

# Environmental Education for Sustainability in Bangladesh

Masudul Hoq Chowdhury\*



## Introduction

Bangladesh is located between 20°34' and 26°88' north latitude and 80°1' and 92°41' east longitudes with an area of 143,998 square kilometers and a population of approximately 113 million. It is bordered on the west, north, and east by India, in the southeast by Burma and in the south by the Bay of Bengal. Except for the hilly regions in the north east and south east the whole country consists of low and flat land formed mainly by the great *Ganges* and *Bramaputra* River system.

Bangladesh is faced with rampant poverty, high population density, and an increasing population, recurring natural disasters and dwindling natural resources. It is one of the poorest of the developing countries with a low resource base, a very low land man ration, which is threatened by both natural hazard and anthropogenic mismanagement and overexploitation. 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.

Development in a developing country like Bangladesh primarily aims to provide its people with enough food and basic shelter. Here the quality of life is not envisaged as the improvement of the quality of the environment. A major threat to the natural environment in Bangladesh originates from its over-use of some of its natural resources for a subsistent livelihood. Bangladesh is a least developed country which is characterized by

- Persistence of poverty at high levels
- Proneness of sudden destitution of substantial number of people due to natural hazards
- Low level of human capability development
- Low per capita income
- Increasing and glaring socio-economic inequality
- Extreme high un-and under employment
- Low-level productivity in agriculture, industry and other sections
- Very limited export base
- Very low land-man ratio

## Major Environmental Issues in Bangladesh

Population growth and human activities have an impact on natural environment. Industrialization, overexploitation of natural resources, waste disposal, pollution of land, air and water, unplanned development of infrastructure, loss of biodiversity, all contribute to the deterioration of natural environment and resources in Bangladesh. Most of Bangladesh's tropical forest and almost all flood plains have been affected by human activities that are particularly detrimental to the natural resource base.

---

\* United Nations University

#### Facts about Environment

- The forest habitat is less than 6% of total land area and is declining rapidly.
- Water extraction upstream in Nepal, India, Bhutan and Tibet greatly reduces dry season water flows.
- Rapid expansion of dry season irrigation for rice cultivation has resulted in the loss of over 50% of the dry season perennial portions of the country. Seasonal drawdown of the water table is also a problem, causing some tube wells to run dry.
- There is lack of effective protection for environmentally critical areas contributing to a reduction in biodiversity.
- There is limited or no participation by local communities in resource use decision making.
- Inadequate information on the status and functioning of critical ecosystem has lead to poor environmental policies.
- Once natural resources are degraded, there is limited opportunity for alternative income activities.
- Public awareness of environmental issues are limited.
- There is a lack of Skilled personnel trained in sustainable management of renewable natural resource.
- The aquatic and floodplain ecosystem continue to be severely degraded. The (perennial) wetland habitats and ecosystem have lost larger water bodies (rivers and canals) due to siltation and landfilling for agriculture and homestead use.
- Massive deforestation has also taken place, with negative consequences for both diversity and production of tropical forest resources.
- Diversity of fish species and fish catch has decreased, reducing the income of the very poor who depend on fish for livelihood.
- Reduction of forest biodiversity and production has negatively affected food, fodder, medicine and shelter for poor people.

*Source: [www.usaid.gov](http://www.usaid.gov)*

#### **Environmental Regulations and Management in Bangladesh**

At the official level a Ministry of Environment and Forests and an upgraded Department of Environment (DOF) have been formed. The Environmental Pollution Control Ordinance of 1977, the Environmental Policy of 1992 and the Environmental Conservation Act of 1995 are strong moves towards a quality system of Environmental protection. Bangladesh introduced its first Environmental Policy in May 1992, with the following objectives

1. Maintain ecological balance and the overall development of the country through conservation and improvement of the environment
2. Protect the country from natural disasters
3. Identify and regulate all activities which pollute and degrade the environment
4. Ensure sustainable, long term and environment-friendly use of all natural resources and
5. Remain actively associated with international environmental initiatives to the greatest extent possible.

#### **Environmental Education (EE) in Bangladesh**

In order to create awareness of the importance of conservation of the natural environment, action is needed at various levels and in various modes. Among the different levels, are the national policy makers, community leaders, professionals of various disciplines; teachers, students and youth groups; women, cooperators, religious leaders and other special groups;

peasants and so on. In terms of the mode of dissemination, the awareness programs may be a part of the formal educational curriculum; these may also be part of informal programs and delivered through other communication media.

The first environmental policy has the following provisions with regard to education and public awareness.

