UNU-IAS Working Paper No. 129

Environmental Education for Sustainable Development
Asian Perspectives

Masudul Hoq Chowdhury

December 2004
Abstract

Environmental Education in a broad sense is a learning process, whereby individuals and community acquire the knowledge, attitudes, skills, values and motivation to improve the quality of the environment and attain an ecologically and socially sustainable future.

The environmental condition of the world is deteriorating at an alarming rate due to changes in human activities triggered by inappropriate economic activities and rapidly changing demographic and socio-economic patterns. The problems are the outcome of dynamic interaction of poverty, population growth and its changing distribution and the misuse of resources, wasteful production and human greed. Paradoxically, underdevelopment as well as haphazard development processes are also responsible for its precarious situation.

The study is making some general discussion on Environmental Education for Sustainable Development (EESD), Education for Sustainable Development (EfSD) and UN-Decade of Education for Sustainable Development (DESD). The study highlights the state of environment, Environmental Education (EE), and also analyses some community based EE activities in four Asian nations such as Thailand, The Philippines, Japan and Bangladesh.

These countries are beset with a range of problems such as, rapid population growth, air pollution, increasing rates of urbanization, toxic and industrial waste, depletion of natural resources, desertification, loss of biodiversity and natural habitats, inadequate shelter, health care and water supply, diminishing wetlands and coastal resources, marine pollution, loss of soil and soil fertility, and mining. The results of the analysis of EE reveal that people of those countries are conscious of, and responsive to the environmental problems and their consequences. They are seriously dealing with the problems of environmental deterioration and have developed a positive attitude towards its mitigation. People seem cooperative and enthusiastic to learn about how to safeguard the environment. Environmental education is provided by many agencies and institutions such as governments, NGOs, educational institutions, civil society organizations, and the media.

However, a number of problems do exist in the region. There appears to be a lack of consensus on the meaning and concept of environmental education and level of their understanding. There is a strong evidence of a lack of coordination between organizations as well as personnel. The situation is that “every body’s responsibility is nobody’s responsibility.” Lack of coordination amongst responsible agencies is a common problem, and due to this, there is duplication or competition between actors.

Even though environmental concerns are being realized by the people, the approach needs further improvement in its effectiveness. It is necessary to recognize environment and development as two sides of the same coin. Environmental education should expand into new horizons on the basis that the environment is multi-sectoral, multi-disciplinary and multifaceted.
1. Introduction

Environmental Education (EE) is probably as old as human civilization. Through the centuries people have learned how to interact with their surroundings environment. Growing up has always involved building up knowledge of the interactions between the various elements of the natural environment. People have been forced to learn how to survive in a world where the environment is more powerful than human beings and also how to make use of that environment. For centuries, there have been ethnic groups that live in harmony with the environment. They possessed a profound understanding of how to manage natural resources in a sensible way and they have passed on their knowledge from generation to generation. Thus in early days, EE mainly consisted of learning how to master and make wise use of the natural environment. Nevertheless, nature has also often been perceived as an unlimited reserve of resources. Developments such as urbanization and industrialization, have sometimes led to irreversible over-exploitation of these resources\(^1\).

Figure 1: Environmental Change by Human Activities

\(^1\) Jacoline Vinke (1993), Actors and Approaches in Environmental Education in Developing Countries
Today citizens are living in a society of rapid change. These changes in society require its members to adjust to new social, political and economic paradigms. All countries and regions in this world are closely interconnected with the all-covering diffusion of capitalistic system of economy, the globalization. The awareness of global citizenship becomes considered as very important. The intensifying interconnectedness of all regions under global capitalism requires each region to look at its own color of characteristics so as to survive in the keen competition of globalization.

The society of the 21st century observes the significance of knowledge and information. New kind of creative knowledge and information will play the important role of developing new technologies, leading to sustainable growth of economy in harmony with the environment. Environment is the critical basis of the existence of mankind, and the basis of sustainable development of economy. Without sound environment, people in the world can not survive for long time.

Harmonious relationship between the environment and humans has been one of the most important issues regardless of the developing or developed world. Unfortunately the balance of environment has begun to brake as humans need for raw materials from the physical environment has increased. The search for the most convenient method attaining a materialistic lifestyle has led to the excessive development or exploitation of the environment, which gave rise to pollution and destruction of the environment. Humans especially have seen environment of the earth deteriorating at an increasing rate since the Industrial Revolution of the 18th century, the basis of which was the manufacturing industry to make secondary products of resources from the physical environment.
The use and exploitation of the physical environment apparently contributes to more convenient human life and the growth of regional economy. It is undeniable that human ways of life in the present industrial capitalistic society is more progressive and more convenient in the aspect of materialistic civilization than the ones in the past, which were primitive and agricultural subsistence societies. Also, it should be remembered that the progress and convenience have been successful at the cost of environmental deterioration such as the global and local scale change of climate and the disturbance of ecosystem. Here the society is confronted with the dilemma of the continuous growth of economy for better life and the conservation of environment for basic survival.

This dilemmatic issue over the concern of the stability of ecosystem and sustainability of the existing lifestyles is never and should never be limited at the forefront of public concern. In recent years, there has been growing world-wide concern over educating for sustainability in school curricula as well as in the society as a whole.

Education for sustainability addresses quality of life issues through combining environmental conservation education and economic development education. Environmental conservation education is largely concerned with the balanced and sound quality of the physical environment, while economic development education has traditionally focused on the quality of material life of human through economic development. In fact, the more economic development and material life become, the worse the environmental problems become, such as climate change, deforestation, land degradation, drought, depletion of natural resources, loss of biodiversity, overpopulation, food security, drought, poverty, urban decay, air pollution, water pollution and so on. These problems are the concerns not only for environmental education but also for economic education or development education.
EE is gaining in popularity as an approach for coping with environmental problems. It is applied around the world in many ways, in different contexts, and with varying degrees of impact. Environmental problems cannot be separated from other social, cultural, economic and political issues in a society. Traditional EE falls short of its goals because it fails to acknowledge existing systems of knowledge. Environmental problems cannot be solved by one “knowing” group on behalf of another group, which is seen to be both ignorant and culpable. The only solutions that will work in the long term are those that address the root of the problem. This calls for involvement at all levels of society, which can only occur if there is common awareness, which, in turn, comes about through a “common learning process”. It is only possible to create such a process if all parties recognize and accept each other’s potential for making a valuable contribution. As people begin to learn together and from each other, a momentum is generated, with its own dynamic qualities. Considering all those facts the study presented has been designed with the following objectives:

1.1 Objectives of the Study

The objectives of the study were to

1. Make a general discussion on EE and ESD.
2. Discuss the state of environment and EE in Asian countries.
3. Overview of some community based EE activities in Asian countries.
4. Make some policy recommendations for the Decade of Education for Sustainable development.

1.2 Methodology

The information were collected from secondary sources like published report, Journal article, internet edition, workshop, seminar and conference report as well as discussion. The
countries selected for this study was Japan, Thailand, Philippine and Bangladesh. The information were collected on

- environmental issues of the studied countries
- EE activities in studied countries
  
  i. Collection / accumulation of existing information
  ii. Collection of some case studies
  iii. Analysis of the case studies
  iv. Consideration of effective tools or partnerships

1.3 Limitations of the Study

The study information was collected from secondary sources of material, within a limited scale, on the basis of which, it’s very difficult to make an in-depth analysis on EE activities in Japan, Philippines, Thailand and Bangladesh. Although the study has incorporated some pioneering examples on community based EE activities, they neither represent the country nor cover the wide array of knowledge on EE. What does it for, to document some good practices on EE in those countries.

2. Environmental Education: Basic Concepts

In a broader sense, Environmental Education (EE) includes awareness raising, and training, which provides the necessary complement to other instruments of environmental management. Many of EE activities lies beyond the realm of the formal education system and has to take into account the livelihood of the people whom it aims to educate and whose behavior it seeks to influence.

During the mid 1970’s, a broad definition was put forward and agreed upon by UNEP/UNESCO, EE is a permanent process in which individuals gain awareness of their environment and acquire the knowledge, values, skills, experiences and also the
determination which will enable them to act individually, collectively and to solve present and future environmental problems.

EE constitutes a learning process in which the entire society is to become involved in one way or other, for example through the media, schools, the workplace, NGOs, governmental and even religious institutions. While one can have an over all design for this process, it is evolutionary by nature, with many actors at different levels interacting in various directions (top-down, bottom-up and horizontally) according to their specific situations and interests.

In 1970 IUCN made the first international recognized definition of environmental education. IUCN considers that “environmental education is the fundamental basis guaranteeing the participation of communities in the process of conservation of natural resources and the improvement of the quality of life and the environment."

The concept of EE differs and varies according to the various conditions. For example, common people of Bangladesh view EE as education for protection of forest areas, soil, water, land and flood, and disaster management. On the other hand the nomadic people of Mongolia view EE as being concerned with draught, desertification and pastures. The developed country or the industrialized country people view EE as dealing with problems of air or water pollution, waste disposal and noise. Even the concept of EE varies from place to place.

According to one definition given by the Environmental Education Act of Nepal 1970, (Meha; 1994), EE means the educational process dealing with man’s relationship with his natural and man made surroundings and includes the relationship between population,

\(^2\) IUCN, WWF, UNEP (1992), Caring for the Earth
pollution, resource allocation and depletion, conservation, transportation, technology and urban and rural planning to the total human environment.

The Institute of Global Environmental Strategies (IGES), defined EE as “a holistic approach to the learning process, whereby individuals and community acquire the knowledge, attitudes, skills, values and motivation to improve the quality of the environment and attain an ecologically and socially sustainable future”.

In 1997 the Government of Malaysia in his first National Workshop on EE, defined EE as “a process aimed at creating awareness through developing knowledge, skills, attitudes and values towards empowering people to share responsibility for improving the quality of the environment and attaining sustainable development”.

According to IUCN, “EE is the process of recognizing values, and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelatedness among man, his culture and his biophysical surroundings. EE also entails practice in decision-making and self-formulation of code of behavior about issues concerning environmental quality”. (Palmer, 1998).

From these definitions it is easily perceived that EE is a holistic approach and as such, it is inherently interdisciplinary in nature. The wide scope and integrated picture of EE is also reflected by the objectives and goals set forth by 1977 Tbilisi Intergovernmental Conference.

---

3 IGES (2002), Environmental Education Project; Regional Strategy on Environmental Education in the Asia-Pacific
on Environmental Education\textsuperscript{6}, which was amended at UNESCO meetings in the region to indicate that sustainable development ought to be the key focus of environmental education.

The amended objectives and goals are presented here:

\section*{2.1 Objectives of Environmental Education}

- \textit{Awareness}: to help social groups and individuals acquire awareness of and sensitivity to, the complete environment and its associated problems

- \textit{Knowledge}: to help social groups and individuals gain a variety of experiences in and acquire a basic understanding of the environment and its associated problems

- \textit{Attitudes}: to help social groups and individuals acquire a set of values and feelings of concern for the environment and the motivation to actively participate in environmental improvement and protection.

- \textit{Skills}: to help social groups and individuals acquire the skills for identifying and solving environmental problems

- \textit{Participation}: to provide social groups and individuals with an opportunity to become actively involved at all levels in working towards resolving environmental problems.

\section*{2.2 Goals of Environmental Education}

- To foster clear awareness of and concern about, economic, social, political and economic interdependence at local, regional, national and international/global levels

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

- To develop and reinforce new patterns of environmentally sensitive behaviors among individuals, groups and society as a whole for a sustainable environment.

It is essential to recognize that environment and development are two sides of the same coin. Many development trends leave increasing numbers of people poor and vulnerable, while at the same time degrading the environment. Our common future goes to trace the relationship between environment and development. “Many forms of development erode the

\textsuperscript{6} IGES (2001), Environmental Education in the Asia-Pacific Region
environmental resources on which they must be based, and environmental degradation can undermine economic development”. There are also reciprocal links between poverty and the environment, poverty being recognized “as a major cause and effect of global environment” (WCED, 1987). These linkages can be represented diagrammatically as in Figure-2.

