

Build up Environmental Citizenship through Environmental Education and Consciousness in Bangladesh

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ABSTRACT

Today's environmental problems are structurally anchored in our societies and our ways of life. Nowhere has this issue been so pronounced than in developing countries. In Bangladesh, rural people are arsenic contaminated and urban people are mostly exposed to the polluted water and air, recurring natural disasters and a dwindling natural resource base. It is one of the poorest countries of the developing world, with a low resource base, a very low land-man ratio, and is threatened by both natural hazards and overexploitation. However this resource base is under see threat and environmental planning is necessary to signal any hope for survival with dignity and sustainability. This collective action problem stems from years of public insensitivity and lack of genuine consciousness for environmental justice. In this paper, it is argued that, for Bangladesh to truly achieve sustainable environmental quality and protection, a formal environmental citizenship education and consciousness program should be established. In addition to poor and/or ineffective environmental regulations, it is further argued that lack of citizens' consciousness of certain environmental risks could be blamed, in part, for the country's poor environmental awareness education. A consciousness of environmental risk factors could galvanize citizens to capitalize on their social capital as a vehicle to address issues of environmental quality. Any environmental citizenship education and awareness program should be designed with the ultimate goal of promoting responsible environmental behavior.

Keywords: Environment, Bangladesh, Environmental Education and Consciousness, Environmental Behavior, Environmental Citizenship

INTRODUCTION

The world is now alarmed with various environmental problems. Many of these problems are the result of irresponsible and unplanned and poorly governed environmental behavior, which is highly influenced by the attitudes people possess. In other words, people's decision making is also guided by the values and attitudes they possess. Environmental attitudes are therefore a big concern in significant environmental education and awareness.

Sustainability is now one of the most widely used words in scientific communities and its associated education systems, particularly in the field of environment. Knowledge, either traditional or institutionalized from formal education, is an essential prerequisite to attainment of sustainability in human society and endeavor. The concern with sustainability itself is partly a product of the integration of ecology into the basic science curriculum of schools in developed countries for the last 30 years. Environmental education in developed countries has had significant impact on the quality of their environment and the well-being of their citizens; the developing countries continue to struggle for ways to achieve environmental sustainability. Environmental education is not new to majority of the developing countries. The need to make environmental education a focus of attention was first espoused by the 1977 Tbilisi Conference organized by United Nations Educational, Scientific and Cultural Organization (UNESCO) (Tbilisi Declaration, UNESCO, 1978). At its conference, UNESCO declared environmental education as a critical need for our global future. To that end, the following declarations were made:

- To foster clear awareness of and concern about economic, social, political, and ecological interdependence in urban and rural areas
- To provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment
- To create a new pattern of behavior among individuals and groups towards the environment.

Following this declaration, a new wave of environmental advocates began to shape environmental awareness campaign landscape. With increased attention to climate change and global warming, environmental advocates believe that the time is ripening to intensify efforts to utilize environmental education as a tool to engage the public on environmental consciousness. This argument is further supported by the following quotations from the North Carolina (USA) State of the Environment Report (2011): “More than ever, children and adults need to understand how ecological systems work and why they matter. Some people have become so disconnected from the natural resources which sustain their life that they do not know where their food comes from or where they get their drinking water. The health of the environment is inseparable from humans” well-being and economic prosperity and to successfully address and solve environmental problems; people require knowledge, tools and sensitivity.”

Developing countries were not immune from these campaigns. In 1981, the United Nations Environment Program (UNEP), through its governing council, developed several initiatives to address environmental education and training needs of the developing countries. With the urgent need to increase public awareness of the environmental issues, UNEP governing council authorized its Executive Director to collaborate with relevant international organizations and undertake several initiatives aimed at strengthening the knowledge and awareness of environmental issues in developing countries like Bangladesh. The prescribed means of achieving this goal included promotion, coordinating, and catalyzing environmental education and training activities.

OBJECTIVES

The specific objectives of this paper are following

1. Identify specifically the core environmental problems of Bangladesh
2. Explore the existing environmental education practices in Bangladesh as well as importance of environmental education for Bangladesh
3. Propose pro-environmental behavior for citizen of Bangladesh
4. Finally, way forward to promoting responsible environmental behavior in Bangladesh

STATE OF THE BANGLADESH ENVIRONMENT

For a long time, Bangladesh had a primarily traditional, pre-industrial economy. Despite their low productivity, an important virtue of traditional methods of production is that they are less polluting and more environmentally sustainable. To achieve higher productivity and growth, Bangladesh has for two decades striven toward industrialization, however existing industries tends to be environmentally damaging. The early industrializing countries (EIC), now in their post-industrial phase, are trying to repair the damage done to their environments and turning to environmental sustainability. Even newly industrializing countries (NIC) experience the polluting potential of industrialization. Hence, as Bangladesh proceeds towards industrialization, she needs to beware of the environmental impacts of industrial growth. There are several reasons why Bangladesh in particular needs to exercise particular care with industrialization and why her citizens need greater knowledge of environment.