- Empower people through education by eradicating illiteracy and developing the country
- Create mass awareness regarding environmental conservation and improvement, and sustainable, long term and environmentally sound utilization of all
- Ensure the inclusion and dissemination of environmental knowledge and information in the formal systems of education and media
- Induce spontaneous and direct participation of people in all environmental activities and
- Incorporate environmental issues into all government and non-government training programs and into training programs for industrial and commercial workers.

In pursuit to the provisions of the Environmental Policy in the education sector, the Environmental Action Plan recommended the actions presented in the Table-1.

Sector: Education and Mass Awareness	Implementing Agency
1. The Ministry of Environment and Forest will implement a five-year integrated plan for mass awareness of the environment. The Ministries of Information and of Education will provide support and assistance	<ul style="list-style-type: none"> <li>• Ministry of Environment and Forest</li> <li>• Ministry of Education</li> <li>• Ministry of Information</li> </ul>
2. Curricula related to the environment will be included at all levels of education and in all training programs	<ul style="list-style-type: none"> <li>• Ministry of Education</li> </ul>
3. To create awareness, the participation of Imams (religious teachers), teachers and leaders of all religious, social and voluntary organization will be ensured	<ul style="list-style-type: none"> <li>• Ministry of Religion</li> <li>• Islamic Foundation</li> <li>• Ministry of Social Welfare</li> <li>• Ministry of Education</li> </ul>

Source: Farooque Mohiuddin and S. Hassan Rizwana. (1996)

### Environmental Education in Formal Education

The introduction of EE was started in Bangladesh following the Qudrat -i-Khuda Commission Report of 1974, which led to the introduction of new curricula and syllabuses for various stages of school education by 1978. In this new syllabus Environmental Studies was introduced at the primary and secondary stage in place of the earlier science and social studies.

The main principles according to which the syllabus of Environmental Education for the primary stage that was prepared were the following (Sharafuddin:1991)

1. The pupils should be able to observe and know their immediate environment and develop a scientific attitude towards solving their everyday problems
2. The study of separate subjects like Biology, Physics, Chemistry, Geography, Geology, History and Social Studies do not help pupils to learn about the wholeness of the environment, thus an integrated subject would be more useful and
3. Knowledge about the proper use of environmental resources and a sound understanding of how conservation of these resources is essential for the maintenance of human life and civilization.

EE is provided in both formal and non-formal schools. All government and registered non-government schools follow

the national curriculum. NGOs working with the government projects and programs in the educational sector also follow the national curriculum. There are also some NGOs who have their own curriculum.

The subject matter of Environmental Education from Primary to Secondary level of education has the following sequence:

In Grade 1-2 it is taught orally without any prescribed book (a guide book is followed by teacher in all schools). Students are taught about the family environment, food, clothes, shelter, domestic animals, and birds of the surroundings environment. In addition they are also taught about lesson includes living and non-living objects in the local environment, the need for a neat and clean environment and the relationship between health, hygiene and the environment.

In Grade 3-5, the subjects are divided into two parts, Environmental Studies (Science) and Environmental Studies (Society). Environmental Studies (Science) teaches, rudimentary knowledge of the earth, the solar system and the universe, the inanimate and the animate worlds, man and environment, preservation of the environment, food, nutrition and population, agricultural development in Bangladesh, and the various natural resources of Bangladesh. Environmental Studies (Society) teaches about the social environment, region and regional environment, people's lives in different environment, environment and living conditions, change of environment and people's lives. Similar topics are continued in the secondary stage of education.

### **Higher Education**

There are public and private Universities and colleges for higher education in Bangladesh. Many colleges teach Botany and Zoology at the Bachelor level where Ecology is a part of these subjects. Ecology is also included as a topic in a four year Honours course following Grade 12. All the major universities of the country have included ecology as a topic in botany, zoology and geography. At the postgraduate level, Ecology is compulsory in Botany and Zoology departments. There are also courses on Environmental Management and Perception and Resource Management and Environment at the M.Sc. level in different Universities.