![Figure 2: Linkages between Development, Environmental Degradation and Poverty](image)

3. What is Sustainable Development?

Sustainable development is a difficult concept to define; and it is continually evolving, which makes it more difficult to define. The term “sustainable development” first came to the prominence in the World Conservation Strategy (WCS) published by the World Conservation Union (IUCN) in 1980 (Reid, 1995). Three overall objectives for sustainable development were worked out and presented in 1981 in the World Conservation Strategy worked out by the WWF (World Wide Fund for Nature), UNEP (United Nations Environment Programme) and IUCN. The three objectives were:

- To maintain essential ecological processes and life support systems
- To conserve genetic diversity and wild species
- To ensure sustainable unitization of species and ecosystems.

---

7 Reid D. (1995), Sustainable Development
8 Reid D. (1995), Sustainable Development
Sustainable Development achieved a new status with the publication of “Our Common Future”, the Brundtland Report, in 1987 and has gained even greater attention since the United Conference on Environment and Development (UNCED) held in Rio (de Janeiro in June 1992. The Brundtland Commission’s definition of sustainable development satisfying present needs without compromising the ability of future generations to meet their own needs-is still the most widely-used starting point for discussions on sustainable development.

Sustainable development is generally thought to have three components: environment, society and economy. The well-being of these three areas are intertwined, and not separate. For example, a healthy, prosperous society relies on a healthy environment to provide food and resources, safe drinking water, and clean air for its citizens. Thus sustainability is considered to be a paradigm for thinking about a future in which environmental, societal and economic consideration are balanced in the pursuit of development and improved quality of life.

There are three essential societal dimension of modern society; economy, polity, and culture, which have functional differentiation (not division) interacting with, but independent from each other. These three essential dimensions are the realms where the key actors are active and from which the actors derive the substance for their dialogue and interaction with each other (Fig-3). This image of society animates the vision, parameters, and strategies of sustainable development.

Business is the key actor in the realm of the economy where the central social concern and process is the mutually beneficial production and distribution of goods and services to meet the physical needs of human beings. Government is the key actor in the realm of polity where
the central social concern and process is participatory, democratic governance and rule making to secure the human rights of all citizens including justice and equity. Civil society is the key actor in realm of culture where the central social concern and process is the development of the social and spiritual capacities of human beings in order, among others, to advance the frontiers of knowledge, to achieve clarity and coherence of values and to advocate the public interest. These three key actors in sustainable development can simply be viewed as the most organized and significant representatives of the prevailing social processes in each of the three essential dimension of society.

Society and its key actors, in pursuit of sustainable development are bounded by two key considerations. On the physical and material side, the key actors must nurture the integrity and carrying capacity of the varied ecosystems, landscape ecologies and ultimately the biosphere of the earth. On the human side, the key actors must also affirm that their respective social processes empower the freedom, creativity and caring capacity of individuals who are the essence of society (Fig. 4). Hence, the pursuit of sustainable development is grounded on the primacy of people and nature in the development process.

Thus the essence of sustainable development is in the harmonious integration of a sound and viable economy, responsible governance, social cohesion/harmony and ecological integrity to ensure that development is a life-enhancing process. In this context, the ultimate aim of development is human development now, and through future generations. Failing this, development is bound to be ‘jobless’ and ‘ruthless’ (in the realm of the economy), ‘rootless’ (in the realm of culture), ‘voiceless’ (in the realm of polity) and ‘futureless’ (in the realm of nature) as detailed in the 1996 UNDP Human Development Report⁹.

Agenda 21 envisions a better quality of life for all through the development of a just, moral, creative, spiritual, economically vibrant, caring, diverse yet cohesive society characterized by appropriate productive, participatory and democratic process, and living in harmony within the limits of the carrying capacity of nature and the integrity of creation. The Agenda 21 approach adheres to the following principles of sustainable development (Figure 3).

![Figure 3: Sustainable Development in Relations to the Essential Dimensions of Society](http://www.psdn.org.ph/agenda21/unity.htm)

**3.2 Transformation of EE to Education for Sustainable Development (ESD)**

The rise of global environmental problems and the spread of the new slogans, such as sustainable development, posed new challenges to EE. The perspective of the global environment and development problems and the Rio conference increased the stakes. Global

---

10 Principles of Unity, Chapter 1, [http://www.psdn.org.ph/agenda21/unity.htm](http://www.psdn.org.ph/agenda21/unity.htm)
environment problems became public issues in the West in the late 1980s. The ozone hole, the greenhouse phenomenon and the alarming decline in biodiversity were seen as serious new threats. The underlying problems, such as deforestation, desertification and the scarcity of fresh water, gained new urgency. A series of international negotiations started in order to find new protocols, convention and institutions to regulate global problems.

Heads of state at the 1992 Rio Summit emphasized that the reorientation of education and the enhancement of public information and awareness, as well as training are indispensable means of achieving sustainable development. Thus, it was unanimously agreed that the concept of environmental education which was formulated in the 1970’s, was not broad enough to encompass the concept of sustainable development. As a result, they suggested the reorientation of the existing education to address the issues of sustainability in Chapter 36 of Agenda 21 (UN, 1992).

The United Nations Commission on Sustainable Development (UNCSD) was entrusted with the responsibility of monitoring Agenda 21. UNESCO was designated by the UNCSD as the taskmaster for Chapter 36 of Agenda 21. The UNESCO work plan has identified the following issues as critical for its implementation by the world community\(^\text{11}\). They are:

- Rapid population growth
- Persistent, wide spread poverty
- The growing environmental pressures resulting from industrial growth and the use of new, more intensive forms of agriculture
- The continuing denial of democracy, human rights violations, ethnic and religious conflicts and violence and gender inequity and
- The very notion of development itself.

\(^\text{11}\) UNESCO and Government of Greece (1997), Education for a Sustainable Future
The following excerpt from the UNESCO sponsored Thessalonki Conference should help clarify how the concept of environmental education has evolved to education for sustainability in addressing global issues as spelled out in Agenda-21. The excerpt reads, “environmental education, as developed within the framework of the Tbilisi recommendations and as it has evolved since then, addressing the entire range of global issues included in Agenda-21 and the major UN Conferences, has also been dealt with as education for sustainability. This allows that it also be referred to as education for environment and sustainability……It is, therefore, not only necessary to deal with the problems, but even more essential to get our thinking right: to see interrelations among (these problems) and recognize the fundamental need to develop a new perspective rooted in the values of sustainability. It is this need which makes education the key to creating a sustainable future\textsuperscript{12}.

The IUCN Commission on Education and Communication recognizes ESD as a stage in the evolution of EE and claims that ESD has a strong link with the adjectival education\textsuperscript{13}. Fig. 4 shows how the focal point of EE is shifting towards ESD. The original meaning of EE comprised of changes in behaviors, understanding, knowledge, awareness and skills. Overtime, it gradually moved to include other aspects shown in the center. Through this, EE reaches the stage of ESD, where equity, quality of life, human rights and environmental quality are achieved. In other words, it shows ESD as the successor of EE.

\textsuperscript{12} UNESCO and Government of Greece (1997), Education for a Sustainable Future

\textsuperscript{13} (Hesselink et al. (2000), ESDebate, International Debate on Education for Sustainable Development
4. Education for Sustainable Development

“Education for sustainable development is an investment in our future and each respective country should ensure that appropriate resources are made available for its development”\textsuperscript{15}.

Education is an essential tool for achieving sustainability. People around the world recognize that current economic development trends are not sustainable and that public awareness, education and training are the keys to moving society towards sustainability.

“Education apart from being a human right is a prerequisite for achieving sustainable development and an essential tool for good governance”\textsuperscript{16}.

From the time sustainable development was first endorsed at the UN General Assembly in 1987, the parallel concept of education to support sustainable development has also been

\textsuperscript{14} Hesselink et al. (2000), ES Debate, International Debate on Education for Sustainable Development
\textsuperscript{15} World Summit on Sustainable Development: Plan of Implementation (2002)
\textsuperscript{16} Statement by the Ministers of the Environment from the UNECE Region on Education for Sustainable Development (2000)
explored. From 1987 to 1992, the concept of sustainable development matured as committees discussed, negotiated, and wrote the 40 chapters of Agenda 21. Initial thoughts concerning ESD were captured in Chapter 36 of Agenda 21, “Promoting Education, Public Awareness and Training”.

ESD carries with it the inherent idea of implementing programs that are locally relevant and culturally appropriate. All sustainable development programs including ESD must take into consideration the local environmental, economic and societal conditions. As a result, ESD will take many forms around the world. ESD was first described by Chapter 36 of Agenda 21. This chapter identifies four major thrusts to begin the work of ESD: (1) improving basic education (2) reorient existing education to address sustainable development (3) develop public understanding and, awareness and (4) training.

“Education for sustainable development enables people to develop the knowledge, values and skills to participate in decisions about the way we do things individually and collectively, both locally and globally, that will improve the quality of life now without damaging the planet for the future.”

It is important to realize that ESD is an evolving concept that has grown and developed in the years since the Earth Summit in Rio de Janeiro in 1992. A series of major UN conferences helped to further develop the concept of sustainable development. The conferences, which dealt with core aspects of sustainability, included the World Conference on Human Rights (Vienna, 1993), the International Conference on Population and Development (Cairo, 1994),

the world summit for Social Development (Copenhagen, 1995), the Fourth World Conference on Women (Beijing, 1995) and the Second World Conference on Human Settlements (Istanbul, 1996). Each major UN Conference also added to the conceptual framework of ESD. Each conference:

- Stressed the need for social and human development along with economic development and environmental concern
- Called for the advancement and empowerment of women
- Demanded basic social services for all
- Recognized the critical importance of sustainable livelihoods
- Cited the necessity of broad enabling environments for social and economic development
- Sought to sustain the environment and natural resources on which all people depend
- Underlined the importance of human rights and identified the role of education as critical to achieving sustainability goals.

All of these major UN conferences recognized the importance of education and advanced the evolution of ESD from an international perspective.

**4.1 UN Decade of Education for Sustainable Development**

Despite recognition of the critical role that education for sustainable development must play in achieving sustainable development, the full potential of ESD has not been realized even ten years after Rio. It is time to draw increased attention to this issue to mobilize and magnify the impact of the many actions that have been undertaken. It is time to heat up society – to get a critical mass active and on board.

Rio called for all countries to develop and implement an ESD strategy by 2002. To date, only a handful of nations have drafted strategic frameworks for advancing this process at the
national level. As a matter of priority, the UN Decade of Education for Sustainable Development should promote the development and implementation of national ESD strategies – or at least shared action plans- which provide strategic direction and support the efforts of all engaged in ESD. Countries should address the issues raised in the Commission on Sustainable Development Programme.

ESD provides an umbrella to place all the demands of the various Rio Conventions in a synergistic way. The Conventions call for knowledge sharing between countries as does the Commission on Sustainable Development work programme on ESD. Without engaging our societies, the progress to sustainable development will to a halt. It is time to engage more than a small circle in this issue under the umbrella of the Decade.

**4.2 The United Nations General Assembly Resolution**

The World summit on sustainable development (WSSD), held in Johannesburg, between the, 26th of August and the 4th of September 2002, recommended to the United Nations General Assembly that “it consider adopting a Decade of Education for Sustainable Development starting in 2005” (para.117d, Plan of Implementation). In December 2002, resolution 57/254 on the United Nations Decade of Education for Sustainable Development beginning January 1, 2005, was adopted, by consensus. The resolution had been introduced by Japan and co-sponsored by 46 counties.

The UN General Assembly Resolution designated UNESCO as the lead agency for the promotion of the Decade of Education for Sustainable Development and requested it to

---

develop a draft international implementation scheme. The DESD has been re-acclaimed at the 166th session of the UNESCO Executive Board in April 2003.

### 4.3 Goal of the DESD

The DESD aims to promote education as a basis for a more sustainable society through the successful integration of sustainable development into education systems at all levels. The decade will also strengthen international cooperation toward the development and sharing of innovative ESD programs, practices, and policies. Specific objectives and targets for many stakeholders will be developed in the implementation scheme.

### 4.4 Regional Centers of Excellence on Education for Sustainable Development

ESD is not a topic that can be taught in a few weeks or at a certain age, but rather, should be given attention in all sectors and at all levels of education in relation to relevant, existing subjects in an integrated manner. In this way ESD gives orientation and meaning to education for all (EfA). EfA and ESD are two sides of the same coin.