- **Fragile ecology of Bangladesh:** Bangladesh is primarily a delta. The entire country is inter-connected through river systems and underground aquifers. For a considerable part of the year the land remains wet. It is revealed that aqueous environment makes ecosystem easily polluted, so it is risk factor for environment of Bangladesh to be get polluted easily. The flora and fauna of the country are delicate. It is very easy to damage and destroy Bangladesh's ecological balance.
- **Extreme Population Density:** Of all countries of the world, Bangladesh has the highest density of population, some small city-states excepted. Bangladesh's population density is already fifty times higher than that of the US and six times higher than that of China. With such extremely high density, any contagion arising in Bangladesh is sure to very rapidly affect millions of people. High population density also leaves very little open space and uninhabited terrain to cushion against environmental stress or shocks. Human

induced pollution loads are already close to or exceed that assimilative capacity of the environment. The high and increasing population density is itself a direct cause of environmental degradation.

- **Importance of Foreign Capital:** In its industrialization efforts, Bangladesh relies heavily on foreign capital. Foreign companies, generally in footloose industries like garment and footwear manufacture, do not usually have a long-term stake in Bangladesh's well being. They are more likely to be guided by short term profit goals. This increases the possibility of them making environmentally risky or damaging decisions. In 1997 an accident in a Magurchara gas exploration test well operated by an international oil company caused widespread damage when wildfire spread into surrounding forest. As Bangladesh prepares to set up export processing zones all around the country and to issue mining leases for further inland and offshore exploration by foreign oil and gas companies, potential risk to Bangladesh's environment is likely to increase. For example, recently earth tremors have increased in the Chittagong-Rangamati region. It is alleged that large-scale mining exploration activities are contributing to geological instability in the area.
- **Mass Poverty and Illiteracy:** Widespread poverty and illiteracy among the majority of people in Bangladesh increases the country's susceptibility to environmental damage. The general populace of Bangladesh is overwhelmingly preoccupied with meeting their basic material needs. Therefore they have little time or energy for concern about environmental amenities. High levels of illiteracy aggravate this problem, because illiteracy reduces the communication of complex information and acts as a barrier for them accumulate knowledge to understand the damaging impact of the environmental degradation that is occurring right around them on their own health. In the absence of popular protest, parties who pollute or damage the environment virtually have an open field.

All these factors lead to these conclusions:

- Bangladesh is particularly vulnerable to environmental damage.
- The only way Bangladesh can avoid environmental disaster is by through a strong and united, broad-based environment movement. This can only arise through mass environmental education and the emergence of local Bangladeshi expertise in appropriate and sustainable development.

How to build such a movement? First, the people of Bangladesh need to agree to the priority of environmental concerns and commence tackling them with the resources available, while also developing an effective, long term education and public awareness strategy.

SETTING OUR PRIORITIES STRAIGHT

If an opinion poll to identify the top priority issues for the 21st century were conducted among ordinary citizens of Bangladesh, it is unlikely that the environment would top the list. This is to be expected, given the low level of environmental awareness and the minimal level of environmental education available to people through schools and other institutions. I argue however that improvement of the state of the Bangladesh environment through environmental education is a pre-requisite for prosperous economic development. See for example the lack of educational policy in the Bangladesh Profile for the Johannesburg Summit, 2002 (United Nations, 2002). Only a better balance between environmental stewardship and economic development can guarantee a sustainable future and the well being of the country in the 21st century. The challenges of environmental issues in Bangladesh and the urgent need for sustainable development options require the development of environmental expertise capable of research, implementation and community education. This is only possible through effective environmental education programs.

IMPORTANCE OF ENVIRONMENTAL EDUCATION IN BANGLADESH

Environmental education is necessary not only to develop expertise which can contribute to policy making, but also to create a civil society which demands environmental accountability of its government and works with government in implementation. Government can easily draft and revise national plans for environment and sustainable development, using local or imported expertise. The far greater challenge is to effectively integrate

communication and education both for the short and longer term outcomes. The general aim of environmental education and communication is to encourage and empower the community to conserve the integrity and diversity of nature, and to ensure that natural resources are used in an equitable and ecologically sustainable manner. Education is commonly perceived as a one-way flow of information, usually in educational institutions, especially schools. However, environmental education can be two-way communication with full participation and learning by people of all ages. The educational process itself becomes sustainable when the participants take responsibility and lead the process themselves. Environmental education should not be confined to schools, but is an important tool for managers, civil servants, community groups and NGOs alike, enabling them to implement policies to protect the environment.

With the current state of Bangladesh's environment, one can unequivocally argue that most Bangladeshi citizens lack knowledge of inherent dangers associated with poor and unhealthy environmental. This is not to say that efforts have not been made to address environmental situation in the country. To argue that Bangladesh lacks some form of environmental education (EE) and awareness programs will be an understatement. Many environmental experts believe that environmental consciousness must begin in early age right from elementary school. To have this knowledge, teachers must be knowledgeable of environmental subjects themselves and be willing to impart that knowledge into the students.

