

# Environmental Philosophy in the Context of Bangladesh

by Md Khalequzzaman

*Nothing can be said more succinctly than what the Chief of Mohawk Red Indian tribe said, "Not until the last tree has fallen, the last river has been poisoned, the last fish has been caught, will man realize that money isn't edible." We need to act to preserve the only habitable planet before it is too late.*

BANGLADESH is facing a tremendous challenge as it stands at the doorstep of the 21st century. The country's economy is in disarray; the political instability has become a part of everyday life; the college and university campuses have turned into battle grounds; the security of ordinary citizens is threatened; the natural calamities are rampant; and the quality of water and air has become unacceptable by world's standard. Most of these problems have existed in Bangladesh in the past. However, there is no sign of improvement in the sight, and the degree of deterioration has reached an alarming proportion. Many would argue that achieving political stability and economic prosperity should be the top two priorities for Bangladesh in order to provide a decent life for its citizens. Other issues of import would be the improvement of health and education, and the state of the environment. While all of the issues are important and deserve attention, some are more important than the others, because they are contributing to a crisis situation and are posing a threat to our well-being. The people of Bangladesh need to set their priorities straight and act upon them immediately.

**Setting our priorities straight:** If a gallop poll were conducted among ordinary citizens of Bangladesh to identify the top priority issues for the 21st century, it would probably be unlikely that the environment would top the list. This is to be expected, given the degree of environmental awareness and the average level of education on environmental issues that is available to people through schools and other institutions. I would, however, argue that in Bangladesh, the improvement of the state of the environment is a pre-requisite for prosperous economic development. Only a balance between the environment stewardship and economic development can guarantee a sustainable future and the well-being of the country in the 21st century.

**Environmental stewardship vs. economic development:** The environment is comprised of physical (air, water, soil, mineral resources, light, and temperature) and biological (plants and animals) realms. The term "ecology" encompasses a complex interaction and the delicate ecosystems within which humans exist. Our dependence on the environment has both a short-term component and a long-term component. On one hand, since we breathe air, every minute of our life literally

depends on the environment. On the other hand, the role that other components (such as, mineral resources, temperature, plants, etc.) of the environment play is not always very obvious within the time frame of the human life-span. Quite often the long-term consequences of particular human activities are overlooked in the interests of short-term gain. Mineral resources extracted from the earth's crust are the basis for civilization. Rocks and minerals are the raw materials for most of the industrial products that we use everyday (oil, gas, coal, construction materials, fertilizers, metals, rare earth elements, and radioactive elements are just a few to name). In other words, most of the products that we use to maintain the standard of living and comfort come from the environment. Therefore, economic development is just another term for exploitation of the environment. Unfortunately, most environmental components have a finite amount (i.e. non-renewable) within a human life-span, non-uniform distribution, and limited carrying capacity. It is for this reason that we need to understand the dynamism and the fundamental principles that govern the environment.

A better understanding of the fundamental principles and the underlying philosophy that govern the balance between components of the Earth's ecosystem can help us achieve economic development while safeguarding the environment. These philosophical concepts help us better comprehend the way our planet works, as well as will help us evaluate the extent and limitation of earth resources that are needed to attain a sustainable future. In the following few paragraphs those principles will be explored in the context of Bangladesh.

**Everything affects everything else:** The environment is a part of the "earth system", which has four interrelated components, namely, the lithosphere (the earth's outer layer), atmosphere, hydrosphere (surface and groundwater), and biosphere (plants and animals' realm). The interrelationships of various components can be demonstrated with the example of flooding in Bangladesh. Flooding is a natural phenomenon, which is a part of the hydrologic cycle (hydrosphere). Human activity (in the biosphere), such as deforestation or soil erosion due to tillage, can reduce the water carrying capacity of rivers, causing more floods. Also, increased amounts of greenhouse gases in the atmosphere will re-

sult in increased temperatures, causing more evaporation, precipitation and floods. Volcanic eruptions (in lithosphere) can melt snow (in hydrosphere) in the mountains, causing more floods. The above examples demonstrate how all components of the earth system are interrelated. Many such examples can be drawn upon to elaborate on this point.

The earth is a dynamic planet that has maintained a delicate balance through time immemorial. Any external stress imposed upon the Earth's ecosystem can result in an imbalance among its components, much like a motor engine that would malfunction due to improper handling or mismanagement of its components. Humans are part of the ecosystem, but depend on all the other components for their survival. Although the human species appeared on Earth only recently on a geologic time scale compared with the age of the earth, they have already proven to be a major denominator in many spheres of the environment.