Education for sustainable development concerns all kinds of educational structures and learning situations. From the outset, therefore, the orientation programmes, groupings and networks through whom ESD will be further promoted and implemented. Particular attention must be paid to connecting with both national governments due to their central coordinating role and resources and with civil society networks, because their grassroots connections can enable DESD messages to fan out and down to local levels. To facilitate these processes it will be useful to spell out the why and how of building partnerships, and to model these processes at international level in preparation for the decade. These partnership processes are

---

19 Education for Sustainable Team (2004), UNU-IAS
designed to build participation, ownership and commitment to catalyze momentum for the DESD.\textsuperscript{20}

In spite of multiple efforts to strengthen ESD, many challenges remain. In particular, there is a need

\begin{itemize}
  \item to integrate adequately sustainability science and other SD components into educational curricula;
  \item to strengthen communication, coordination and collaboration among different stakeholders who have been conducting their activities on education for sustainable development (ESD) separately without good communication with each other; and
  \item to mitigate gaps on accessibility to latest information and knowledge in different parts of the world.
\end{itemize}

In order to reach these objectives, there is a necessity to create an enabling environment for strengthened collaboration among various partners working for ESD at the regional and local levels. Regional Centers of excellence on education for sustainable development (RCEs) would serve as the major engines for the exchange of knowledge and information and collaboration towards ESD (Annex-1). They would also facilitate vertical, horizontal and lateral integration of knowledge and information as well as serve as links between sectors that could jointly contribute to the promotion of ESD.

Creation of the RCEs would fulfill two needs: a) it would recognize and lend legitimacy to those actors that already doing RCE-type activities and b) it would provide models for those who are looking to start RCE activities.

\textsuperscript{20} See UNESCO (2003) Frame Work for a draft International Implementation Scheme, for details
Innovation, experimentation and enhancements in sustainable development practices will be encouraged through the development of Regional Centres of Excellence (Annex-1). To accelerate the pace towards sustainable development the promotion and enhancement of RCEs in both developed and developing countries becomes a priority. In partnership with leading institutions and individuals in local communities, combined with government involvement and academic expertise, collaborative initiatives may formulate training programs that increase community participation, problem solving and provide short and long term benefits to environmental conservation and sustainable development.\textsuperscript{21}

5. State of Environment and EE in Asian Regions

5.1 State of Environment

The world’s environmental condition is deteriorating at an alarming rate due to changes in human activities triggered by inappropriate economic activities and rapidly changing demographic and socio-economic patterns. Consequently, the world is beset with a range of problems such as global climate change, degradation of ecosystem, ozone depletion, rapid population growth, transboundary pollution (ocean, water and air), increasing rates of urbanization, high levels of solid, toxic and industrial waste and noise pollution, acid rain depositions, depletion of natural resources, desertification, loss of biodiversity and natural habitats, inadequate shelter, health care and water supply, and diminishing wetland and coastal resources. The deterioration of the natural environment is linked inextricably with patterns of increasing poverty and declining opportunities for improving human health, living standards, gender equality and human rights.

\textsuperscript{21} See UNESCO (2003) Frame Work for a draft International Implementation Scheme, for details
The above mentioned problems are also serious in Asian region. The region have some other problems as well such as i) domestic and other forms of pollution (mostly caused by dust, transportation and smoke) ii) water shortage and contamination iii) shrinking forest iv) problems of sanitation v) disposal problems of poisonous materials (including nuclear waste) vi) light pollution vii) coastal zone (mangrove, sea grass and coral reef) viii) marine pollution and ix) loss of soil and soil fertility. With this brief introduction, the selected Asian countries, Japan, Philippine, Thailand, and Bangladesh present environmental situation has going to be discussed in this section.

5.1.1 Japan

Population and economic activities are extremely concentrated in dense metropolitan areas and along coastal plains in Japan, while two-thirds of the archipelago is mountainous and covered with forests. The Japanese economy is very dependent on imports of natural resources, such as energy, food and other raw materials. The most important pressure on Japans environment today originate from transport, agriculture, industry and particularly, the growth of energy demand and private fuel consumption. Priority environmental issues include urban air pollution (NOx, suspended particulate matter, toxics), waste management, water eutrophication, nature conservation, climate change, chemical management and international co-operation for environmental conservation.

I. Air Pollution

Air pollution caused by sulfur dioxide decreased dramatically because of regulations on emissions from stationary sources and on sulfur content of fossil fuels. However, air

---

23 OECD (2002), Environmental Performance Reviews
pollution caused by nitrogen dioxide has not declined due to the continued growth in automobile use.

II. Water Pollution

Remarkable improvements have been made over recent years in water quality in Japan, owing significant reeducation of pollution by heavy metals, which was a result of regulation on industrial wastewater. On the other hand, environmental quality standards for organic pollution are still not being met at about 30% of Japan’s total water areas. In particular, there has been little improvement in urban rivers and enclosed water areas such as inland seas, inlets, lakes and reservoirs.²⁴

III. Waste

Japan is in a very challenging situation concerning waste management. Domestic waste (chiefly household) generated in Japan in fiscal 1999 totaled 51.4 million tons, an average of 1,114 grams (approximately 2.46 pounds) per person every day. There is a growing shortage of landfill sites because the amount of waste generated is increasing. Estimates show that landfill sites in Japan will last only another 12.3 years (from fiscal year 1999) if the current domestic waste generated patterns continue.²⁵ The shortage of landfill sites has led to the reliance of incineration as the main way to eliminate waste (e.g. 78% of municipal waste by weight). However public concern over dioxin emissions makes it increasingly difficult to build incineration facilities.

IV. Nature and Biodiversity

The percentage of natural areas in Japan has been declining. For example, natural and secondary forests are declining while less natural woodland, such as afforested areas, are increasing. In addition, the spread of urbanization has contributed to the overall decline in natural areas and greenery. Many animal and plant species are threatened by extinction (over 20% of mammal, amphibian, fish, reptile and vascular plant species), with little improvements in the 1990s. Exotic species have affected some ecosystems. The national biodiversity strategy lacks quantified targets and does not adequately address the management of biodiversity outside protected areas (e.g. marine, coastal areas).

5.1.2 Thailand

In addition to abruptly halting Thailand’s decade-long economic boom, the 1997 financial crisis that swept across Asia focused attention on the negative environmental effects of Thailand’s rapid industrialization. While Thailand, as one of the “East Asian tigers”, was lauded for its strong economic growth during the expansion years, the country also suffered from increased levels of industrial wastewater, a dramatic rise in domestic sewage and hazardous wastes, and severe degradation of its water and coastal resources. Increased levels of air and water pollution and the loss of natural habitats—primarily due to deforestation—were some of the most visible negative environmental consequences of Thailand’s unrestrained growth.

I. Air Pollution

Thailand’s most significant environmental threat is that of urban air pollution and the capital city of Bangkok stands out as the worst among urban areas in the country. In 1992, the

27 OECD (2002), Environmental Performance Reviews
United Nations Environment Program (UNEP) reported that the Thai capital was one of the most air-polluted cities in the world due to the city’s notorious traffic problems. Approximately one million Bangkok residents are thought to suffer from allergies and respiratory problems due to air pollution. In 2001, air borne particulate matter was estimated to have caused 3,300 premature deaths and to have led to almost 17,000 hospitals admissions, at a total health care cost of up to $6.3 billion.29

**II. Marine Pollution**

Marine pollution is considered a severe threat to the health of Thailand’s people as well as its economy. Agriculture run-off, coastal aquaculture, industrial effluents and domestic sewage are responsible for the pollution of coastal, surface and groundwater in Thailand. Water pollution is most severe in the Bangkok Metropolitan Region (BMR) due to high concentration of industrial activity; however, areas all over the country have been affected by current water use trends.

As a result of rapid coastal development, it has been estimated that more than half of all mangrove forest areas in Thailand have been depleted. Although agriculture is considered to be the primary factor behind this, expansion of marine-based activities such as offshore oil and gas exploration in the Gulf of Thailand is expected to increase the risk of marine pollution in Thailand.30

The attraction of substantial income and foreign currency earnings has brought prawn farming to Thailand, mostly along the southern coastal region, but extensive cutting of mangrove forests to make ponds has induced coastal erosion and widened flood damage.

Further, releases of salt-and chemical-laden pond wastewater have environmental impacts including serious damage to nearby rice paddies and orchards, and worsening of sea water quality\textsuperscript{31}. In 1991 Thailand’s government therefore imposed controls on prawn farming in mangrove forests and began to enforce them more vigorously.

However, prawn farmers converted rice paddies and orchards in the brackish water and freshwater areas of central Thailand, the country’s primary grain-producing region into prawn farms and according to estimates, 160 rice paddies and orchards have been converted to prawn farming. Overall, therefore, prawn farming is expanding rapidly despite vigorous restrictions on coastal operations\textsuperscript{32}.

\textbf{III. Deforestation}

Through the middle of the twentieth century, Thailand was a heavily forested country. However, deforestation has progressed in recent years at a rate faster than any other country in the region except Nepal. By official estimates, forest cover decreased at an average of 400,000 ha per year (Ministry of Science, Technology and Environment [MOSTE] 1997), from 53.31% forest in 1961 to 25% in 1998\textsuperscript{33}. These figures fail to include the degradation of remaining forest areas- where the most valuable timber, wildlife and other forest products may have been exploited.

In 1989, following a major landslide and flooding disaster in the south of Thailand, believed to have been exacerbated by the denudation of forests, a complete logging was ban was imposed by the Cabinet. The ban has helped slow the rate of forest destruction, but has not

\textsuperscript{31} \textit{World Resource Institute, World Resources (1988-1989)}
\textsuperscript{32} \textit{Japan Environment Council (2003), The State of the Environment in Asia 2002/2003}
\textsuperscript{33} \textit{Royal Thai Government, (1997), Ministry of Science, Technology and Environment, Office of Environmental Policy and Planning}
stopped it. Illegal logging continues, along with encroachment by farmers. Forest fires, usually started to clear areas for cultivation, are also a problem; in 1994, they affect some 784,000 ha, equivalent to 5.6% of the total forest area (NSO 1998)\textsuperscript{34}.

\textbf{IV. Loss of Biodiversity}

Thailand straddles the land gate linking the Asian continent and the Indo-Malayan biogeographical regions, and itself contains 15 distinctive terrestrial biomes as well as a diversity of freshwater and marine habitats, so it is richly endowed with flora and fauna species. Seventeen different ecosystems, including mountain forests, limestone forests, peat swamps, teak, bamboo, and mangrove forests are found in Thailand. These habitats contain an estimated 10,000 -13,000 vascular plants and 86,000 animal species of which 5,000 are vertebrates.

Given the tremendous changes in use of land, coastal, and water resources- including the loss of two-thirds of forest cover in just 40 years-significant loss of species diversity and quantity is inevitable. A number of endemic species-species that occur nowhere else in the world-have already become extinct, including three species of shrimp, one fish, one reptile, eight birds and two mammals. Some 100 species of plants are considered endangered, 600 rare and 300 vulnerable. Endangered species of animals include 20 freshwater and 9 marine types of fish, 2 amphibians, 10 reptiles, 39 birds and 39 mammals (MOSTE 1992)\textsuperscript{35}.

\textbf{V. Water Quality}

Water pollution from domestic sewerage is a problem throughout the country, especially acute in central Thailand where population concentrations are highest. In addition to anxiety

\textsuperscript{34} National Statistics Office (1998), Office of the Prime Minister; Environmental Statistics of Thailand
\textsuperscript{35} Royal Thai Government, (1992), Ministry of Science, Technology and Environment, Thailand Country Study on Biodiversity, Bangkok
about high levels of coliform bacteria in water and biological oxygen demand, there is increasing concern about the rise in ammonium nitrates in surface and groundwater, most certainly coming from the runoff of agricultural fertilizers. Industrial pollution is most severe in the Bangkok Metropolitan Region (BMR), especially in the Chao Pharyya and Lower Thachin Rivers.