The need to make Bangladeshi citizens aware of environmental issues through education is essential. Developing nations failed to see the need to aggressively promote environmental education and awareness. With this attitude, many citizens, especially those with little or no education do not see the value of environmental stewardship. An example of this is that a large number of residents of major cities in Bangladesh failed to dump their wastes in designated dumpster and throw these into streets and open waterways. One effective way for these residents to change their behavior is through environmental citizenship education. One effective way for these residents to change their behavior is through environmental citizenship education. This can only be realized if environmental education becomes a part of Bangladesh sociopolitical debate. Further, for any environmental education to be successful, it was suggested that such education must factor in the interest of the audience and that the program must be appealing to them.

From the above review, one can certainly suggest that environmental education and awareness campaign is not new to Bangladesh. However, one can also argue that this campaign has not been effective in reaching the majority of the population. To achieve this goal, a pragmatic and holistic approach is needed. This approach must involve not only the government and the media, but also non-governmental organizations (NGO) such as faith-based and non-profit community organizations. Changing people's environmental behavior requires both education and attitude change, and the role of civil society in this effort cannot be overemphasized.

ENVIRONMENTAL EDUCATION CONTEXT IN BANGLADESH

Some researchers argue that formal environmental education helps students to develop more favorable attitudes towards environment (Bradley et al., 1999; Ramsey & Rickson, 1976). Therefore it is reasonable to look at the environmental education context in Bangladesh within this study.

In Bangladesh, the education system consists of three major levels: primary, secondary and higher education. Primary level is a 5-year cycle and starts at age 6. Secondary education has three sub-stages: junior secondary (grade VI-VIII), secondary (grade IX and X), and higher secondary (grade XI and XII). In the secondary level, students choose their future study direction from the groups of Science, Humanities, and Business Studies. Students of Science group study three units of Science – Physics, Chemistry and Biology separately, while students of the other groups study an integrated science unit named General Science (National Curriculum and Textbook Board).

Although there is no particular policy document on environmental education in Bangladesh, in general, environmental education is introduced at the primary level in Grade III. At this level, two units deal with

environmental education named “Introduction to Environment: Science” and “Introduction to Environment: Social Science”. After the primary level, environmental education is provided to students through a multidisciplinary approach. Similarly, in the secondary level, environmental education is provided to students through different subjects, such as Language, Social Science, General Science, and Biology. These subjects deal with various themes relating to environment, even though no general objectives of secondary education explicitly states any direct emphasis on environmental education. At the secondary level, environment related themes are emphasized in the General Science unit, which is studied by students from the Humanities, and Business Studies group, which consists of almost 75% of the total secondary students.

Prior to 1996, environmental education in the tertiary sector was rather disjointed and poorly developed. In 1996 Khulna University first offered a 4-year undergraduate degree in Environmental Science. It was the first public university to offer environmental education in Bangladesh. Sylhet University (another public university) has offered a 4-year undergraduate degree Civil and Environmental Engineering since 1995. Some non-government universities have opened environmental education programs, such as Environmental Studies at North-South University (1995), and Environmental Science and Management at the Independent University (1996). Then Dhaka University and Jahangirnagar University (both public universities) opened undergraduate courses. In the environment courses described here, student enrolment is very competitive and places available are limited (only 25-40 students in each course). Prospective students need to pay expensive enrolment fees in the non-government universities, so only richer guardians can afford this education. However, facilities for research and fieldwork are inadequate in all of these universities.

In addition to these specialized courses all public universities in Bangladesh offer Ecology units in their B.Sc. and honors degrees with Botany or Zoology majors. At post-graduate level, there is a compulsory paper on Ecology in post-graduate Botany and Zoology programs. M.Sc courses in Environmental Management and Earth Science have been offered in Departments of Geography or Geology in some universities. Relatively better environment related units are offered in M.Sc. programs (sometimes undergraduate level also) in Bangladesh Agricultural University (BAU), Khulna University’s School of Life Sciences and the Civil Engineering Department of the Bangladesh University of Engineering and Technology (BUET). Environmental Engineering courses at both postgraduate and undergraduate levels are offered at BUET. Different engineering of Bangladesh also offer environmental engineering units within their undergraduate civil engineering courses. Polytechnic Institutes offer sanitary engineering units in the final year of three year civil engineering diploma courses. In addition, various institutes like the Public Health Training Institute, National Institute of Preventive and Social Medicine, Social Welfare Institute and Health Education Bureau also offer short-term sanitary engineering units for practising engineers, doctors, sanitary officers and social workers.

Among the numerous national NGOs engaged in non-formal environmental education in Bangladesh is the *Bangladesh Poribesh Unnayan Sangstha* (Bangladesh Environment Development Organisation or POUSH). POUSH launched a nature awareness program in its 50 non-formal primary schools. The program produced books for students, resources and training for teachers and guidelines for nature walks, visits to zoos and botanical gardens. Primary school teachers advised on the curriculum design and in turn use the materials published by the POUSH in primary schools run by the government.

