **Email** : peasmag@rediffmail.com
6. **Website** : www.peasnet.org
7. **Contact person** : Sridevi
8. **Year of establishment** : 1996
9. **Year of initiation of EE programme** : 1996
10. **Type of the NGO** : Grassroots
11. **Thrust areas** : Environment awareness programmes in schools, slum development, lake restoration, waste management.
12. **Objectives of the NGO** : To develop eco-friendly and cleaner environment.
13. **Approaches and methods used** : Painting competition, quiz, rallies, talks, lectures, workshops, clubs, interaction sessions and

multimedia presentations.

14. **Geographical coverage** : India.
 15. **Target group** : Students, teachers and youth.
 16. **Amount spent on the programmes:** ———
 17. **Funding agencies** : Switzerland and self generation.
 18. **Documentation** : Yes
 19. **Publications of the NGO:** Magazine.
 20. **Linkage with schools** :
 21. **Other supporting organisations** : CMCA
 22. **Evaluation procedure used** : Informal feedback from students, teachers and principals.
 23. **Coverage of the programmes in last 5 Years:**

Programmes/Projects	Follow up
PEAS Clubs in schools	Yes
Water rally	No
Annual children conference	No
Painting competition	No
Quiz	No

24. **Nature of the programmes held** : Awareness building and Action
 25. **Achievements of the NGO** : Formation of PEAS Clubs in different schools, even in corporation and government schools.

1. **Name of the NGO** : **DR. R. M. LOHIYA INSTITUTE OF ECOLOGY AND ENVIRONMENT**
 2. **Address** : No.281, II A Main, Girinagar, Bangalore-560085
 3. **Telephone No.** : 31849926
 4. **Fax** : ———
 5. **Email** : ———
 6. **Website** : ———
 7. **Contact person** : T. S. Vivekananda
 8. **Year of establishment** : 1990
 9. **Year of initiation to EE programmes** : 1990
 10. **Type of the NGO** : Grassroots
 11. **Thrust areas** : Environment awareness and conservation, culture-based environment, structure education
 12. **Objectives of the NGO** : To build environmental awareness, promote activism for environment protection
 13. **Approaches and methods used** : Coaching in schools, workshops and seminars, hands-on activities, quiz, A-V programmes and competitions

14. **Geographical coverage** : Karnataka - all districts
 15. **Target group** : Students and rural folk
 16. **Amount spent on the programmes** : ————
 17. **Funding agencies** : Local and self-generated
 18. **Documentation** : Yes
 19. **Publications of the NGO** : Books.
 20. **Linkage with schools** : Yes (delinked at present)
 21. **Other supporting organisations** : ————
 22. **Evaluation procedure used:** Informal feedback from students, teachers and principals, test for students' knowledge
 23. **Coverage of the programmes in the last 5 years**

Programmes/Projects	Follow up
Coaching for students (primary to higher secondary schools) – 1990 to 1998	yes
Competitions (debate, drawing, posters ,etc.)	no
Quiz	no
A-V Programmes	no

24. **Nature of the programmes held** : Awareness building and Action
 25. **Achievements of the NGO** : Covered about 8,600 schools for environmental awareness programme, considerable number of publications for different categories of people and production of an Environment Education Kit for school students and proposal for an adventurous programme on ECOCAVES

1. **Name of the NGO** : **SAMPARK**
 2. **Address** : 420, 2nd A, cross, 11th Main, 3rd Block, Koramangala, Bangalore - 560034
 3. **Telephone Nos.** : 5530196/5531138
 4. **Fax** : 5533358
 5. **Email** : ————
 6. **Website** : ————
 7. **Contact person** : Ms. Parimala
 8. **Year of establishment** : 1991
 9. **Year of initiation of EE programmes** :
 10. **Type of the NGO** : Grassroots
 11. **Thrust areas** : Building and expanding capacities, economic activity for poor people and organising gender