Humans have accelerated natural changes in the environment at a rate faster than ever before. During the last few decades the earth ecosystem has manifested many signs of unbearable imbalance in its environmental components. Examples of such signs of imbalance, as demonstrated by nature's fury, would include the increased rates of: (a) recent major flooding in Bangladesh (in 1988, 1993, and 1998) and elsewhere; (b) water pollution (arsenic contamination of groundwater in Bangladesh is the largest mass poisoning case in the world); (c) sea-level rise and coastal erosion (Bangladesh will be the most affected country should the sea-level continues to rise in the future); (d) soil erosion and desertification (northwestern region in Bangladesh is experiencing desertification); (e) cyclones (Bangladesh was hit by 7 of the 10 most devastating cyclones in the world during the last 100 years); (f) tornadoes (more than 100 severe tornadoes hit Bangladesh during the last 100 years); (g) air pollution (quality of air in Dhaka is the worst among the major cities in the world); and (h) decline in bio-diversity (along with other

rare species, the number of the Royal Bengal Tigers in the Sunderbans is on decline); (i) salinity intrusion in the coastal areas in Bangladesh and elsewhere; (j) depletion of the ozone layer; (k) global warming due to an increase in greenhouse gases; and (l) El Nino and La Nina.

**The carrying capacity of the earth is limited:** Exponential growth of population is the root cause of most environmental degradation. The world's population has tripled during the 20th century. Life expectancy has almost doubled during this time. The world economy, fuel consumption, industrial activities, and energy consumption have increased by as much as 20, 30, 50, and 80 times, respectively during the last hundred years. This increase in population has already exerted a tremendous stress on the Earth's ecosystem, depleting many of the earth's non-renewable resources (e.g. at the present rate of consumption, the earth's oil/gas reserve will last for 25 more years); and causing environmental degradation as mentioned above. The size of the world economy will have to increase by five times to support the increasing population at the present standard of living. The resources and land needed for such economic growth are just not there. The rate of increase in population in Bangladesh is even higher than that of the world's average. The carrying capacity of Bangladesh is well above the normal average. The density of population in Bangladesh is 50 times higher than in the United States. It is a scary scenario. The rate of population growth in Bangladesh will have to decline substantially for us to be able to strike an environmental balance while still maintaining the kind of decent life that any human being deserves.

**Sustainability is not enough, prosperity is needed:** Sustainable development calls for maintaining the present standard of living while safeguarding the environment. However, simply maintaining the current standard of living should not or cannot be the ultimate goal for our future generations, for it will mean "no progress." Humans have always striven to improve their standard of living compared to

that of their predecessors. Doing better than what was possible in the past is the driving force behind progress. What we need, therefore, is not sustainability, but potential for prosperity. This should translate into a prudent use of the earth's resources, as well as an improvement in the quality of the environment. Discovery of new resources, energy sources, and innovation in the use of alternative resources can help us achieve this goal. Bangladesh should develop nuclear energy and solar energy to produce electricity, and to meet other energy needs of the country.

**Clean air, water, and land are human rights:** All people have a right to a clean environment. Material wealth, such as the guarantee of food, employment, subsistence, education, and health, will not make human life worthwhile without having clean air, water, and land. To achieve this goal, Bangladesh needs to implement stricter laws to control solid waste, industrial waste, medical waste, and sewage sludge disposal. All municipalities need to have garbage collection services and sanitary landfills or incinerators to control solid waste disposal. In addition, implementation of sanitary toilets in all villages should be a primary requirement to keep both surface and groundwater clean. All chemical and liquid wastes need to be treated before disposing in rivers and streams as effluents. Recent incidences of ammonia contamination of rivers by the Ghorasal fertilizer factory, trace metal contamination of soils by the Hazaribagh tannery, arsenic contamination of millions of tube wells, and lead contamination of air will become catastrophic in proportion if no mitigation measures are taken. To reduce environmental degradation caused by point-sources of pollution (such as, industrial and medical sources of contamination), the "polluters-pay-policy" (PPP) must be implemented. Moreover, a better land management practice will be necessary to control non-point sources of contamination, such as arsenic, fertilizers, animal waste, detergent, and pesticides. These higher environmental standards will be costly to Bangladesh in the short term, but in the long term less costly

than contending with more drastic environmental remediation and the destruction of major natural resources. These policies are often hard for elected politicians to sell to a population which is already faced with financial hardship. Only by educating the public on the need for immediate action, and on the connection between their survival and environmental stewardship will this be possible.