BROAD BASED ENVIRONMENTAL MOVEMENTS: A POSITIVE SIGN OF ENVIRONMENTAL EDUCATION AND CONSCIOUSNESS IN BANGLADESH

Bangladesh is victim of one of the world’s worst environmental catastrophes. Poor rural people are dying of arsenic contamination in Bangladesh’s villages, and poor urban dwellers are exposed to heavily polluted air. Social justice demands protection of environment. Thus, for both economic growth and social justice, Bangladesh has to make environmental protection a high priority. However, it is clear from the continued environmental deterioration that these efforts are not proving adequate for the environmental challenge that Bangladesh faces. It is necessary to raise the efforts to an entirely different level. It is a mistake to think that the government will do all that is necessary to protect Bangladesh’s environment. If that were the case, then

environmental degradation would not have proceeded to this extent in the first place. Solution to environmental problems does not always require costly projects, which in Bangladesh tend to be donor-financed. Sometimes correct policies with proper implementation are what are needed. However, such policies will not always be adopted and properly implemented unless there is a social pressure to do so. It befalls upon Bangladesh's civil society (intelligentsia) to provide the leadership in generating such social awareness and pressure. The experience of the developed countries also indicates this conclusion. The improvements of environmental quality in the developed countries did not come about automatically. Numerous citizens' groups had to work hard to bring about these changes. It is because of their persistent work that a strong social pressure now exists in the developed countries for protection of environment. Both major political parties of the USA now take environmental issues seriously. In Germany pro-environment Green Party is now a coalition partner of the government. Environment is a high priority in other developed countries too.

A similar process has to unfold in Bangladesh. Environment has to enter the agenda of all sections of Bangladesh's civil society, professional and trade organizations, literary and cultural organizations, educational institutions and women and children's organizations etc. Journalists and other members of the media can be very effective in spreading awareness and mobilising citizen's action about environmental issues. Such a process will ultimately lead the Bangladeshi political parties also to become serious about environment. It is heartening to note that various sections of Bangladesh's civil society are indeed becoming more active about environment. The media, particularly the print media is giving more exposure to environmental problems. Many civic voluntary organisations are emerging with environmental protection as the goal. There are many ongoing movements focused on particular environmental goals, such as protection of Dhaka's greenery and lakes. There are environmental movements outside of Dhaka, in various districts. Some of these movements even proved successful. For example, responding to citizens' urging, the government has recently stopped the building construction in front of Parliament place. There are successes at district level too. These are encouraging signs.

Civil society of Bangladesh is no longer confined within the geographical boundaries of the country. A large and increasing number of Bangladeshis now live and work overseas. Revolutions in communications, particularly the advent of the Internet has made it possible for non-resident Bangladeshis (NRB) to participate actively in social and political life in Bangladesh, even to extending their cooperation to resident Bangladeshis (RB) in solving environmental problems. The Bangladesh Environment Network (BEN) was established with precisely this purpose. Through BEN environmentally conscious NRBs and local environmentalists work together in common cause against environmental degradation in Bangladesh.. This network has demonstrated basic principles of unity, self-reliance, volunteer spirit, and subordination of partisan interests to broader national interests. As these are precisely the qualities that Bangladeshi people want to see in their community organisations, this nascent environmental movement has a significance that goes beyond environmental concerns, and may in fact conducive of a process of social regeneration. Some of the notable environmental improvements that have been achieved since the inception BEN and suggestions for a National agenda for sustainable futures are shown below:

a) Eradication of the most polluting vehicles from Dhaka:

Air quality in Dhaka City has been somewhat improved by taking drastic measures. The air quality of Dhaka city steadily deteriorated up to December 2002, a major cause being three-wheeled auto rickshaws powered by two stroke engines. After widespread community pressure, the Bangladesh government ordered auto rickshaws is withdrawn from Dhaka roads. Since then, the air quality in Dhaka city has improved by as much as 25% at least partly due to the eviction of the polluting vehicles from the city (Islam, 2003). This is no small gain, but much more needs to be done before Dhaka can finally lose the distinction of being one of the most polluted cities of the world.

b) Save the Buriganga movement:

The Buriganga river flows through the heart of Dhaka, the capital city of Bangladesh. This river, historically considered the lifeline of the capital city, now faces the danger of a premature death owing to repeated failure to