- sensitisation programmes
- 12. Objectives of the NGO** : Gender sensitivity training, women empowerment and capacity building
- 13. Approaches and methods used** : Seminars, demonstrations, slide shows, workshops
- 14. Geographical coverage** : Karnataka
- 15. Target group** : Poor people, NGO personnel working on development issues, women
- 16. Amount spent on the programmes** : ———
- 17. Funding agencies** : Own funds and donor agencies
- 18. Documentation** : Yes
- 19. Publications of the NGO:** No
- 20. Linkage with schools** :
- 21. Other supporting organisations** : ———
- 22. Evaluation** : Informal
- 23. Coverage of the programme in the last 5 years**

Programmes/Projects	Follow up
Capacity building of the agriculturists	yes
SHG formation	yes
Gender sensitisation workshops	no
Watershed programmes	yes
Poverty alleviation programmes	yes
Demonstration of field activities	no

- 24. Nature of the programme** : Awareness building and Action
- 25. Achievement of the NGO** : Capacity building of lower economic groups through formation of SHG and gender sensitisation workshops.

- 1. Name of the NGO** : **TATA ENERGY RESEARCH INSTITUTE (TERI)**
Recently changed as THE ENERGY AND RESOURCES INSTITUTE
- 2. Address** : Domlur, Bangalore - 560008
- 3. Telephone Nos.** : 22268296/22261090/22257009
- 4. Fax** : 22255760
- 5. Email** : teribl@giabg01.vsnl.net.in
- 6. Web** : www.teriin.org
- 7. Contact person** : Ms. Lakshmi Gopala Krishna
- 8. Year of establishment** : 1974
- 9. Year of initiation of EE programmes** :

- 10. Type of the NGO** : Grassroots and Networking
- 11. Thrust areas** : Consultancy research and training in the rational use of energy in the industrial sector. Training and information dissemination through demonstration projects on energy conservation.conducting energy audits.
- 12. Objectives of the NGO** : Garbage management programme, creating environment awareness, waste management, studies on biodiversity and energy conservation.
- 13. Approach and methods used** : Seminars, workshops, lectures, interaction sessions, quiz , demonstrations and hands-on activities.
- 14. Geographical coverage** : India, (south Andhra Pradesh, Karnataka,Tamil Nadu, Pondicherry and Kerala) Malaysia, UAE, Russia.
- 15. Target group** : Students, urban and rural communities, in-service professionals in industrial sector and scientists.
- 16. Amount spent on the programmes** : ———
- 17. Funding agencies** : Energy magement centre, Government, KEB, EC, GATC
- 18. Documentation** : Yes
- 19. Publication** : Newsletter, journals, e-journals, databases and audiovisuals.
- 20. Other supporting organisations:**
- 21. Evaluation procedure** : Internal informal evaluation and through funding cemployed agencies.
- 22. Coverage of the programmes in the last 5 years**

Programmes/Projects	Follow up
Consultancy	no
Basic research (Advanced school of research)	yes
Waste management	yes
Energy conservation	yes
Conducts energy audits	yes
Training programmes	no
Capacity building and Education	yes

- 23. Nature of the programmes held** : Awareness building and action
- 24. Achievements of the NGO** : Energy conservation, recognition by UGC as a deemed university and status of a global entity.

1. **Name of the NGO** : **VIDYANIKETAN (Society for education and social development)**
2. **Address** : Jarganahalli, J. P. Nagar Post, Bangalore - 560078
3. **Telephone No.** : 66641552
4. **Fax** : _____
5. **Email** : vidyanic@sify.com
6. **Website** : _____
7. **Contact person** : Susheelamma/Prabhakar
8. **Year of establishment** : 1988
9. **Year of initiation of EE programmes** :
10. **Type of the NGO** : Grassroots
11. **Thrust areas** : Child labour, watershed development, formal and informal education, and women upliftment.
12. **Objectives of the NGO** : Education for SC/STs and weaker sections, adult education, women empowerment and water conservation and management.
13. **Approaches and** : Community approach (planning, implementation, review), street plays, folk songs, seminars, demonstrations, workshops, talks and lectures.
14. **Geographical coverage** : Bidar, Bangalore rural (Kankapura and Channapatna), Bangalore urban (Anekal).
15. **Target group** : Farmers, village leaders, women, general public, local institution members, landless labourers, rural artisans.
16. **Amount spent on the programmes** : Rs.1 crore, 20 lakhs
17. **Funding agencies** : NABARD and self-generated.
18. **Documentation** : Yes
19. **Publications of the NGO** : A Kannada booklet on watershed development.
20. **Linkage with schools** :
21. **Other supporting organisations** : _____
22. **Evaluation procedure used** : Informal and through funding agency.
23. **Coverage of the programmes in the last 5 years:**