VI. Mining

Owing to its mineral resources, the mountainous area near the village of Ron Phibun in southern Thailand has been the site of flourishing mining operation for over a century and the mining and beneficiation of tin ore have been especially active. Full-blown tin mining began at this village in 1970. Ore produced here contained 53.6 ppm arsenic as an impurity, which was discarded in the tin smelting process, and polluted the ground water via water puddles in mined places, rivers and soil. In 1987 arsenic poisoning victims were discovered and a study found about 500 ppm arsenic in soil, with maximum of 5,209 ppm, while water puddles in mind places had 1.85 ppm and well water had a maximum concentration of 4.47 ppm. Arsenic was also detected in crops and domestic animals. The contaminated area had a population of 26,685 people, of whom 1,500 were found to suffer arsenic poisoning in 1995.

5.1.3 Philippines

The Philippines is blessed with a luxuriant natural environment and abundant natural resources, but the environment is steadily worsening as the country develops and industrializes. The industrialized economic policies indeed brought the Philippine economy out of its prolonged lethargy; they also created a variety of serious environmental problems throughout the country. With priority given to economic growth, and the pursuit of profit,

one locale after another has found its environment damaged by pollution and reckless development or the human rights of its populace violated by development projects. Headlong industrialization has rapidly pushed the nation’s once agrarian society towards urbanization, and is reducing the livability of its cities. In addition, the broad wealth disparities of the Philippine society means that the poor and weak segments of society always withstand the worst of these effects.  

I. Severe Deforestation

In the early 20th century, nearly 70% of The Philippine’s was forested. It is said that at least 54% of the land must be forested if the country’s ecosystem is to function normally, but the accelerated deforestation that started in the 1950s depleted the forests until in the 1990s, after which less than 20% of the country was forested.  

The impacts of this deforestation are apparent everywhere. Soil erosion is serious in 22 of the nation’s 77 provinces. The water retention capacity of forests has fallen dramatically and brings about flooding in combination with sediment buildup along the downstream areas of rivers. Natural disasters causing heavy damage are no longer unusual.

II. Air Pollution

Manila’s air pollution is among the worst in the world. An Asian Development Bank report’s states that the Manila area emits 116,000 tons of airborne particulates, 39,000 tons of sulfur and 140 tons of lead into the atmosphere annually. As of 1990 transportation accounted for

---

38 Japan Environment Council (2003), The State of the Environment in Asia 2002/2003
82.9% of nitrogen oxides and 99.2% of carbon dioxide, while factory emissions contribute 88.3% of sulfur oxides. Motor vehicles are the biggest source\textsuperscript{40}.

\textit{III. Water Pollution}

Water pollution is worsening with economic growth and the advance of industrialization. Despite the restrictions of the Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990, there is little effective control of such substances. One indicator of this is that 50 of the Philippines 421 rivers are considered ecologically dead, and the main reason is industrial effluent. The approximately 150 factories along Manila’s Pasig River dump 416,000 liters of untreated effluent into the river annually. The Malabon Tullahan River is a dumping ground for solid and liquid wastes from at least 209 factories on its banks. In 1996 about 30 tons of dead fish were found floating in Manila Bay and the cause was said to be the dumping of untreated cyanide wastes. The Philippines largest lake a brackish body of water called Laguna de Bay is polluted by wastewater from factories on its shore, but its ecosystem has also changed greatly because the mouth of the river has been deemed by a project to desalinate the water for drinking and industrial use, and one consequence is a considerably diminished fish catch\textsuperscript{41}.

In areas with high concentrations of factories, there are not few cases in which pollution is disregarded with the sources left unidentified. In recent years not only industrial wastes, but also household wastes have become a major cause of water pollution as urbanization advances and the consumer culture permeates Philippine society. There are hardly any waste management facilities, so the approximately 6,379 tons of municipal wastes generated and collected daily in the Manila area are just taken and left at dumpsites at Pinagbahatan,\textsuperscript{40} Philippine Daily Inquirer, June 24, 1999. \textsuperscript{41} Japan Environment Council (2003), The State of the Environment in Asia 2002/2003
Katamon, Payatas, and other places. Slums appear around dumpsites because the poor gather there in search of things that can be reused, such as cans, bottles, scarp iron, and plastic. It is not unusual for people living near dumpsites to become ill because of direct contact with toxic industrial wastes in the trash they extract or by drinking groundwater contaminated by those wastes\textsuperscript{42}.

\textit{IV. Mining}

The Philippines is endowed with plentiful mineral resources, and its gold and copper reserves were said to be among the 10 largest worldwide. From an environmental perspective, many mines are very poorly managed. In the Philippines, rivers are contaminated by mercury and cyanide runoff, and there are reports of disasters such as the breach of a tailings impoundment. In 1985 a large volume of tailings from a gold mine in Baguio (Benguet Province) spilled into river and accumulated in irrigation facilities and rice paddies in three downstream provinces. Especially the large tailings spill into Laylay Bay, which was caused in 1996 by the Tapian copper mine of Marinduque Mining, became a turning point for fundamentally reassessing mine management. This copper mine had already dumped 140 million tons of tailings into Calancan Bay starting in 1975, splitting the bay in half with a 5-km-long “sandbar” of tailings extending from the shore into the bay. In April 1999 about 70 tons of tailings spilled by the Manila Mining Company in the Surigao del Norte Province which buried 17 homes and 51 ha of rice paddies downstream. Many dead fish were found in the river, and cyanide was detected in its water\textsuperscript{43}.

\textsuperscript{42} Tielens, Clarie and Howie G. Severino (1997), Toxic Cities p161 in Cecile C. A. Galgos, ed., Saving the Earth- The Philippine Experience. Philippine Center for Investigation Journalism.
\textsuperscript{43} Japan Environment Council (2003), The State of the Environment in Asia 2002/2003
5.1.4 Bangladesh

Bangladesh is faced with rampant poverty, high population density and an increasing population, recurring natural disasters and a dwindling natural resource base. The vast majority of the population is amongst the poorest in the world and lives almost exclusively on the natural resource base. However, this resource base is under serious threat and environmental planning is necessary to signal any hope for survival with dignity and sustainability.

I. Population Growth

Bangladesh’s population is about 138.5 million and being confined within 140,000 sq.km, makes its population density the highest in the world. Population growth is identified as perhaps the most serious problem inhibiting a sustainable use of resources. Increase in development or productivity are eroded by population growth. A very low land man /ratio intensifies the competition of the very limited land resources for different uses.

II. Natural Hazards

Recurrent floods cover large areas, often up to 30% of the country. They affect and damage crops, seeds, trees, livestock, housing and infrastructure. Floods can enhance erosion by the rivers with consequent loss of valuable arable land. Areas hit by cyclones are not very large, but the devastation can be enormous. Such as the cyclone of April 1991, which killed an estimated 130,000 people. The north–west part of the country is vulnerable to drought and north-east to flash floods.

---

44 Rahman Atiq and Saleemul Hoq (1994), Environment and Development Linkages in Bangladesh,
III. Agricultural Land

Data on the chemical composition of soils suggest a state of impoverishment. The low organic matter content, higher cropping intensity, improper cropping sequences and faulty management practices cause depleting of soil fertility.

There is an emphasis on increasing acreage under “High Yielding Varieties (HYV) of rice, in many cases, displacing traditionally adapted and resistant varieties. The bias towards HYV rice increases agro-chemical use including both fertilizers and pesticides.

IV. Water Pollution

Accesses to clean water is problematic for many households and because of contaminated drinking water, gastro-enteritis and other water-borne diseases are common. The effect of these diseases, together with chronic malnutrition and inadequate health services is a high infant mortality rate.

Major industrial sources of water pollution are the: i) Non-ferrous metal ii) Industrial chemical production iii) Tanneries iv) Refineries and v) Pharmaceuticals. Most of the old industries are not equipped with treatment facilities, so when the companies dump their untreated effluents pollutes lakes, lagoons, rivers and groundwater.

There is also pollution of feces due to lack of proper sanitation facilities in spite of increasing population both in rural and urban areas. This results in high levels of nitrate in surface water, eutrophication and serious implication of water-borne diseases. Fertilizers and agrochemicals including pesticides are suggested to cause pollution. According to National Irrigation Development Project, average annual consumption of fertilizers is estimated to be 100kg/ha.
There is an increase in the use of water for irrigation, often from ground water sources. There are indications of the water table lowering, due to indiscriminate use of ground water. Arsenic contamination of ground water is a serious problem, especially for tube wells. Arsenic content exceeds 0.05 mg/L as the national standard. It is estimated that more than 20 million people drink arsenic contaminated water. Other groundwater pollution problems include: i) salinity in coastal areas, the Southeast and the Southwest region ii) Iron in central part of the country iii) Manganese Boron in western, central and northern region iv) Phosphorus, Phosphate, and Nitrate in all parts of the country, especially in the coastal area\textsuperscript{45}.

\textbf{V. Desertification}

Total forest area covers 26,000 sq km, which is 17.6\% of the lands territory. The forest is composed of natural forest, plantations, juhmed/encroached forestland, park/sanctuaries, unclassified state forest, agro forest, tea and rubber gardens, and water bodies. However, the area under good natural forest, good bamboo forest and plantations covers 8,400 sq km, only 6\% of the territory\textsuperscript{46}.

It is estimated that 60\% of the forest area has been lost. Major causes of deforestation is logging for the purpose of fuel woods, commercial logging, agricultural and housing development and slash and burn cultivation. Even desertification occurs in northern region because of drought, excessive exploitation of water resources and salinization\textsuperscript{47}.

\textbf{VI. Solid Waste}

In Dhaka 3,000 tons of waste is generated everyday. Waste is disposed at 4,500 collection pints, among which 1,950 are concrete made and 2,450 are street bins. Nearly 5,000

\textsuperscript{45} Altaf Ali (1999), Country Profile on Environment Bangladesh
\textsuperscript{46} Altaf Ali (1999), Country Profile on Environment Bangladesh
\textsuperscript{47} Jica (1997), Country Profile on Environment
sweepers are engaged in the collection services by handcarts. 184 trucks and 2,080 handcarts are used to transport these waste to landfill sites or open dumps\textsuperscript{48}.

However, solid waste management systems are inadequate. Uncollected waste is burned in improper way and illegally dumped into rivers and canals. Industrial and medical waste is not properly treated and is disposed with other general waste.

\section*{VII. Wastewater}

Sewerage systems are only partially installed only in Dhaka. In other regions, untreated wastewater is discharged directly into rivers. Rainwater flows into sewerage system during times of heavy rain and wastewater flows up because the capacities of sewerage systems are limited. Toilets are built on the water and feces is directly dropped into the river and other open water bodies.

\subsection*{5.2 Status of Environmental Education (EE)}

\subsection*{5.2.1 Progress in Environmental Legislation}

Around the time of the 1992 Earth Summit, Asian countries achieved great strides in the reform of their environmental laws and the formation of case law. Behind this progress were factors including i) worsening domestic environmental conditions, ii) a rising consciousness about global environmental problems and iii) increasing awareness about the importance of environmental risk management.

More countries, including The Philippines and Thailand are writing environmental rights explicitly into their constitutions. In Bangladesh, Pakistan, and some other countries

\textsuperscript{48} Altaf Ali (1999), Country Profile on Environment Bangladesh
environmental rights are recognized as being collateral to the right to existence under court precedents. Many countries also enacted basic laws on the environment, like Bangladesh, Nepal. Generally Asian countries have ministry-level government agencies for administrative action on the environment, and recently Japan’s Environment Agency was promoted to the Ministry of Environment. The approach taken by many countries to preserve their environment is to establish emission standards and require compliance with them or to require permits or authorization for development projects. Policymakers are becoming aware of the important roles that citizens and NGOs play. Among business there is heightening interest in voluntary initiatives such as the ISO 14000 series, while eco-labeling schemes are gaining ground in Asian countries. Recently there is heightened interest in environmental risk management and the control of hazardous chemicals.

Although progress has been made in environmental legislation, the lack of effective enforcement is still a problem shared by all Asian countries. Some of the reasons are i) even though a new environmental law might be passed, it will not be accompanied by an enforcement order, or the passage of the order is considerably delayed ii) the requirements of laws are not clear iii) there are inconsistencies between old and existing laws and new laws and iv) awareness is low among administrative officials responsible for executing the laws.