conserve and protect the river since the 1970s. Since time immemorial, the lower part of Dhaka city has flooded during the monsoon season. To protect Dhaka's rapidly growing population and increasingly valuable infrastructure, the Dhaka-Narayanganj-Demra (DND) Embankment was constructed in 1988, providing a greater level of protection for Dhaka City from floodwaters from the Buriganga River. Since construction of embankment, the Buriganga has become encroached upon, not only by landless squatters as before, but by investors who construct major buildings. Although encroachment process has occurred since 1950s, it has accelerated under the physical protection afforded by the embankment. In this way, the entire riparian section of the Buriganga River in Dhaka City has fallen under the control of well connected and wealthy people. As a consequence, a section of the Buriganga River is alarmingly narrower by the encroachment process. In addition to encroachment, the Buriganga River has received untreated solid waste, industrial and municipal untreated waste-water and other contaminants for generations, but this too has exceeded the assimilative capacity of the river system. In this situation, members of the community and non-resident Bangladeshis, including academics, journalists, scientists, teachers, and some NGOs are now organising a mass movement to save the Buriganga from these multiple threats. This community of concern made repeated pleas to the government to save the Buriganga, but the authority did not take effective action against encroachment and pollution until 2000. Eventually, the resident and non-resident Bangladeshis formed a committee under the name 'Save the Buriganga Movement'. Members of Save the Buriganga Movement have conducted mass-scale rallies and processions to call for removal of encroaching structures and to stop the pollution. Finally the government agreed to take the effective action against the encroachment and pollution in the beginning of 2000. Eviction actions are in progress at the time of writing.

c) Actions to protect heritage parkland in Dhaka:

Osmany Uddyan, the vast green park in front of the Bangladesh Government Secretariat was planned as a national 'Eco-Park' with open space for the recreation of city dwellers. In the last decade, it has been steadily encroached upon and used for commercial purposes. Not only hawkers, but also public transports such as minibuses handcart operators have occupied a section of the north-eastern side of the park. Similar encroachment has occurred in many other sites of significant natural and cultural/historical heritage in Bangladesh. As a result of increasing environmental literacy, and capacity of communities to organise, pressure of mass movements has resulted in the government taking steps including halting construction of a house for the Speaker of the National Assembly in open space in front of Bangladesh Parliament.

Upon a writ filed jointly by the Bangladesh Poribesh Andolon (Bangladesh Environmental Movement) group and the Institute of Architects, Bangladesh, The High Court issued an interim stay order was issued. The Plaintiffs allege the construction project not only violates the 1973 master plan of famous architect Louis Kahn but breaches the Building Construction Act 1952, the Town Improvement Act 1953, and the Lowland and Open Space Protection Act, 2000. The order asked the government to make sure no further unnecessary and thoughtless construction beyond the 1973 master plan takes place in the Parliament Building Complex. The order also added, the government should explain why appropriate legal measures should not be adopted to prevent encroachment on the complex. Finally, the bench asked question to the government, "Why the complex should not be declared a national heritage site and why it should not be directed to apply to the UNESCO to declare the complex a World Heritage Site".

d) Ban on indiscriminate use of polythene bags:

The use of plastic bags is relatively a new phenomenon in Bangladesh. They only began to appear in the mid 1980s. Within a few years, they became popular largely because they were cheap and very practical. Some people invested in polythene bag manufacturing units. The low-cost investment and the huge profits (such as almost six times the production cost) resulted in massive growth of the industry within a few years. The number of factories rose from 16 in 1984 to more than 300 in 1990. It has been calculated that about 9.3 million bags were thrown away in Dhaka City each day during 1999-2000. As Bangladesh has a serious problem with waste collection and management, plastic waste tends to be disposed of in the streets due to lack of environmental awareness and education. According to Salequzzaman *et.al.* (2000), only 10-15% of the daily wastes are put in rubbish collection bins, the remainder ending up in drains, sewerage channels and open spaces. Polythene bags

cause 80% of blocked drains in Dhaka. In most Bangladesh municipalities and urban cities the majority of drains are essentially open sewers, so they are easily littered and blocked with the non-degradable waste like polythene bags. In a flood-prone country like Bangladesh, blocking of drains by polythene bags severely exacerbates many problems, such as sewer water being forced into drinking water supplies during floods. This in turn leads to outbreaks of diarrhoeal and other water-borne diseases. Recognising these problems, environmental groups of Bangladesh waged long-term environmental campaigns against the use of polythene bags since 1998. The Bangladesh government finally banned production and use of polythene bags on March 1st 2002.

These four examples of community mobilization for public environmental benefit demonstrate the capacity of the community to recognize environmental issues and commit time and resources to work for change. They also suggest that from grassroots communities to political elites, environmental awareness has entered the national conscience, but there is need for a greater level of environmental knowledge and skills for ecologically sustainable development. In the early post-independence phase of Bangladesh history, there was a major push to develop teachers and agricultural professionals who could contribute to national development. In more recent years the priority has widened to include engineering and technology as the goals moved beyond food autarchy to industrial competitiveness. The community is now aware that economic development cannot come at the expense of environmental sustainability, but there is an urgent need for expertise and knowledge to wrestle with the complex environmental issues facing the nation.