There are a number of research organizations in Bangladesh have developed research capabilities in the field of environment. Among these are:

- Bangladesh Agricultural Research Council (BARC),
- Bangladesh Agricultural Research Institute (BARI)
- Bangladesh Rice Research Institute (BIRRI)
- Bangladesh Jute Research Institute (BJRI)
- Bangladesh Fisheries Research Institute (BFRI)
- Bangladesh Institute of Development Studies (BIDS)
- Institute of Forestry
- Bangladesh Council of Scientific and Industrial Research (BCSIR)
- Space Research and Remote Sensing Organization (SPARRSO)

### **Non-formal Education**

In Bangladesh, there are several institutions under the aegis of the government which undertake program for rural development. Bangladesh Academy for Rural Development (BARDA), Bangladesh Rural Development Board (BRDB), Local Government Engineering Department (LGED), Department of Cooperatives (DOC), and Rural Development Academy (RDA), are all directly involved in rural development. There are some other important government organizations that are

related to rural development these include Bangladesh Small and Cottage Industries (BSCIC), Department of Agricultural Extension (DAE), Bangladesh Agricultural Development Corporation (BADC), Bangladesh Water Development Board (BWDB), Department of Social Services (DSS), Bangladesh Fisheries Development Corporation (BFDC), Department of Youth (DY), Bangladesh Forest Industries Development Corporation (BFIDC), and Bangladesh Sericulture Board (BSB). These institutions play an important role in sustainable development through which poverty alleviation with environmental concerns can be achieved.

### **Non-government Organization**

NGO activities in regard to the development of self-reliant organizations within the rural poor also have a catalytic role to play in achieving sustainable development. The NGOs are encouraged to undertake program on environmental improvement in various ways. The NGOs have been taking increasing role in creating environmental awareness among the people and organizing various appropriate training programs for the concerned groups has been increasing. NGOs raises awareness about health and nutrition, hygiene, safe drinking water, sustainable farming, sanitation, primary health care, population control, and family planning through group and community action. There are NGOs who have policies and programs with a multi-sectoral and holistic approach to human development and their activities include institution building, human resource development, social development, capital resource development, and environmental development. Some NGOs are also engaged in environmental training and education. NGOs mainly target disadvantaged groups who do not have access to formal education and training institutions. Other target groups include teachers, trainers and other people who have an interest or stake in environmental conservation. NGOs conduct EE through group discussion, non-formal schools, community mobilizations and the mass media. Now a days NGOs are institutions capable of effectively performing development work at the grassroots level in addition they they can also influence the Government and other institutions.

### **Civil Society Organizations**

Various civil society organizations came up with different activity packages aiming at the protection and conservation of environment. Among these are:

- Bangladesh Poribesh Andolon (BAPA) (Environment Movement) aiming to promote public awareness and action for the prevention of environmental degradation, mitigation of pollution and the safe protection of the environment in Bangladesh, and influencing protection of the global environment. BAPA launched vigorous campaigns including demonstrations, rallies and boat processions to protest against pollution of the rivers Buriganga, Turag and Balu; Gulshan-Baridhara lake, Baragram and Ashulia water bodies. The protests were particularly directed against illegal encroachment of water bodies and construction work such as filling up ponds, lakes, canal, rivers or wetlands. The government has started a program to demolish the illegal structure and reduce water pollution (BAPA).
- Bangladesh Environmental Lawyers Association (BELA), whose mission is to ensure sound and sustainable ecological order in the country using legal mechanism, proper observation of vast regulatory regime on the environment and to make people aware of their environmental rights and duties. BELA conducts its EE activities through training, workshops, information dissemination on environmental regulation through the media, legislative advocacy, documentation and publications (BELA).

### **Mass Media**

The electronic media like Radio Bangladesh and Bangladesh Television and the print media such as news papers,

periodicals, and journals are playing a very significant role in environmental education programs. Environmental education programs are regularly aired by the electronic media. Media provides the information related to natural calamities such as floods and cyclones, land erosion, water pollution, deforestation, industrial effluent, destruction of wild life, green house effects, biodiversity and the like.

### **People's Traditional Knowledge**

Uses of traditional knowledge have been long in practice in agricultural farming in rural Bangladesh. A large number of people in the country have had no access to go through a process of formal education; they have been using their traditional wisdom to cope with environmental problems. In many parts of the country traditional methods of farming, fishing, health care and other technologies based on age old experience have been practiced among the rural farming community. These kinds of traditional knowledge and technologies are usually based on environment friendly farm practices.

Agricultural farm practices in Bangladesh have for long depended on the basis of versified words of wisdom called *Khonar Bachan* (Sayings of Khona, a mythological wise lady. Some consider Khona to be an imaginary person, her sayings symbolizing folk wisdom based on centuries of farming practices (Newaz). One of Khona's sayings is as follows: *Mager mati heerer kati, Falguner mati shona; Choiteyr mati jemon temon, Baishakher mati mona*. It means that, the best time to start preparation of soil for cultivation is the month of Maghe (mid-January to mid-February); the month of Fulguna (mid-February to mid-March) is also quite good; Chaitra (mid-March to mid-April) is so so, but the soil is no longer suitable in Baishakh (mid-April to mid-may).