5.2.2 Progress in EE

It is apparent that people within the Asian region are conscious of and responsive to, environmental problems and their emerging consequences. They are very much concerned with the environmental degradation. The notion that we must “protect the environment and protect humanity” is a growing concern in the region. A high level of awareness is

---

demonstrated by the i) incorporation of environmental concerns into curricula and educational programs ii) initiation of eco-business activities iii) involvement of students in extra-curricula activities iv) active involvement of non-governmental organizations (NGO) in raising awareness and v) determination and commitment of government. At the national level, governments have shown their interest by emphasizing the urgency of incorporating environmental concerns into formal and non-formal education systems.\textsuperscript{50}

The definition of EE as “transfer of environmental knowledge” implies that the process involves many different actors and audiences. Typical actors include on the one hand, schoolteachers, teachers at the universities or other higher educational institutions, government officials, NGOs, and journalists. On the other hand, schoolchildren, students, grassroots communities, farmers, and the general public could be considered as the most important audiences. However, in practice such a clear-cut distinction between actors and audiences always might not be possible. All groups described here could fit into both categories. Figure-7, presents an overview of the multiple links between the parties involved in EE. The role played by various actors/Audiences in Asian countries is going to be discussed here and they are grouped into the following categories.

- Government bodies and civil servants
- Civil society
- Formal Education system
- NGOs
- Journalists/Media
- Grassroots communities

\textsuperscript{50} IGES (2001) Environmental Education in the Asia and Pacific Region, status, Issues and Practices.
I. Government Bodies and Civil Servants

In Asian countries government bodies and civil servants are increasingly involved as actors in the field of EE. Firstly the governments and ministries of education are responsible for national curricula development. During last two decades, many Asian countries have carried out educational reforms leading to the inclusion of EE elements in the formal school curricula. Some countries like Japan, Bangladesh, The Philippines, and Thailand have taken

---

51 Vinke Jacoline (1992), Actors and Approaches in Environmental Education in Developing Countries, Environmental Education ; an approach to sustainable development
the initiatives to make further efforts to reach out to the general public by organizing environmental campaigns, providing information and organizing EE type activities on various occasions such as Earth Day and World Environment Day. The Department operates through the press and produces material to support the campaigns, including brochures and posters for wide audiences.

At the same time policy makers, government bodies, civil servants and political parties and the business people receive EE. The press media often plays a central role in bringing environmental issues to the attention of the authorities. Several NGOs are also working with aims to sensitize the authorities about environmental matters, and to also increase their knowledge in this field. Even the NGOs are producing reports on the state of the environment which they present to policy planners.

**II. Formal Education System**

The formal education system provides a good framework for reaching a large segment of the population, enabling future generations to be conscious of the importance of environmental conservation, in addition to motivating them to take action in this respect. Young children tend to be curious about the world around them and are usually very receptive to new ideas. In many Asian countries primary schools seem to be particularly well-suited to expose large numbers of children to the subject of environmental conservation. There are two main reasons for this i) curricula at the primary school level is generally rather flexible, and therefore it can be relatively easy to modify it to include environmental elements ii) enrollment ratios are much higher at primary schools than at secondary schools.
A proper preparation of schoolteachers is a prerequisite for the successful introduction of EE in school. This is often poses particular problems in many Asian countries like Bangladesh, Thailand, and The Philippines. In many countries, pre-service teacher training is still limited to the conventional subject areas and therefore tends to be rather rigid. Changes in teacher training programs usually lag behind modifications in school curricula. While in a considerable number of countries there is no formal teacher training on environmental issues at all. There are some countries where some teacher training institutions have started to incorporate conservation elements into their programs.

In-service training for teachers is probably as important as pre-service teacher training. It can –at least in part-fill the gaps where teachers have not received any pre-service training on environmental issues. It is furthermore necessary to keep all teachers continuously well-informed on these issues, and to motivate them to be important barrier to the successful implementation of EE in schools. This is due to problems such as teachers’ unfamiliarity with the subject, shortage of suitable teaching materials, unavailability of reference materials and a lack of time to properly prepare their activities.

In some of the Asian countries like Japan, NGOs, government institutions and to a lesser extent universities, provide in-service training for teachers and supply material in order to overcome these problems. However, due to shortages of supporting material and material resources, efforts in this area have remained confined and limited. In some Asian countries, like Japan, Thailand, and The Philippines universities and other higher educational institutions offer courses related to environmental science and management. Although universities and other higher education institutions involved in EE are aimed at students at the tertiary education level, they also reach out to much wider audiences. For example, in
Japan several universities have taken a lead in raising environmental awareness, by addressing not only students, but also schoolteachers, schoolchildren and local community.

III. NGOs

Over the past decades, the number of NGOs working in the field of EE has been growing steadily in Asian regions and they have started to play a central role in the promotion of EE. Not only do existing NGOs increasingly include EE in their activities, there are also more and more new voluntary organizations that are either entirely devoted to EE or whose aims or programmes include environmental training, public awareness arising etc. NGOs involved in EE include ecological associations, religious charities, women’s group, youth clubs, and the pressure groups. Some NGOs focus their activities entirely on one particular target group, whereas others try to reach out to much wider audiences. They vary from relatively big organizations that operate on the national level, to very small local ecological groups operating at the grassroots level.

IV. The Mass Media

In Asian countries Journalists have an enormous potential for the dissemination of environmental information and for influencing public opinion. Operating through the print media, radio and television, they are in a position to reach virtually all type of audiences such as, government authority, teachers’ community, researchers, schoolchildren and students, and grassroots communities.

The quality of environmental reporting varies from country to country. In most of the Asian countries the media are very active in promoting EE in the region. Media groups are raising environmental awareness using both modern and local (traditional) media, and establishing
publications. The media in this region raise the environmental awareness of the mass people, advocate good examples of environmental activities, and inform the people about the negative consequences of human interventions. The media are also: i) creating a forum for complaints, opinion letters, lobbying and articles ii) providing investigating reports on the environment iii) contributing environmental messages and feature articles on the environment to television, newspaper and radio reports iv) training reporters on environmental journalism and v) carrying out regular features with first-hand reporting on environmental issues\textsuperscript{52}.

V. Local Communities

This last category consists of a wide variety of people whose daily activities are in one way or another related to the environment. They include; policy makers in business, industry, and mining city planners, landowners, rural farmers, fishermen, rural grassroots and urban communities. It is often assumed that there is a lack of knowledge about conservation issues at the grassroots level, and that there is a need for top-down EE in order to achieve sustainable development. But this kind of assumption is not always correct. On the other hand, there is often a lack of understanding of certain environmental issues at higher levels of society. There are many examples of actions that have been taken by government of developing countries that, partly due to ignorance of officials, have had seriously adverse environmental implications. At the same time, there is an environmental awareness at the grassroots level that consists of an understanding of the links between environmental issues and economic, social, cultural and political problems. Most traditional resource management systems are ecologically sustainable and even if rural communities do not necessarily

\textsuperscript{52} IGES (2001) Environmental Education in the Asia and Pacific Region, status, Issues and Practices
appreciate “nature” for its ecological value, they are well aware of its importance for their livelihood\textsuperscript{53}.

This argument however does not imply that there is no need at all for top-down EE. Such a need is especially felt when the sustainability of grassroots life support systems is jeopardized by pressures such as migration, desertification, forest destruction due to commercial logging, industrial pollution, and population growth, changing lifestyles or changing social structures. In such a situation top-down EE is necessary to assist local communities in finding ways to cope with associated problems and to restore or maintain the ecological balance.

The last target group for EE is the poor urban population. The environmental problems faced by this group differ from those faced by the rural inhabitants. Typical urban environmental problems include municipal waste, littering, noise, air pollution, garbage removal, poor sanitation and contaminated drinking water. The number of people in Asian cities faced with these problems is increasing rapidly.

\textbf{5.3 Some Community Based Initiatives of EE}

Local communities are closely intertwined with our day-to-day living. That is why it is relatively easy for us to observe the environmental load, its impact and the results that may be gained by taking actions. Therefore, the community is a place where we can get a comparatively good grasp of environmental issues and make voluntary efforts to conserve the environment. The next part is going to describe some of the community based EE initiatives in the studied countries.

\textsuperscript{53} Vinke Jacoline (1992), Actors and Approaches in Environmental Education in Developing Countries, Environmental Education : an approach to sustainable development
5.3.1 Philippine

I. Infata Farmers Field School

This was an integrated farming project that was supported by United Nations Development Programme. UNDP supported the project by providing scientist/technical men to assist in sharing scientific information in agriculture.

The duration of the course was a season (depending on the crop/topic), where participants were able to learn the process/technology from land preparation to harvesting. The farmers spent time regularly (usually few hours once in a week) at the demo farm for months to discuss, learn, and experiment things with his co-farmers and trainers.

Although integrated farming was no longer new to the farmers, it was re-introduced and discussed. One of the first subjects presented was the principle of biodiversity, that every living thing has its role in the life cycle. They were made to experiment and learn the process of intercropping rice with vegetables and ways to avoid using pesticides. The raising of livestock as much as they can was also a part of the program.

Simultaneously, during the course the farmers were advised to apply what they learned in their respective farms. This would help give the farmer confidence in trying new things and learn to take advantage of the regular session to discuss with the group the results and the problems encountered in the farm.

---

II. Bantay Dagat (Sea Patrol by Volunteers)

The program was initiated when illegal fishing and over exploitation of marine resources were so rampant in the area that it caused an alarming decrease in the community’s fish catch. The threat was that if fish catch continued to decrease, meeting the fish requirement of the community would even be more difficult.

The community decided to take immediate action to reverse the decline of the fish production. Since the government could not provide men to regularly patrol the sea, they decided to volunteer their services using their own facilities such as boats, lights and other necessary equipment. The purpose was to stop destructive fishing practices and reduce pressure in coastal waters.

The usual practice when violators were apprehended was to just issue a warning and subject the first-time offenders to a brief lecture on the importance of taking care of the coastal environment.

To achieve a positive and measurable impact in coastal resource management, the government recognized that the partnership between the fisherflok and communities should be enhanced. Various laws and guidelines were issued which has strengthened the strategy. Baranggay Fisheries and Aquatic Resources Management Council (BFARMC), whose function is to assist the enforcement of fishery laws, rules and regulations in municipal water, has at least eight representatives from the fisherfolks designated as regular members of the council. It was further strengthened by the Philippine Fisheries Code of 1998, where it specified that members of fisherfolks associations may be designated by the Department of
Agriculture as fish Wardens in the enforcement of fishery laws, rules and regulations, provided they have undergone training on law enforcement.

It was reported that, *Bantay Dagat* proved to be a very successful enforcement strategy that provide swift public action to stop destructive fishing practices and illegal commercial fishing in municipal waters. The strategy provides direct benefit and equity to the larger number of fishers and coastal stakeholders employing legal and sustainable methods, and also serves as a deterrent to those violating national and local laws.

*III. Community Education Program for Environmental Protection and Management Province of Camarines Sur*55

The aim of the project was awareness building on biodiversity conservation and other environmental issues of, concerns as well as counter measures through public information campaign and community mobilization. The project was implemented by Popular Institute for Rural –Urban Development in Bico, Inc.

A participatory approach was adopted in all the various stages of the project, such as networking with schools, local government units and other interest groups to forge collaborative efforts in the conduct of the training, symposia, and other activities.

The gaining of community trust and support of the project partners at the early stage of the project facilitated smooth implementation, meeting project timelines and spinning off activities. Local government units were drawn to take a lead in terms of local legislation for the protection and conservation of natural resources through the project. The formation of broad-based community organization made possible project continuity.

5.3.2 Thailand

I. Local Partnership for Community Land-use Planning

The project site was Nongkhai Municipal area Thailand. It is located in the North-east Region of Thailand on the southern banks of the Mekong River. In line with the spirit of Agenda 21, the principal goal of this project was to i) to create the conditions which facilitate the implementation of a community-based land use planning and management process capable of responding to changing needs. ii) Partnership promotion, through which various concerned local stakeholders – communities, municipal representatives and related national institutions are producing and adopting the plans. and iii) The integration of physical land-use planning into municipal development planning.