PRO-ENVIRONMENTAL BEHAVIOR

Responsible environmental behavior is an essential element of any environmental sustainability effort. Regardless of the number of environmental regulations, policies and rules, no significant environmental achievement would be realized if people's attitudes toward the environment are not changed. Environmental behavior study has been a major focus of many researchers, including Hungerford and Volk, (2005); Marcinkowski, (2005); Culen, (2005); and Kollmus and Agyeman, (2002). All these writers believe that knowledge of and attitude toward the environment influence environmental behavior. Their belief is in congruence with the goals and objectives of the United Nation's Intergovernmental Conference on EE held in Tbilisi in 1977. At this conference, it was affirmed by government attendees that changes in behavior were necessary and should be of importance to environmental education. What exactly is "responsible environmental behavior" (REB)? Kollmuss and Agyeman (2002) defined REB as "behavior that consciously seeks to minimize the negative impact of one's actions on the natural and built world". Marcinkowski (2005) cited Van Liere and Dunlap's (1981) definition as "activities that have been suggested as ways people can help solve environmental problems". Given these definitions, the development and promotion of responsible environmental behavior should then be the ultimate goal of any environmental education programs. Environmental education curriculum must be designed to influence and/or change students behavior toward the environment. As Culen (2005) puts it, "Curricula that provide the necessary knowledge related to the issues, tools to adequately analyze and evaluate issues, and skills to help resolve issues are essential. These ingredients are proven links to success in promoting environmental behavior."

To further explain pro-environmental behavior paradigm, Figure 1 presents an early model of Pro-Environmental behavior commonly referred to as Behavioral Change System. Figure 2 presents a model of Responsible Environmental Behavior. In Figure 1, it is postulated that knowledge creates awareness or attitudes about the environment and its associated issues. This awareness or attitude then leads to people to take action. Thus, the thinking is that when people are made more knowledgeable about an environmental issue and its associated consequences, they tend to act toward the environment in a more responsible way.

The Hines model (Figure 2) is based on the premise that people will act on environmental issue only if they are cognizant of the existence of such issue. This means that knowledge of an issue is a criterion to action. Another important component of the model is individual's skill to apply the acquired knowledge to solve environmental

issue. Also equally important is individual's motivation to act. This is often affected or controlled by personality factors such as locus of control, attitudes (toward environment), and personal responsibility. While the model framework is valid to certain extent, there appears to be other factors that tend to affect how people behave toward the environment. These factors are what Hines et al. (2002) called "situational factors". Included in these factors are economic, constraints, social pressures, and opportunities to choose different actions. Similarly, it has been argued that despite the knowledge of environmental issues, certain barriers often prevent people to act responsibly toward the environment. These barriers are individual in nature and they tend to be associated with person's attitude and temperament. The barriers include individuality (e.g. laziness or lack of interest), responsibility (e.g. lack of trust or lack of efficacy), and practicality (e.g. lack of money or time) (Blake, 1999 as cited in Kollmuss and Agyeman (2002). Thus, one's proclivity towards environmental stewardship can be outweighed by other conflicting desires or attitudes.

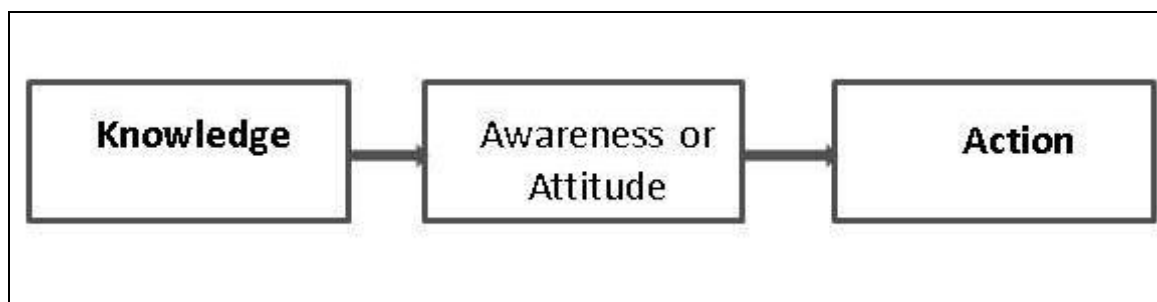


Figure 1: Behavioral change system (adopted from Hungerford and Volk, 2005)