**Effect of land-use is cumulative:** Gradual degradation of the environment eventually will lead to catastrophic consequences. For example, every time we build a new house or a road on the floodplain, we reduce the total run-off area and groundwater recharge area, which result in an increase in flooding propensity or in decline in the groundwater table. Filling up of the lakes (e.g. the recent incidences of encroachment onto and land-grabbing of Gulshan-Baridhara lakes in Dhaka by the Rajuk) and rivers by dumping sediments for development reduces the water carrying capacity of a drainage network, causing water logging and extended flooding in an area. In order for us to be able to reduce the flooding propensity in Bangladesh, we have to control building on the floodplains. Also, deforestation due to development leads to increased soil erosion, decline in bio-diversity, increase in flooding, decline in groundwater recharge, and increase in carbon dioxide (a greenhouse gas) in the atmosphere. In Bangladesh, lateral spread of development should be contained as much as possible by implementing more environmentally-sound development, such as cluster housing and compact township. New development for housing, roads, shopping malls, or offices will have to be vertical, i.e. multi-storied. New laws and regulations need to be developed and strictly enforced to control lateral development onto the floodplains. Planners and developers must produce an environmental impact statement (EIS) for their planned land-use activities. The EIS should include alternative plans, as well as cost/benefit analysis, which should be reviewed by the general public and independent experts in the field before implementing.

**Most environmental problems are related to Earth processes:** Many environmental problems result from human interactions with natural processes, extent of which do not conform to political boundaries. Natural processes cannot be prevented. However, a comprehensive understanding of these processes can allow us to effectively plan land-use and thereby mitigate their effect. For example, flooding in Bangladesh is but a part of the overall hydrodynamic process that is active in the Ganges-Brahmaputra-Meghna watersheds. Bangladesh comprises only 10 per cent of the watershed, and is located at the receiving end of this basin. Since Bangladesh is a small part of a bigger hydrodynamic system which consists of several countries in the region, a mutual understanding and cooperation among the riparian countries will be necessary in order to formulate any long-term and permanent solution to the flooding problems. Arsenic contamination of groundwater in Bangladesh is just another example of a geologic problem that owes its origin to areas beyond the confines of Bangladesh. Therefore, any clean up measures for these aquifers could be futile, since Bangladesh is located down-gradient of the greatest concentrations that contain water. However, further research may prove otherwise.

**Multiple and aesthetic uses of land:** Because of the scarcity of land, any land-use planning needs to be designed for more than one purpose, when and if possible. For example, a lake in a residential area can have multiple purposes: (a) water sports, (b) fishing, (c) groundwater recharge basin, (d) recreational park, and (e) flood control reservoir. Another such example can be the usage of dredged silt from rivers. The dredging of rivers can: (a) improve water transport, (b) reduce flooding propensity, (c) supply sand for building and road construction, and (d) supply sediments to elevate roads and villages, which in turn can reduce flood damage. In addition, dredged sands that are enriched with iron hydroxides (e.g. red sand from Barind Tract, Madhupur Garh, and Brahmaputra-Tista basin areas) can be used as liners in ponds to reduce arsenic contamination in surface water. However, further research will be necessary to study the feasibility of such usage of red sands.

**Recycle-Reuse-Reduce:** This is the most fundamental slogan for environmental awareness. Most Bangladeshis recycle

newspapers, aluminum utensils, and glass bottles. However, an integrated plan is needed for a nation-wide recycling plan for everything that is recyclable. Proper environmental education, workshops, training, and publicity can increase awareness about reduction in the use of commodities through the basic concept of recycle-reuse-reduce.

**All species have the equal right to survive:** According to the "Gaia Hypothesis" put forward by "Deep Ecologists", all flora and fauna are nature's creation and have an important role to play in the intriguing web of life. All species have an equal right to survival. Human activities have already driven many species from the surface of the earth. Only a few years ago most jungles in the villages of Bangladesh were rich in biodiversity. For instance, hedgehogs, weasels, lizards, cheetahs, parrots, owls, etc. are now almost extinct. Stricter environmental laws and better awareness are necessary to save all species before they are extinct. This is primarily a result of loss of habitat. This issue will have to be addressed by setting aside sensitive parcels of land for bio-diversity and by encouraging the reclamation of certain habitats through re-introduction of the near-extinct species in those protected sanctuaries.

**The star thrower:** According to an American folk story, two friends were walking on the beach after a coastal storm that washed thousands of starfish ashore. As they walked, one of the friends started to pick up starfish one by one, and started to throw them in the water. The other friend said, "There are thousands of starfish on the beach, what difference will it make if you throw just a few in the water?" His friend picked up another starfish and said, "It will make a difference for this one. All of us can be a 'star thrower' even in a small way. Everyone can make a difference. Collectively, we will make a big difference."