In the beginning of 1994, with the completion of the Friendship Bridge linking Nongkhai with Vientiane, development pressures increased with resultant uncontrolled development. Land speculation has been increasing and land value is extremely high. Nongkhai is to become a golden gateway to Indochina. Plans to construct luxurious hotels, resort, apartments and department-stores are to be realized soon. The general comprehensive land-use plan formulated by a central government agency was proving insufficient to effectively control central development. A detailed, specific land-use plan, formulated and controlled by a strong local group of communities was needed.

Nongkhai’s four communities – Chaiaporn, Meedhai, Sri Saket and Sri Muang – have undertaken an initiative to implement this bottom-up planning approach. Becoming familiar with local cultural, social structure and community problems was an important first step in

---

56 Paul Vorratnchaiphan (2003), GTZ Project Team Leader, Urban Environment Management Project
this bottom-up planning process. A “team spirit” and “community sense of belonging” have been forged among the project team as they tackle this problem.

The grassroots planning process formally began when each of the four communities nominated community leaders to work together with the project team. A series of preparatory meetings were held at respective community centers based in temples. The Department of Town and Country Planning team members assisted with the physical plan and the team of Local Government Development Affairs assisted the communities in formulating community development plans. After five weeks of collaboration, three alternative community land-use plans for two communities were sketched. These were integrated with community development plans which had been formulated based on recommendations for the community representatives. A two-day workshop, where plans were proposed to 14 other communities and concerned agencies, as recognized in one of the community’s temples. Recommendations and commitments for ongoing work on the part of participants were made.

In order to cope with the problems and objectives mentioned above, it was agreed by the main partners that community involvement in formulating a land-use plan, in addition to the controlling of the actual development at local level itself, would be the most important factor. It was also decided by participants in the process that the content and the objective of the Local Agenda 21 to promote collaboration among various partners at the local level would be a justified and acceptable basis for central government agencies to assist later.

There was a change of heart on the part of some executive directors in the Department of Town and Country Planning (DTCP). The city planning law providing for citizen participation in the formulation of Comprehensive and Specific Plans had always been
considered an unrealistic approach to planning in the Thai urban context. Community participation was considered a potential source of trouble and a hindrance to urban development. After participating in the demonstration project, both field officers and some executives of DTCP were convinced that citizen participation was a workable approach, dependent upon the trust and confidence in well-organized leadership of local communities. The actual participation of local communities and authorities at the beginning of the process of formulating land-use plans would seem to prevent a great deal of objections to the plans later in the process.

The various partners such as the Department of Local Administration (DOLA) and the municipal staff who participated in this initiative, have realized that the grass-roots participation and pressure was essential to the initiative in order to bring about decentralization of the planning system in Thailand. Such pressure is based on the willingness of high ranking government officials to welcome a new approach to planning a bottom-up approach. The sense of partnership, according to principles and strategies of the Local Agenda 21, is also considered an important component for a more sustainable response to urban problems. Every partner has a role to play complimentary to one another.

Il. Mangrove Protection and Rehabilitation Project\textsuperscript{57}

The “Thung Maha Mangrove Forest Protection Group” has collaborated with the Environmental Study Center of Chumphorn Province, and together with local leaders of nearby communities has been involved in the protection and rehabilitation of the Thung Maha Mangrove forest since 1997. The project aims were to raise local understandings and awareness in natural resources conservation through various activities and campaigns. It also

\textsuperscript{57} Sarunphong Articharte (2003), Learning from the Past for a Better Future
aims to strengthen local aggregation and roles of youth groups in schools and communities, as well as to provide collaboration in mangrove protection and rehabilitation.

The Thung Maha Mangrove was declared as one of the five reserved mangrove forests. It is the most replenished mangrove forest with a shoreline of 8km., making it the biggest aqua breeding place and the main source of income for the local fishery. The topography of the area is mountainous, covered by forest and many islands are found offshore. Therefore it is a promising land for tourists and has the potential to develop a nature study center. Its richness in nature has made local people aware of the importance in protecting its natural resources.

The Thung Maha Mangrove forest has recently faced a problem of deforestation. It has been converted to shrimp farms and in addition some permanent buildings have been constructed along shrimp farms. The forest destruction can be observed by a construction of dam to prevent a shrimp farm from seawater. A blockage of a drainage system has caused destruction to the mangrove forest and a major decline in fishery.

The project focuses on the understanding of local participation in natural resource conservation and management. A participatory approach would lead to a sustainable success of the project. Therefore knowledge about the values of mangrove forest to human beings is going to be provided to raise local awareness on participatory protection.
5.3.3 Bangladesh

I. Nature Awareness Program

The program was carried out by Bangladesh POUSH. The underlying philosophy of this program was that if the juveniles, teachers, parents and guardians are aware of the environment and its carrying capacity, then the path to environmentally sustainable development of Bangladesh can be pursued. With this philosophy in mind, POUSH carried out a nature awareness program to raise environmental awareness of children, teachers, parents, and guardians in non-formal environmental primary education schools.

Major activities include two training programs for teachers

- A week-long training course and on the job training on the rural environment focusing on the physical, biological and socio-cultural environment of their localities
- Educational materials were prepared and used specifically for this purpose
- Interactive forest visits were organized for students and teachers. These participants are given a project, such as planting fruit-bearing saplings in their homesteads and school compound.

The result of this program has been quite encouraging as shown in one evaluation study, which says “it has been found that students of POUSH are better environmentally aware compared to students of Government –run primary schools. Community as a whole has been made aware of nature and its conservation for their long-term benefits”.

The program has influenced poor students as well as their parents and teachers in changing their behaviors towards the conservation of nature and the sustainable utilization of natural

---

Sanowar Hossain and Shajahan Bhuiya (2002), Bangladesh Report, IGES
resources. Community people in the impact zone have been found to be more aware about nature and natural resources.

II. Comprehensive Village Development Program (CVDP)  

CVDP is an institutional approach to rural development. The principle of the project is one village one institution. The concept of CVDP was that one village would have a single institution to develop a package program for an integrated and total development.

Objectives of CVDP

The broad based objective of CVDP is to improve the socio-economic and environmental condition and quality of life of all groups of people in the village through a common village based organizational framework. The specific objectives of CVDP is

- To develop a one village one broad-based cooperative institution namely Comprehensive Village Development Cooperative Society (CVDCS) involving people of all classes and professionals with a view to actively engage them in socio-economic activities for poverty alleviation, natural resources management and some other welfare activities of the rural community
- To develop common village facilities and make available at the village level various social, economic and environmental services relating to literacy, education (formal and non-formal), family planning, health care, nutrition, income generation activities, and others
- To improve production and traditional knowledge and skill, education and social status of women through appropriate education and training
- To introduce a life long learning process, awareness building, skill development to eradicate illiteracy, ignorance and social stagnation
- To undertake community-based, natural resource management, primary health care, nutrition and population education activities for the improvement of the local environment and human resource development
- To use the village institution as the receiving point for all kinds of services and supplies from the line agencies

59 Mir Kashem and Masudul Hoq Chowdhury (2004),
To mobilize villager’s own capital through savings program for production, investment and creation of their collective resources

To develop leadership through expansion of the scope of villagers participation in planning, implementation and decision making

Implementation Strategies: Peoples Participation

CVDP take initiatives and action that is stimulated by people’s own thinking and deliberations and which they can effectively influence. It is a developmental approach which recognizes the need to involve all segments of the rural population (male, female, children) in the design and implementation of plan concerning their well-being.

Within the given institutional framework, the following strategies have been adopted to implement the program.

- The CVDCSs prepare a household Resource Book for each household in the village. It contains an inventory of household resources to serve as a guide to identify the gap between the available household resources and those required for the improvement of the social and economic condition of the household based on its needs.

- The societies then prepare a Comprehensive Village Resource Book which contains the database of the household resources and facilities. This data base is used as the basis for the formulation of a Comprehensive Village Development Plan by the CVDCSs.

- The above plan is prepared by the society on an annual basis known as the Comprehensive Village Annual Development Plan (CVADP). It is prepared in two parts, one for economic activities of the group members and the society and the other for the development of common village facilities and services. The former is known as the Economic Plan and the later is known as the Village Development Plan which includes social and environment development.

- Each group or individual members of the society prepare their own Economic Plan, which is consolidated at the society level by CVDCSs. The managing committee of the society also prepares a commercial, environmental and business activity plan for the society. The two plans after discussion and approval by the general meeting of the society are consolidated into the Society’s Annual Economic and Environmental development plan. The Village Development Plan is submitted to the Union Parishad by the CVDCSs for acceptance and consolidation with the Union Plan.
• The Economic Plan is implemented by CVDCSs with credit from banks and other relevant agencies with other support and services from the local government institutions at different tiers and Thana level nation-building departments for different activities under the plan.

The Planning process of CVDP has been shown in the following figure-8

![Figure 8: Planning Process of CVDP](image)

**CVDP and Environmental Education**

*Education*

The literacy rate of all the 40 CVDP villages was 85% in 1999 (Karim et.al 2003), which was higher than the national average. School enrolment increased to 99.35% during 1999 due to the development of awareness concerning village society activities which was done through weekly meeting, the annual education development plan and constant motivation. Some societies also established schools through their own financial assistance. The society also has adult education program to educate the illiterate elderly people for the purpose of upgrading their awareness, skill and knowledge.
Water and Sanitation

Access to clean water and poor sanitary disposal of human excreta through sanitary latrine is a problem for many households in rural areas of Bangladesh and as a result of contaminated drinking water, gastroenteritis other water-borne diseases are common. The effect of these diseases together with chronic malnutrition and inadequate health services led to a high rate of infant mortality. In this regard 60.79% households of the CVDP villages were using sanitary latrine (either water sealed ring slab or permanent latrine) in 1999 (Karim et.al 2003). In CVDP area almost all of the households used tube well for drinking water.

Family Planning and Health Care

Population growth is identified as perhaps the most serious problem inhibiting sustainable resources. Increases in development or productivity are eroded by population. A very low land/man ratio intensifies the competition of the very limited land resources for different uses. Family planning and health care village development workers play a very important role as motivators in convincing eligible couple to adopt family planning in CVDP villages. Adoptions of family planning (including permanent and temporary birth control) measures are increasing in the CVDP villages. CVDP through its training and informal education programs played key roles in this aspect. Adoption of family planning methods - either temporary or permanent has significantly increased among the eligible couples in the CVDP villages during 1999. The total adoption rate was 84.29% in 1999 due to increased awareness created by the project activities.

Infant child and maternal mortality rates are important parameters to measure the health and nutritional status of any community. In CVDP areas various especially provisions of EPI, health extension services and the creation of awareness raised by village development health
workers have brought down the number of infant, child and maternal mortality rates to a great extent.

*Tree Plantation and Homestead Gardening*

Commercial logging of timber for fuel and other use together with encroachments for agricultural and settlement purposes have substantially reduced the area cover by forests. There is a continuous loss of valuable mangrove and natural forests in different parts of the country. Therefore tree planting has been intensified within the CVDP village area. The villagers under CVDP societies planted a variety of trees around their homestead and other fallow land as they became more aware about the environment as well as the economic value of the trees. The numbers of trees planted in the village were 247342 on June 1999 (Karim et al. 2003).

The CVDP members also do farming i.e., homestead gardening with different types of seasonal vegetables. This type of homestead gardening helps them meet the needs of their households in addition to making the household compound is more green and environment friendly.

*Poverty Alleviation*

As poverty is not a single dimensional-problem, there is no short-cut method to resolve it. The CVDP is an experimental project in creating an institutional infrastructure to address rural problems related to socio-economic development. It encourages self-management by promoting local leadership and community participation and it also helps to form collective capital through regular thrift deposits. It does not separate the rich and the poor and divide
men and women, but the poor and the women get due attention in the process of the implementation of the program.

The CVDP approach is not exclusively a sectoral poverty alleviation program in true sense, rather the comprehensiveness of the approach itself places all its vigor and strength in the process of creating a self-sufficient, self-reliant and self-propelling village society.

The CVDP societies have been trying to generate their own capital to reinvest it in the villages to create more production and employment opportunities within the communities. These societies implement small scale Income Generating Activities (IGA) in the field of animal husbandry, fisheries, crops, vegetables, etc, which contributes to higher production, employment and income.