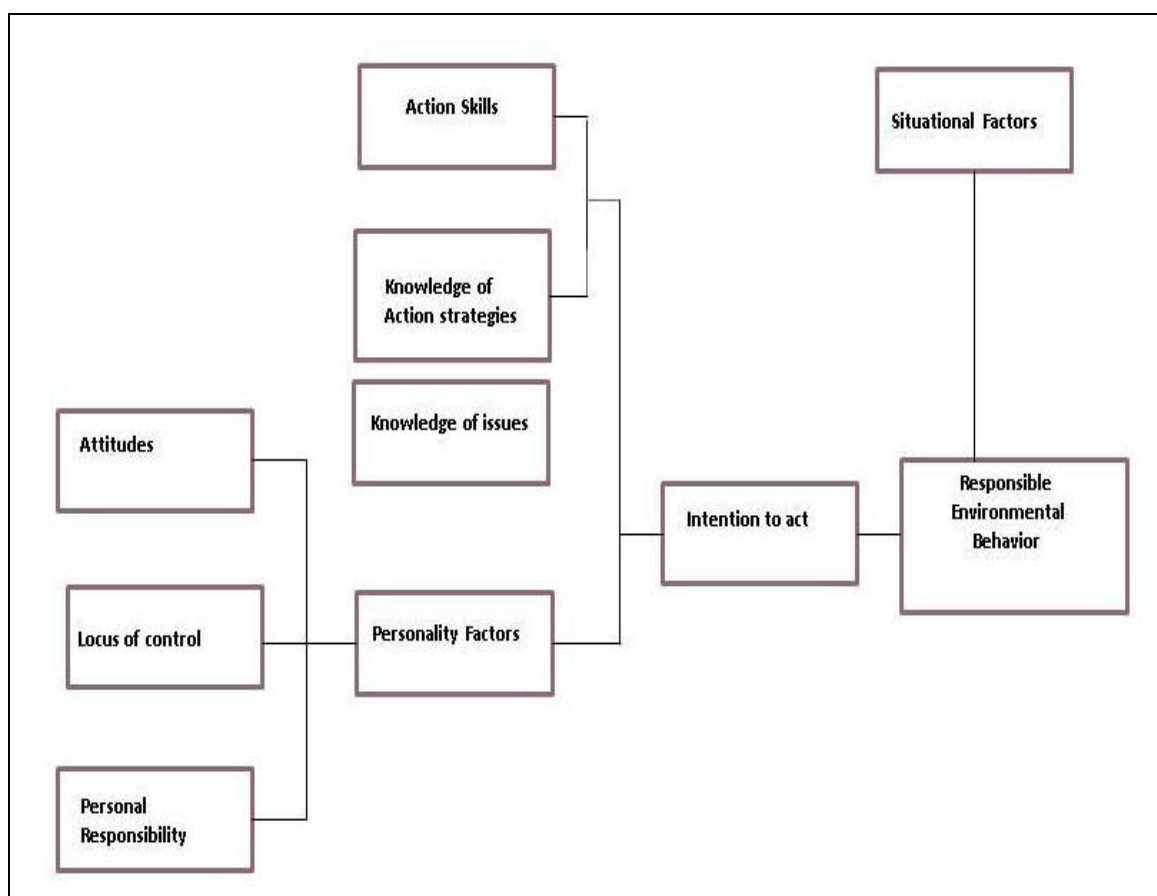


Figure 2: Hines Model of Responsible Environmental Behavior (Adopted from Hines et. al. 1986/87)

PROMOTING RESPONSIBLE ENVIRONMENTAL BEHAVIOR

Undoubtedly, education is needed to change how people's behavior towards the environment. To change people's behavior, environmental education should not be limited to conventional campaign and traditional education methods. Evidence suggests that other alternative approaches or methods have been used successfully in changing people's behavior toward the environment. Before we discuss any approach, it is imperative that we discuss the benefits of environmental education (EE). Some of the benefits are:

- EE increases citizen's knowledge and awareness of the environment and the associated challenges.
- EE allows people to understand how individual actions affect the environment. This knowledge enables them to be better equipped to weigh various sides of the issue and make informed decisions
- Through environmental education and awareness, community residents are able to organize and develop a course of action aimed at combating environmental injustice.
- EE may in fact bring lasting solution to the environmental problems people face every day, by taking proactive measures that limit environmental degradation
- EE enhances people's skills and motivation to deal with emotional and psychological problems often caused by environmental injustice.
- EE promotes responsible environmental behavior by changing people's negative attitudes about the environment.
- EE enables children to acquire the fundamental knowledge of the environment and the need to develop pro-environmental behavior at the early age.

Any EE program should be designed to achieve all of the listed benefits. How do we increase the level of awareness among the citizens? As stated earlier, environmental citizenship education should use other alternative approaches in combination with traditional methods. One such approach is referred to as Community-Based Social Marketing. This approach takes a different look at how people change their environmental behavior. Having used it successfully in anti-smoking and AID awareness campaigns, the proponents of this approach argued that, in contrast to traditional education methods, it has been proven to be effective in shaping people's environmental behavior. Social marketing approach "starts with people's behavior and works backward to select a particular tactic suited for that behavior".

Another approach to increase environmental awareness is through the civil society. The civil society, which includes NGOs, Faith-based organizations (FBO), and Community-based organizations (CBO) have been found to be very effective in advocating for cleaner environment.

While community-based organizational approach has been used successfully to address environmental issues in developed countries, its effectiveness already showed in developing countries like Bangladesh. This is not surprising, considering the level of poverty in most developing countries. For example, empirical evidence suggests that environmental injustice in Bangladesh is based on economic class. Poor and less educated communities are magnets for environmental hazards. The environmental injustice that is often inflicted on poor communities would not be tolerated in affluent communities due to their social capital. The lack of social capital in poor communities often presents barrier to environmental awareness. Because residents of poor communities are trapped in cycles of low education and poverty, they spend most of their energies in search of means of livelihood, while ignoring environmental issues. Their economic conditions further prevent them from recognizing environmental injustices in their community. Furthermore, limited or non-existent environmental advocacy in poor communities reflects lack of community organizations, lack of networking capabilities, weak values and high transaction cost associated with mobilizing voluntary action.