Programmes/Projects	Follow up
Watershed development	yes
Adult education programme	yes
Youth development	yes
Women empowerment	yes
Vocational training	no
Rain water harvesting	no

24. **Nature of the programmes** : Awareness building and action
25. **Achievements of the NGO** : Successful watershed programmes in Channapatna and Kanakapura, vocational training programmes for women and youth, formal schooling till 10th standard for underprivileged children.
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1. **Name of the NGO** : **VIKASA**
2. **Address** : No.46, 2nd Floor, 3rd Phase, 6th Main, J.P.Nagar, Near East End Circle, Bangalore -560078
3. **Telephone No.** : 9845028753
4. **Fax** : 6587548
5. **Email** : vrdo@satyam.net.in/guru@winningteam.com
6. **Website** : —————
7. **Contact person** : Mr. Prassana Kumar/Mr. Gururaj
8. **Year of establishment** : 1992
9. **Year of initiation to EE programmes** :
10. **Type of the NGO** : Grassroots
11. **Thrust areas** : Child labour, women development, health, watershed, slum development and training.
12. **Objectives of the NGO** : Child and women empowerment, savings and credit, natural resources management .
13. **Approaches and methods used** : Community approach, street play, theatre, lectures, talks, workshops and training.
14. **Geographical coverage** : Mandya, Uttara Kannada, B'lore Rural, Hassan and Koppal.
15. **Target group** : Children, women, youth, farmers
16. **Amount spent on the programmes** : Rs. 9.6 lakhs
17. **Funding agencies** : CAPART, VHAK, NABARD, KSWDC, W and CWD, KUIDFC, SKIP, TDH, AID ET ACTION, IGSSS, UNICEF
18. **Documentation** : Yes
19. **Publications** : Brochure
20. **Linkage with schools** :
21. **Other supporting organisations** : National Law School
22. **Evaluation procedures** : Internally done informally and also done by the used funding agencies.
23. **Coverage of the programmes in the last 5 years:**

Programmes/Projects	Follow up
Rural development	yes
Women empowerment	yes
Non-formal education for the children without basic schooling	yes
24. Nature of the programmes held	: Awareness building and action.
25. Achievements of the NGO	: Rural development, educating the school dropouts and women empowerment

1. **Name of the NGO** : **VIVEKA VARDINI EDUCATION SOCIETY**
2. **Address** : 7-8, 3rd cross, 14th main, Prakash Nagar, Bangalore - 560021
3. **Telephone No.** : 23324271
4. **Fax** : ———
5. **Email** : vivekavardini_sol@rediffmail.com
6. **Website** : www.plaNETvidya.com/sol/vivekavardhini
7. **Contact person** : Ms. Umadevi
8. **Year of establishment** : 1959
9. **Year of initiation to EE programmes** :
10. **Type of the NGO** : Grassroots
11. **Thrust areas** : Health, family welfare, self employment, women empowerment, environment conservation
12. **Objectives of the NGO** : Formal, non-formal and adult education; awareness towards environment conservation
13. **Approaches and methods used** : Participatory, action research, slideshows, games, quiz, hands-on activities, lectures, talks, and seminars.
14. **Geographical coverage** : Prakash Nagar in Bangalore and Ram Nagar
15. **Target group** : Children and women
16. **Amount spent on the programmes** : ———
17. **Funding agencies** : Government and self generation
18. **Documentation** : Yes
19. **Publications of the NGO** : No
20. **Linkage with schools** :
21. **Other supporting organisations** : Sahana
22. **Evaluation procedure employed** : Informal and by the funding agency