The program emphasizes production, employment and income generating aspect of development. However, it does not ignore the social services and social security aspects of development. The program categorically looks after health, education, family planning, housing, sanitation, environment, social harmony, law and order, etc, with due emphasis on evolving a self-sustaining social security system from the grassroots level.

It may be mentioned that the continuous training efforts directed towards different target groups in the villages has been contributing to the development of human resources. Thus, this program does not wait for the villagers to become poor first and then to make efforts for the alleviation of their poverty. It also does not wait for oracles to come and rescue them. Rather, they try to create a condition in the village so that new members are not enrolled in the group of the poor. All the villagers with the support from government and non-
government agencies prepare plans and implement programs so that the poverty situation does not aggravate (Ahmed: The Bangladesh Observer).

The institutional framework developed through this program tries to help the government, render its support services easily and with minimum costs for all who need their services. It also paves the way to evolving a process through which a self-reliant and sustainable village institution can flourish. According to Roy (2003), in the contemporary period, an action research run by BARD in the name of the CVDP on village development through social capital formation has been successfully.

**Main Features of CVDP**

*Linkages with the NBDs*

The main approach of the CVDP is one village one institution. In each village under the program there is a village based cooperative called the “Comprehensive Village Development Cooperative Society (CVDCS)”. It covers all the villagers, adult male and female and Children. The CVDP is managed by a managing Committee. The representatives are selected by the general members of the society.

The CVDCS has a linkage with local government national building departments (NBD) for the purpose of development of common village facilities –physical, social, economic and obtaining support services available at the Upazila. The NBD’s find it easy to provide their services through CVDCSs. In the monthly meeting of the Upazila Parishad (UP), activities of CVDCSs have been reviewed. Similarly NGOs can make coordination with CVDCSs for their support services. The coordinated delivery and receiving mechanisms of rendering services to the members is being developed under CVDP, which can be seen in the Fig. 9.
Planning with the People

The planning process has been practiced in CVDP with the active participation of the villagers. Every year the society prepares both economic and social development draft plan based on its own local resources. Later on, the plan is presented in the annual general meeting of the society where the members participate thorough discussions concerning the plan and make necessary corrections if needed. The unique features of this program is that the representative of all the CVDCSs meet once every year in a Annual Planning Conference (APC) at Upazila centre, review their activities of the past year and prepare the plan of activities for the next year. Individual societies presented their reports in the APC, and after
deliberations individual plans are prepared. This provides an opportunity to exchange views, share experiences, know each others problems, probable solutions and progress has been made by different societies. The APC give an opportunity for leadership training and a source of feed back for the implementers.

*Human Resource Development*

Community Development as a dynamic process needs to equip the rural people with increasing knowledge and skill to strengthen their capacity to be more productive. Information dissemination through skill development training in this regard is very much important for the implementation of various development organizations. BARD since its inception in early sixties has given the highest priority on need based training at the local level. BARD firmly believe that community based extension worker could bring a desirable change in the local level development sectors such as livestock, fisheries, agriculture, health and nutrition, family planning, environment, education including various social aspects as well. Considering these facts, some component based extension workers have been introduced in the CVDP villages, commonly known as village Development Workers. The village development workers received training according to their fields like fish culture, livestock development, environmental development, family planning, rural education, health and sanitation etc. These trained development workers are responsible for maintaining liaisons with the government officials of NBDs at the UP. They disseminate their acquired knowledge and information in the weekly meetings of the CVDCSs to other member of the society to increase productivity, skill and social awareness in different fields. They virtually work as social mobilisers, trainers, extension agents as well as service providers at the local level.
CVDP as a Sustainable Community Organization

Since its inception, CVDP has been trying to establish a strong institutional framework at the village level with active participation of the members of the societies. It has developed a service receiving mechanism through a formal institution where transparency and accountability of management are ensured in various forums like weekly meeting, monthly joint meeting and annual general meeting. Attempts have been made to develop members’ awareness and education, managerial ability, and dynamic leadership. There have also been attempts to establish a partnership linkage with the government delivery system such as government NBDs, local government (Upazila and Union) and non-government organizations (NGOs) that provide services and supplies.

- As a result, of the above factors, it has been observed that the CVDCSs have become a self-reliant in terms of local level planning, local resources management, development of skilled labor and dynamic leadership. It has also been observed that the village societies are now able to manage their socio-economic activities properly without any major financial assistance from external sources, except the normal advisory services of the government agencies.
• The CVDCSs have developed a trained and committed development worker at the grassroots level who eventually will reduce the risk of extra expenditures of the government for extension services by different agencies. Even the existing activities of the GOs and NGOs can be implemented in a planned and coordinated manner. Moreover, it will reduce the overlapping and duplication of programs of different agencies at the village level, which will minimize the expenditures and ultimately contribute to the development of internal resources in the government exchequer.

• By and large, amalgamation of all segments and activities under one umbrella institution at the grassroots level and its linkage with other horizontal and vertical institutions helps develop a strong organizational base in case of physical and labor development compared to any other target group approaches. On the other hand, social capital has been developed in the CVDCSs where the villagers use their traditional values like empathy, unity, family bonding to address the problems in a common manner.

CVDP emphasizes the production, employment and income generating aspect of development. However, it does not neglect the other aspects of development like health, education, family planning, housing, sanitation, environment, social harmony, law and order, etc. The CVDCSs ‘weekly meeting’ systems have developed member’s confidence to participate in various socio-economic programs of their organization spontaneously with firm commitment. It helps them to develop a self-propelling institution for sustainable development.

• It is worth mentioning that some of the Government organizations like, the Local Government Engineering Department (LGED) have been replicating the concept of CVDP through Small Scale Water Resources Development Project (SSWRDP) in all 64 districts of Bangladesh by organising Water Management Co-operative Societies (WMCSs). The concept of CVDP is also replicated partially by Participatory Rural Development Program (PRDP) of Bangladesh Rural Development Board (BRDB) funded by Japan International Development Cooperative Agency (JICA), South Asian Poverty Alleviation Programme of UNDP (Kishoregonj), Swanirvar Bangladesh and other private sector initiatives working within the group approach.
5.3.4 Japan

I. The Mie Prefecture Eco Movement

Environment Policy in Mie Pref.

To create an “environmentally advanced prefecture” under the basic policies of

- Leading by example
- Establishment of partnership with citizens and local companies
- Providing necessary information to the public

Econ Movement

The creation of sustainable lifestyle for the people of Mie

- Assisting NPOs that are involved in improving the environment
- Proposing concrete programs which everyone can participate in

Figure 11: Organization involved in the Eco Movement

---

Takuji Terada (2003), The Mie Prefecture Eco Movement
Mie Eco movement concrete program

- The “Say No to Plastic Bag” Movement
- Summer Eco-Style Campaign - to reduce the energy consumption in offices
- Summer Eco Point Program - saving electricity in the home and contributing to the prevention of global warming

<table>
<thead>
<tr>
<th>Programs</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>To “say no to plastic bag movement”</td>
<td>Refusing the plastic bag is rare</td>
<td>The refusing rate is increased gradually</td>
</tr>
<tr>
<td>Eco style campaign</td>
<td>Tie and jacket were common sense even in summer</td>
<td>Neat casual (no tie and jacket) is accepted in summer</td>
</tr>
<tr>
<td>Eco point program</td>
<td>Almost of all people have knowledge but no action</td>
<td>Individual activities are increased Town-based activities occurred</td>
</tr>
<tr>
<td>Neighborhood nature days</td>
<td>These events are managed by a local government</td>
<td>NPOs etc. organized the events by their own</td>
</tr>
</tbody>
</table>

Figure 12: These Programs Have Brought about Change

![Diagram showing the process of change through the eco movement](image)

Figure 13: Change through the Eco Movement
II. Junior Eco-Club

In order to promote environmental education among children, the Ministry of Environment has initiated Junior Eco-Club, a nationwide “green” club activity. The Club was established in 1995, to raise children’s awareness and interest in environmental conservation. The Ministry of the Environment encourages school children to work in a group for the betterment of the environment and supports their activities. The Japan Environment Association serves as the national secretariat to the Junior Eco-Club. It publishes a bimonthly newsletter and conducts exchange programs to share their experiences and success. The goals of the Junior Eco Club are as follows:

- To foster the children’s awareness on environmental conservation
- To build a sustainable society that has less environmental stress in the 21st century
- To back up our children responsible for shouldering the next generation so that they can together take the initiative in learning about their local and global environments as well as taking specific and positive measures and actions.

A Junior Eco-Club can be set up whenever a group of elementary and/or junior high school students (numbering from a minimum of 3 to a maximum of 20) show interest in environmental conservation and make their submission to the local secretariat. The environmental activities are basically of two types; one is the voluntary set of activities called “ecological action” and the other one is the set of activities called “ecological training”. Ecological training is proposed by the national secretariat as a common national program.

The following is the pledge the club members have to make before joining the club. This is called “our pledge” as stipulated in the charter of the Junior Eco-Club.

- We pledge to love “waters, the greenery, planets and the Earth” which creates and fosters life to be passed on safely to further generation.

---

61 Masahiro Takahashi (2002), The Path to Success, IGES
• We pledge to take an interest in our own lifestyles and surrounding environments and make efforts to live in harmony with all life on the Earth.

• We pledge to continue our activities to protect the Earth in order to join our hands with our friends all over the world.

The Junior Eco-Club activities are based on member’s needs and interests. Each club takes up its own activities. Some of the club activities include exploring garbage, study of aquatic life, study of nature and natural history, study of insect distributions and wild plant, mapping, and recycling. In order to make club activities consistent and enlightening, clubs must adopt a common framework of learning activities designed by the national secretariat.

6. Discussion and Conclusion

The findings of the research indicate that the studied countries are aware of and responsive to the environmental problems and their consequences. They have shown a positive attitude by incorporating environmental issues into formal and non-formal educational programs. EE in these countries are provided by many organizations and institutions like, government and non-government organizations, academic institutions, community organizations and the mass media. Some pioneering initiatives has been emerged despite their (Bangladesh, Thailand, The Philippines) great resource constraints, persistent poverty, increasing population, resource use conflict, inequality and faulty development practices. Therefore EE is moving forward but has not been able to make any significant progress regarding the issues like preventing, stopping and reversing environmental degradation in these countries especially Bangladesh, Thailand, and The Philippines. Due to the complexity of the problems, there are big constraints for smooth progress. In order to address these issues like, poverty, rising population and other environmental problems, an integrated and systematic approach should is needed.
There is a lack of coordination between organizations as well as personnel in most of the Asian countries. There is a tendency either to shift or avoid responsibility, thereby causing an inconsistency in the program. Sometimes, the situation is that ‘everybody’s responsibility in no body’s responsibility”. Thus there is an urgent need for improved governance for environmental education.

Lack of coordination amongst responsible agencies is a common problem. Due to this, there is duplication, or competition between actors. When the situation becomes serious, blaming each other is a common phenomenon. Several ministries adopt individual policies and procedures to pursue their own mandate without any collective actions and vision. Due to lack of institutional coordination, the mechanism for personal coordination also does not exist. Usually, there is no consultation among themselves and if there is any agreement, it is loose, vague and not morally binding.62

6.1 Process of Implementation

Having considering the above-mentioned issues, concerns and challenges, the following recommendations has been made for future actions, where RCE could play a significant role.

EE needs a systematic vision of the environment and of the society, including its economic activities. It should address all sectors of the society and economy. In order to enhance the relevance of EE to developing countries like Bangladesh, Thailand, and The Philippines, it should be situation orientated, adopted to local circumstances and responsive to local needs. This can be achieved by working with the local communities and their institutions like CVDP. CVDP is an approach to EE can often be conducted without providing major material

incentives to the target audiences if they perceive it as pursuing their interests. Locally adopted EE also take into account economic, social and political constraints and aims to provide projects of increased well being; in other words it combine environment and development concerns as perceived at the local level. EE should follow an action oriented, problem solving approach, transmitting positive message about what individuals and groups of people can do to tackle environmental problems. CVDP could involve active and responsible participation of all concerned stake holders and participatory processes could be reflected in the overall policy, plans and programs of the environmental education system.