**Money is not edible:** To summarize, nothing can be said more succinctly than what the Chief of Mohawk Red Indian tribe said, "Not until the last tree has fallen, the last river has been poisoned, the last fish has been caught, will man realize that money isn't edible." We need to act to preserve the only habitable planet before it is too late.

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# Combating Deforestation through Community Forestry

by Naved Ahmed Chowdhury



ENVIRONMENTAL degradation, evident in many countries today, is often the result of conflict over access to forest resources within communities, between communities, and between communities and outside entities.

People in forest-based communities compete with one another for scarce forest resources for a variety of domestic uses while at the same time growing needs of local rural and urban areas and of world markets have led to commercial exploitation of these same forests. Competition-led conflicts are invariably complex because the different forest products have many different users, and decisions about use have long term effects.

When national-level decision and policies dealing with common resource management are made, they often ignore traditional rules of land and tree tenure. Growing inequity of access, as well as lack of confidence in future access, cause people to cut down forests and resist conservation efforts, as some individuals act in their own immediate interests rather than the community's long-term interests.

The case of rural deforestation in developing countries is a good example where complex interaction between social structure and the ecological system in which it is embedded can lead to unsustainability.

There are many reasons for deforestation in the developing countries like Bangladesh: poverty, population growth, modernisation, scarcity of land and migration of people to virgin forests in search of land (the Sunderbans), conversion of forest and pastures into cultivable land to feed increasing population, wasteful and unsustainable commercial logging facilitated through unabated corruption, misguided government policies in exploiting forest resources and slash and burn cultivation of the migrating landless people, etc.

**Sustainable Development and Forestry**  
For Bangladesh, forests represent one of its most important economic asset. They are not only home to millions of people but also provide wood for fuel, timber for domestic construction, rattan, honey, bamboo, fuel and fruits which make

important contribution to its economy. With deforestation, the production of these products are reduced significantly and thus the economy suffer. Forests also provide desperately needed jobs for the local people.

The forests also represent important factors for lessening floods and deforestation. The density of trees and layers of leaves reduces the temperature inside the forest, allows humus to propagate, lessens the impact of heavy rainfall by stopping absorption of rainwater, thus stopping floods downstream and preventing desertification.

## Deforestation in Bangladesh

The forest area in Bangladesh has been reduced by more than 50 per cent over the last 20 years. It also has one of the lowest forest land/population ratios in the world. Land is an extremely scarce resource in Bangladesh and agriculture, industries, and human settlements are competing for this land. In recent times large areas of rain forests are being cleared in the south of the country for shrimp cultivation which is mainly exported overseas.

Forests play an important role in Bangladesh. The rural people are dependent on the forest for their fuel, food, fodder and building material. Forests contribute 3 per cent of GNP and 2 per cent of the employment in Bangladesh.

Two hundred and forty-five million ha or 17 per cent of the country's total land area is either forested or 'considered' forest land. The actual area that is under tree cover is about half. About 90 per cent of the forest government owned and the rest is privately owned village forests. The annual deforestation rate is estimated to be 8000 ha.

shifting cultivation thus causing total destruction of these forests. The mangrove forests in Bangladesh are mainly the Sunderbans and some coastal plantations. The Sunderbans are considered to be one of the richest tropical wildlife habitat in the world.

Mainland forests cover 4.9 per cent of the forest land of Bangladesh and these forests are generally degraded and have very low productivity. The remaining 11 per cent are village forests and these are exclusively owned by the private citizens. These forest are also the most productive 90 per cent of all fuel consumed, 80 per cent of the bamboo and about 70 per cent of all the logs cut down in the commercial establishments come from village forests.

## Government Forestry Policies

A brief analysis of government policies of Bangladesh concerning uses and protection of their subsequent resources and their subsequent failures is necessary. Not only have they failed environmentally in lost resources and but also lost large revenues through misplaced considerations, concessions and incentives in order to protect timber and wood processing industries.

**Private Property Rights:** As we have seen almost the entire forest area in Bangladesh is

owned by the government. The property rights of the forests are defined but since legal system is inefficient and there is very minimal enforcement, so nobody respects these rights. This clearly is an example of the "tragedy of the commons". This means people around the forests see it as open access property and there is no incentive to protect it. As everyone is only concerned about maximising his own benefit, the economic and social values of the forest is not respected by anyone and as a consequence the forest deteriorates through encroachment.