23. Coverage of the programmes in the last 5 years:

Programmes/Projects	Follow up
Watershed programmes	yes
Action programme on: monitoring borewells in the area	
Collection of plastic covers in the locality to maintain cleanliness	yes
Formal education	yes
Women empowerment	yes
Afforestation	yes

- 24. Nature of the programmes held** : Awareness and Action
- 25. Achievements of the NGO** : Action research projects and formal education

- 1. Name of the NGO** : **WORLD WIDE FUND FOR NATURE (WWF – INDIA)**
- 2. Address** : Kamala Mansion, 143, Infantry Road, Bangalore - 560001
- 3. Telephone No.** : 22863206
- 4. Fax** : 22866685
- 5. Email** : wwfindia@vsnl.net
- 6. Website** : www.wwfindia.org
- 7. Contact person** : Mr. Kartikeyan
- 8. Year of establishment** : 1969
- 9. Year of initiation of EE programmes** : 1975
- 10. Type of the NGO** : Grassroot and networking
- 11. Thrust areas** : Promotion of nature conservation and environmental protection as the basis of sustainable and equitable development.
- 12. Objectives of the NGO** : Promotion and organization of nature conservation, training programmes and fund raising.
- 13. Approaches and methods used** : Participatory, quiz, workshops, nature camps, fieldtrips on nature study, games, seminars, film shows, slideshow, formation of WWF clubs.
- 14. Geographical coverage** : India - international organisation (Switzerland)
- 15. Target group** : Youth, children, teachers, professionals administrators
- 16. Amount spent on the programmes** : _____
- 17. Funding agencies** : WWF – INDIA

18. **Documentation** : Yes
 19. **Publications** : Newsletter
 20. **Linkage with schools** :
 21. **Other supporting organisations** : CEE
 22. **Evaluation procedure employed** : Informal - feedback from the participants and associates

23. Coverage of the programmes in the last 5 Years:

Programmes/Projects	Follow up
WWF clubs in schools	yes
Quiz	no
Teacher training programmes on EE	no
Nature study treks	yes
Nature camps	no
Wild life and nature awareness programmes	no

24. **Nature of the programmes** : Awareness building and Action
 25. **Achievements of the NGO** : WWF clubs in schools and creating awareness and concern for life and biodiversity.

1. **Name of the NGO** : **YOUNG MEN'S CHRISTIAN ASSOCIATION (YMCA)**
 2. **Address** : 66, Infantry Road, Bangalore - 560001
 3. **Telephone No.** : 5591681
 4. **Fax** : 5591583
 5. **Email** : arun_karodi@yahoo.com/
ymca_bangalore@vsnl.com
 6. **Website** : www.ymcablr.net
 7. **Contact person** : Mr. Arun Kumar
 8. **Year of establishment** : 1900
 9. **Year of initiation of EE programmes** : 1991
 10. **Type of the NGO** : Grassroots
 11. **Thrust areas** : Overall development of the society through education and action programmes.
 12. **Objectives of the NGO** : Rehabilitation of street children, vocational guidance, creating environment awareness
 13. **Approaches and methods used** : Painting competition, planting and gifting saplings, quiz, rallies, talks, lectures, workshops, seminars and street plays.

- 14. Geographical coverage** : Karnataka (Bangalore branch) and different nations
- 15. Target group** : Students, teachers, youth, street children, rural people and others
- 16. Amount spent on the programmes** : ———
- 17. Funding agencies** : Government, donations and self-generation.
- 18. Documentation** : Yes
- 19. Publications** : Booklet , Newsletter and Magazine.
- 20. Linkage with schools** :
- 21. Other supporting organisations** : CES (Prof. Gadgil)
- 22. Evaluation procedure used** : Questionnaire and informal feedback.
- 23. Coverage of the programmes in the last 5 years:**

Programmes/Projects	Follow up
Afforestation	yes
Water rally	no
Farm for medicinal plants	yes
Youth development	yes
Career counselling	no
Gifting a plant programme	no
Uplift of street children	yes
Formal physical education	no

- 24. Nature of the programmes held** : Awareness building and Action
- 25. Achievements of the NGO** : Farm for medicinal plants, water rally, career counselling.

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