There are many such sayings on the effect of weather on crops. For example, "*Diney rode, rate jol / Tatey barey dhanner bol*" which means, if there is sunshine during the day and rain at night, it would give a good rice harvest.

There are some other types of folk saying and folk remedies that relate to health care, protection of crops and conservation of natural resources, such as, local Neem trees (*Azadirachta indica*) that are used for health care. Neem and Biskatali (*Polygonum sp.*) is used in different parts of the country for protecting food grains from pests during storage. (Sharafuddin and Rahman: 1994).

It may be useful to compile this kind of folk wisdom and make good use of them to educate the common people about conservation of nature and the environment.

### **Conclusion**

Though various governmental and non-governmental organizations have been trying to promote and foster environmental education, the overall achievements have not been satisfactory so far. One of the EE problems in the formal education system is the lack of supplementary reading materials for the pupils as well as of appropriate Audio-visual aids to teaching. The existing curriculum is book knowledge-based and examination orientated. There is also a lack of vertical and horizontal integration of curriculum components. School children do not have the opportunity to develop skills to analyse and evaluate local or national environmental problems or issues. It is very often EE is not a priority especially when the curriculum is overcrowded, even many teachers, students and parents do not perceive it as a priority in the curriculum.

The status of EE that has been performed by the informal sector is not satisfactory either. The print media like newspapers, journals, and magazines do not have wider circulation because of the high rate of illiteracy and it is also costly to acquire them on the part of the common people. EE related programs are given inadequate time by the electronic media. Though the national TV channel does show drama, film show, and documentaries on environmental issues, it has very limited coverage among the common people as there there is a lack of power supply in many parts of the country and also

many people cannot afford to buy a TV.

The mass media with the most potential in Bangladesh is the radio, which sends development messages to every corner of the country. Most of the people own and listen radios, but the broadcasting programs are not related to EE issues enough. Moreover there are not any established systems to get feed back on effectiveness of the programs. More effective program should be developed and sponsored for electronic media.

Lack of coordination amongst respective organization is a very common problem in Bangladesh. Many ministries or departments adopt their individual policies and programs to pursue their own mandate without any collective efforts and because of this there is duplication or competition between the actors. Unavailability of data and information on EE related issues also hamper the activities of environmental educators and facilitators.

Though the existing EE programs do not seem to be good enough, but the future looks promising. The awareness of the environmental problems grew in the country at all levels and in all sectors. Bangladesh observed 1990 as the "year of environment" and the decade of 1991-1999 had been observed as the "Decade of the Environment". Bangladesh has also signed various International Conventions and Protocols concerning the environment and adopted policies for environmental conservations, protection, and enhancement. The government banned the export of frog legs as well as killing of all kinds of wild birds and animals as a step towards the preservation of the natural environment and ecological balance. The Government has also recently banned on the production, marketing and use of polythene shopping bags throughout the country. Recognizing the air pollution in Dhaka city, Two Stroke Engine Vehicles (TSEV) and old and defective vehicles has been withdrawn from the city street. These are some of the indications of the positive interest of the government and the people in environmental protection and development. It is hoped that these steps will bring desirable results in the future in sustaining precious natural resources of Bangladesh.

## References

- Ahmed Salehuddin (1996): Environment and Development, Rural Development in Bangladesh, Strategies and Experiences, Bangladesh Academy for Rural Development (BARD), Kotbari, Comilla, Bangladesh
- Bangladesh Poribesh Andolon (BAPA), <http://www.bapa.info/content/>
- Bangladesh Environmental Lawyers Association (BELA), [http://www.sdnpsbd.org/sia/partners\\_profile/bela](http://www.sdnpsbd.org/sia/partners_profile/bela)
- Farooque Mohiuddin and Hasan Rizwana S. (1996). Laws Regulating Environment in Bangladesh
- IGES (2002), Regional Strategy on Environmental Education in the Asia-Pacific, Environmental Education Project, Institute of Global Environmental Strategies, Kanagawa, Japan
- Sharafuddin M.A. (1991), Towards Sustainable Development Environmental Awareness and Education in Bangladesh. Ministry of Environment and Forest and IUCN. Bangladesh
- Sarkar Sanwar Hossain (2001): Status Reports, Bangladesh, Environmental Education in the Asia-Pacific Region, Institute for Global Environmental Strategies (IGES), Kanagawa, Japan
- Sharafiuddin A.M. and A. Atiq Rahman (1994), Environmental Education and Awareness, Environment and Development in Bangladesh, (Part-1) University Press Limited, Dhaka, Bangladesh