6.1.1 Capacity Development of the Stakeholders

Transfer of knowledge, along with other essential processes such acquiring awareness, attitudes, skills, ethics, analytical ability and capacity building are the keys to achieve an environmentally sound and sustainable society. Through education and training, people’s desirable changes in knowledge, attitude and behaviors can be obtained. Therefore capacity building is considered the driving force for enhancing environmental education. The enabling capacity of local people is initially dependent upon their institutional capacity and capability in addition to active participation. The principle should to involve all concerned in a discussion to take into account people’s understanding and to also adjust the pace and sequence of activities to their capacity and will to act. Considering these facts CVDP has introduced the concept of village development worker, who received training according to their affiliated field from the Upazila level national building officials. These development workers disseminate their knowledge to the fellow members of the CVDCSs through society’s weekly meeting to increase skill and social awareness in different fields.
6.1.2 Improved Governance and Decentralized Administration for EE

Improved governance in the context of EE would encompass an effective organizational structures, proper coordination, sound management, and periodical monitoring and evaluation. Due to multi-disciplinary and comprehensive nature of EE, Effective governance is absolutely necessary to deal with its issues at all levels of the educational system and EE should also be addressed in a holistic manner. In this context CVDP is an appropriate approach to develop a package programme for an integrated and total development of the local communities and to channel all sorts of services and supplies to the villagers through this institution. It is an institutional approach to solve any problem related to village modernization based on existing local resources according to the principles of cooperation, cooperative education, democratic decision-making process as well as establishing member’s rights and privileges.

6.1.3 Developing Partnership/Networking for Collaborative Works

For EE to have a significant and lasting impact it is necessary to create a “critical mass” at the local level and / or national level through the concentration of efforts and / or networking or building coalitions. This should include co-operation among different branches of public administration (e.g. Ministers of education, agriculture, environment etc) and should seek to involve a variety of actors in the private sector including media. A true partnership for EE is working together for a common goal. It includes a wide range of activities such as networking of organizations and individuals, sharing of knowledge, experiences and perspectives, initiating collaborative works, etc.

Another major issue of eminently practical importance is how the actors of EE are related to each other, within and between institutions, or as members of networks or coalitions. While
most EE activities have to be very location-specific and therefore diverse in nature and approach, this specificity also carries the risk of weakness (and perhaps even insignificance) of relatively small and isolated EE activities. It is therefore essential to promote contacts between members of different institutions involved in the complex system dealing directly or indirectly with environmental problems, and to foster the building of networks and coalitions among those active in EE. Such approaches can be very useful in collecting and disseminating information, in building up powerful movements relatively quickly, and in conducting activities with strong impact at low financial cost since large numbers of committed volunteers can be called upon when necessary.

New initiatives will not succeed, unless there is support and involvement at the local level. Local involvement in planning, decision-making and the development and management of projects should be a key goal. Dialogue between local residents, business interests and the public sector should be stimulated and the development of environmental projects by community groups encouraged and supported.

Considering these facts CVDP could be considered as an institutional approach will emphasize firmly to create a multipurpose single village institutions as a forum or platform to be used by all development agencies irrespective of Government and Non-government Organizations (NGOs) which may gradually help to reduce duplication, proliferation, wastage and inefficiency in the EE sector and in turn contribute to the development of sustainable process to build self-managed community organizations.

The planning process of CVDP has been practiced with the active participation of the local communities. The unique features of this programme is that the representative of all the
Comprehensive Village Development Co-operative Societies meet once in every year in an Annual Planning Conference (APC), to review their activities of the past year and prepare the plan of activities for the next year. Reports of individual societies are presented in the APC and after deliberations individual plans are prepared. This provides an opportunity to exchange views, know each others problems and probable solutions and the progress achieved by different societies. The APC provides a forum of leadership training and a source of feedback for the implementers.

The weekly meeting systems of CVDP have developed member’s confidence to participate in various programmes of their organization spontaneously with firm commitment. It has developed a horizontal linkage of the same level through monthly jointly meeting and annual planning conference, and has also vertical linkages with the national building departments at the Union and Upazila level.
Regional Centre of Excellence

1.1 The Concept Paper

This concept paper is not a finished product. It is going to be developed through series of discussions and consultations with various parties, including Ubuntu members.

Regional Centre of Excellence (RCE) is an emerging concept. Greater elaborations are needed to develop this idea into a guiding instrument for actors around the world to promote education for sustainable development (ESD) and build their activities towards Sustainable Development (SD). Thus, the following concept paper has two objectives. First, it aims at providing readers with a set of initial ideas behind the RCE concept. Second, it seeks input from readers to refine the idea and to consolidate further actions for the establishment of a pilot group of RCEs. The paper is not a finished product but a basis for discussion.

1.2 What is a Regional Centres of Excellence?

In contrast to the concept of formal organisation, a RCE is thought of as a space that is designed to strengthen the collaboration for ESD among regional and local actors. “Regions” are seen as a part of a country, like Bretagne, Tohoku or Catalunya. A RCE may be created in an area where people have solidarity in economic, social, cultural and environmental terms, and can also get together in a relatively easy manner. A local focus is considered essential for addressing relevant SD issues for a particular region through educational activities.

School teachers at elementary and secondary schools, university professors, researchers, experts in museums, local government officials, relevant NGOs, community-based organizations (CBOs) working for ESD, representatives of local enterprises, media etc. should become members of RCEs. Experts in science parks, zoos, etc. would also be encouraged to be their members.

RCEs could vary in size, affiliations and functions dependent on regional conditions and experiences. An RCE should, however, be able to identify local concerns and address them in an integrated manner.

1.3 The Expected Role of Regional Centres of Excellence

RCEs are expected to strengthen three kinds of links among partners:

1. between different levels of educational institutions (vertical links);
2. between educational organizations of the same level, for example, schools in a community (horizontal links);
3. between educational organizations and organizations that, while not being part of the formal education, contribute to the promotion of ESD (lateral links).
The mission of RCEs is to provide leadership and regional capacity development through changing the role of scientists and educators. In this capacity, the scientists, including experts in research institutions and museums, would become providers of service to the community by helping to address local concerns. Educators, in a broad sense, will become main actors in a process where knowledge is relevant for SD. They will work with other actors in the society, e.g. representatives of local governments, NGOs, etc. would collaborate in this effort.

1.4 Activities and Functions of Regional Centres of Excellence

Activities of RCEs will be defined by the local conditions. In general, activities of RCEs could serve to

- Promote exchange of information and experience and facilitate collaboration among organisations providing different levels of education and with other organisations relevant to ESD;

An illustration of such activities could be the introduction of environmental education programs at elementary schools, community-based waste recycling activities or NGOs nature observation activities at tourism sites. Through such sharing of information and experiences, actors will improve their activities and coordinate with each other to avoid unnecessary duplication. For example, it is expected to carry out higher level education on river functions at secondary schools, based on river observation education at elementary schools, lectures at such schools by experts in universities, research institutions or community leaders who have been actually engaged in some environmental activities on site.

- Assistance in SD curricula development and implementation;

RCEs could provide important advice to assist in SD curricular design and implementation for schools, universities, professional training, etc., through sharing accumulated case-examples or mobilising resource persons.
• Facilitation of efficient and effective use of limited resources;

Establishment of RCEs could coordinate use of resources used by various organisations in the area of ESD. Effectiveness of resource use might permit a bigger scale of ESD actions or longer duration of ESD projects.

• Raising an awareness about the importance of educators and ESD among public at large and decision-makers in particular;

In order to make education a critical component for the future, ESD should be developed, implemented, monitored and reviewed at international as well as national, regional and local levels in a way that meets local conditions and needs. These challenges place a special request for the educators as designers and promoters of future reforms in ESD. Responsibilities should be accompanied by the conditions that permit complex undertakings of the educators. Important role of educators in carrying out the educational reform through DESD should be emphasized.

• Facilitation of the collaborative projects to straighten ESD activities

For instance, new ESD projects at community level may be developed in collaboration with the Chamber of Commerce or local enterprises.

1.4 RCEs as Means to Promote Global Learning Space for Sustainable Development

Through their activities, RCEs would develop innovative ways of collaboration among scientists, educators and other stakeholders of the region. Together, RCEs would constitute the Global Learning Space for Sustainable Development, which would be an important contribution to the successful implementation of the DESD. Among other facilitating means, the Global Learning Space would be assisted through the international portals. The Toolkit/Resource Project to be developed by the Global Higher Education for Sustainability Partnership (GHESP) could be an example of such a portal⁶³. In turn, the Portals will inform RCEs about good practices in other RCEs or elsewhere. The Global Learning Space enables locally based RCEs to tap into various experiences and types of knowledge assembled beyond their region or network. Global Learning Space would further enable ESD through provision of resources at the local, regional, national and international levels.

1.5 RCEs as Means to Promote Global Learning Space for Sustainable Development

Through their activities, RCEs would develop innovative ways of collaboration among scientists, educators and other stakeholders of the region. Together, RCEs would constitute the Global Learning Space for Sustainable Development, which would be an important contribution to the successful implementation of the DESD. Among other facilitating means, the Global Learning Space would be assisted through the international portals. The Toolkit/Resource Project to be developed by the Global Higher Education for Sustainability Partnership (GHESP) could be an example of such a portal⁶⁴. In turn, the Portals will inform

⁶³ See www.ulsf.org/toolkit for more information on the project and to view a draft homepage.
⁶⁴ See www.ulsf.org/toolkit for more information on the project and to view a draft homepage.
RCEs about good practices in other RCEs or elsewhere. The Global Learning Space enables locally based RCEs to tap into various experiences and types of knowledge assembled beyond their region or network. Global Learning Space would further enable ESD through provision of resources at the local, regional, national and international levels.

1.6 The Way Forward: First Steps

UNU is planning to undertake a few demonstration projects of RCEs in the Asia-Pacific region as the first step to promote RCEs and their networking at the global level. In order to fully take into account the local, regional conditions and initiatives, RCEs might be identified in a comparable way to the monuments on the cultural heritage list. In the process, it would be possible to mobilize many diverse actors and institutions, learn from their creative ideas, build on their diversity and, thus, promote international cooperation in ESD.

Although ESD covers not only environment and natural resources management it also covers much broader topics, one cannot address all these themes simultaneously. RCEs may wish to cover some specific high priority topics in the region at its initial stage and gradually expand its scope over time. For example, in Japan, many entities have been accumulating experience on environmental education compared with some other topics. In areas where people have serious concern about environment issues, RCEs may begin focusing their activities mainly on environmental education about those specific issues. It is essential, however, to envision the ways for gradual broadening of RCEs’ agenda taking into account the regional needs and experiences.
References


Bhandari Bishnu B. et al. (ed.) (2002), The Path to Success, Some Pioneering Examples of Environmental Education, Environmental Education Project, IGES, Kanagawa, Japan

Bhandari Bishnu B.and Osamu Abe (2003), Education for Sustainable Development in Nepal, Views and Visions, Environmental Education Project, IGES. Kanagawa, Japan


Fein John (2004), Education for Sustainable Development: Issues and challenges of the International Decade for ESD in Asia and the Pacific, Globalism and Education for Sustainable Development, some view points, IGES, Kanagawa, Japan


IGES (2002), Regional Strategy on Environmental Education in the Asia-Pacific, Environmental Education Project, IGES, Kanagawa, Japan

JICA (1999), Country Profile on Environment, Bangladesh, JICA, Tokyo, Japan

McKeown Rosalyn (2002), Education for Sustainable Development Toolkit, Energy, Environment and Resources Center, University of Tennessee, USA


Saruphong Articharte (2003), Learning from the Past for a Better Future, The Sixth UNESCO /Japan Seminar on Environmental Education in Asia-Pacific Region, March 18-20, Tokyo, Japan

Sustainable Communities of SD Villages- www.sdvillage.ph (12/4/2003)

Schneider Hartmut (1993), Actor and Approaches in Environmental Education in Developing Countries, Environmental Education; An Approach to Sustainable Development Organization for Economic Co-operation and Development (OECD), France

Tilbury Daniella et al. (ed.) (2002), Education and Sustainability, Responding to the Global Challenge, IUCN Commission on Education and Communication CEC, IUCN, The world Conservation Union, Switzerland