**Rent Seeking:** The underpricing of timber sold to government owned industries, mainly to paper industries can lead to overharvesting. Bangladesh has mainly two predominant paper producing factories-Khulna News Mill which produces mainly newsprint using *Shegan* and *Shundari* trees of the Sunderbans and Karnaphuli Paper mill which produces different varieties of paper using bamboo from the Chittagong hill tracts forests. Both the factories pay ridiculously low prices for wood compared to the market price. This can be treated as subsidy by the government to the mills to keep the prices of paper in the market low. It has been concluded that Bangladesh paper

industry is operating at a cost level above the international price level. Simultaneously the price regulations make it impossible to sell paper at a reasonable level of profit because of the political decision to support education and mass media by keeping the paper prices down.

The subsidy reduces the production costs and thus increases the amount demanded. As the prices do not reflect the scarcity of the resource, there is no incentive to conserve it or to plant new trees for planting.

## Logging Rights:

In Bangladesh the government of ten require that the private parties logging the forest begin and finish harvesting in a certain period of time. This rush leads to inaccurate surveys, producing compromised or inadequate data of environmental or economic consequences. In addition governments also limit their agreements with private parties to periods that are much shorter than a single forest rotation.

Logging charges in public forests and their form significantly affect the pattern and level of harvesting as well as the amount of captured rent obtained by the government. In Bangladesh the forests are divided into separate blocks every year and then handed over to the highest bidder through pub-

lic bidding. Thus forest charges are usually based on the volume of timber removed from a "block", not the amount of timber that can actually be sold on the market. This combined with high transport cost and narrow market preferences for certain types of trees give strong incentives for the loggers to go for the most valuable trees. In Sunderbans (Bangladesh) this is for *Shegan* trees.

**Political Corruption:** The bureaucracy in Bangladesh is corrupt. Thus the policies are made purposefully to get bribes. High profits in forestry industry also encourages dishonesty.

Other major reasons for these inefficient government policies include: lack of financial fund for enforcement, unavailability of reliable data, underestimation of environmental cost and loss of bio-diversity, structural adjustments in the country's monetary policy, lack of investment in the forestry sector, Lack of information, migration of non-tribal people to Chittagong Hill Tracts ignoring the knowledge of the local people in sustainably exploiting the forest resource by the governments.

## Community Forestry: How it Works?

Forestry professionals have come to realise that efforts to address problems of deforestation

and environmental degradation must be built upon the active participation of members of rural communities. Rural women and men have more knowledge about local needs than policy makers or outside experts, and it is they who have the greatest vested interest in the sustainable use of local resources. When rural people are not involved as partners in the design and implementation of forestry projects, government efforts to address local as well as national objectives chronically fail. The same can be said of efforts at environmental conflict management: forest resource decision-making has a greater likelihood of succeeding if it includes the informed participation of all stakeholders involved in a conflict.

Bangladesh does not have any national community forestry programmes. At present the NGOs which are active in various projects for socio-economic uplift are also spearheading community forestry projects. At present around 600 NGOs are engaged in community forestry activities across the country. One thing must be noted here that community forest in other countries (i.e. Nepal) meant engaging people directly in sustainable forest management of the national forests, in case of Bangladesh it implied afforestation of new lands with the help of local people as the country has very scant forest area.

## The Requirement of Community Forestry

Community forestry is based on the fact that the concerns and expectations of government and local people are not necessarily the same. Similarly, indigenous communities and their local organisations may have distinct agendas. Conservation and development project design and policy must become more attuned to such differences and help bridge them. The community forestry is therefore based on an agreement between the villagers and the government that stipulates that the authority and the responsibility of a fixed forest area is handed over to the villagers (Forest User Group) and that the government still owns the land. In the other case the villagers are provided with seedlings and other information, villagers then harvest seedlings and tend those

them. Long-term credit is provided and the villagers pay back with their revenues from their sale of firewood. Thus forest becomes a resource for the villagers that can facilitate community development and other forms of social works for the income generated from it.

Sustainable forestry is generally defined as the forest management that maximises the long-term, net benefits and that means forest use should not exceed its ability to regenerate itself. Trees can be a profitable commercially as long as the prices reflect its shortage and the farmers have right to sell and own them.

For a sustainable community forestry to supplement an efficient government forest resources management policies some basic criteria need to be fulfilled: flexible bureaucracy to support decentralised forest resources management so that it is possible to assess and quantify peoples participation in community forestry programs, control migration, logging forestry to supplement an efficient government forest resources management policies some basic criteria need to be fulfilled: flexible bureaucracy to support decentralised forest resources management so that it is possible to assess and quantify peoples participation in community forestry programs, control migration, logging forestry to supplement an efficient government forest resources management policies some basic criteria need to be fulfilled: flexible bureaucracy to support decentralised forest resources management so that it is possible to assess and quantify peoples participation in community forestry programs, control migration, 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