In order to promote environmental sustainability, community residents must be encouraged to organize a neighborhood advocacy group, through the establishment of formal community organizations. Through their social capital, active community organizations have shown to be more responsive in addressing issues of environmental quality. Organizing community advocacy group has other advantages towards combating environmental injustices. First, there is opportunity for networking between other community organizations. These mutual networks allow sharing of ideas and strategies that individual organization can use to address environmental quality in their respective communities. The relationship that is formed through the networks also

increases environmental awareness of individual community resident. Next, to reduce transaction cost, the network of community organizations can co-sponsor community environmental education events that disseminate information that creates awareness and improve pro-environmental behavior. One case study where community-based organization has been used successfully to address environmental issues involves that of Kutch Mahila Vikas Sangathan (KMVS) in Gujrat, India. KMVS is an organization of rural women living in the arid border villages of Kutch District, Gujarat. The organization was founded in 1989 and includes more than 1200 members. Members provide a range of projects aiming at supporting rural women, articulating their concerns and initiating new action to improve their lives and economic situation. A major focus of KMVS is ecological degradation and income generation. This type of advocacy group can be established in other developing countries. All it takes is ability to organize and implement result-oriented actions.

It would suffice to recognize the new wave of environmental advocacy group that is leading the pro-active environmental awareness campaign in Bangladesh. Last, but certainly not the least approach to increasing environmental awareness is Media campaign. This approach has been used by various news media for quite some time and we suggest that it should continue with concerted efforts to reach a diverse group of rural residents. According to Foei (2007), "Climate change issues [in Nigeria] have a higher profile in newspapers and other mass media, and stakeholders from various social sectors are discussing and debating the issue.

CONCLUSIONS AND RECOMMENDATIONS

Bangladesh presents unique challenges to the search for ecologically sustainable development with a very high population density, a still high population growth rate and limited natural resources. Issues of development and conservation take an added significance for this country. A significant program of environmental education and development of local expertise is needed for massive changes in behavior with respect to the environment.

In this paper, it is discussed the importance of environmental citizenship behavior. Also, discussed how pro-environmental behavior could be promoted to achieve optimum environmental stewardship. There is no doubt the existence of environmental awareness initiatives in Bangladesh; however, it is strongly felt that a poor level of environmental sensitivity exists among the citizens. In spite of the government and non-governmental organizations' efforts to promote environmental consciousness, many Bangladesh citizens are still far-removed from practicing responsible environmental behavior. In this regard, more needs to be done to inculcate the citizens towards environmental stewardship. Any environmental citizenship educational program should include quality assessment benchmark with the primary objective that the program itself meets the goals and objectives of environmental stewardship. Through assessment, evaluators should be able to determine the extent and quality of the environmental education curricula, the level of skills and preparedness of environmental outreach educators, the quality of instructional materials, and the degree to which a broader audience is included in the outreach activities. To be effective, an environmental citizenship education program must include a plan that integrates the efforts and participation of both government, private, and non-profit organizations. The degree to which previous environmental outreach activities increase the citizens' knowledge and awareness of a particular environmental issue is critical to the success of future educational programs. Following are additional recommendations to increase the citizen's knowledge and awareness of the environment and the necessary steps to take to ensure sustainable environmental quality and protection.

- Raise the level of environmental literacy of the Bangladesh youths by incorporating environmental education into elementary and secondary school curricula. Environmental knowledge at these levels would enable the students to analyze various environmental issues and make informed decisions.
- Where it is currently available, the quality, accessibility, and dissemination of promotional materials and programs should be improved.
- The Government of Bangladesh should develop a strategic approach to Environmental Education and establish a policy framework to support requirements for sustainable development.

- Effective policies will enable delivery of environmental education that is tailored to the educational level and the life context (eg.urban/rural) of participants, local issues and integrates traditional wisdom. It will enable participants to 'learn by doing' in their own environment
- Existing environmental education curricula for primary and secondary schools needs to be upgraded to clearly indicate the priority issues.
- In addition to integration of environmental education into the compulsory school curriculum, lifelong environmental education needs to be encouraged to enable government institutions and the private sector to constantly update knowledge and skills.
- Government should establish competitive outcome-based research grant programs through its environmental agency to support higher institutions and other environmental-related centers to carry out empirical environmental-related research.
- All sectoral policies, programs and projects should include environmental education as an integral component.
- Government should support professional development programs for environmental educators at primary through secondary school levels. These programs would allow the educators to sharpen their skills in teaching environmental concepts to school children of all ages.
- Environmental Education programs should be designed to facilitate the participation of competent local NGOs and CBOs (community-based organisations) and not just be biased towards major players.
- Environmental education should be promoted as a viable career option among school children.
- Government should conduct a yearly assessment of public environmental knowledge
- Government should enforce existing environmental laws and hold extractive organizations accountable for their role in depleting the country's environmental resources.
- The government should establish a new Environmental Cadre in the Public Service Commission (PSC) in Bangladesh. Like other technical Cadres, it would recruit appropriately qualified graduates directly into the PSC, where they should be deployed across agencies.

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