

Protecting Bangladesh's Environment: The Role of the Civil Society

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Abstract

Bangladesh is experiencing serious environmental degradation. In many respects, the situation has reached crisis proportions. Several factors make Bangladesh particularly vulnerable to environmental damage. Yet, environmental degradation is not an inevitable price that Bangladesh has to pay for economic growth. There are examples showing that the goals of environmental protection and economic growth can be complementary. Bangladesh is making some efforts to confront environmental problems. However, these efforts are not proving adequate for the challenge. The underlying cause of the inadequacy is absence of a strong, broad-based social movement for environmental protection in Bangladesh. The common people of Bangladesh because of their link with the traditional mode of life are inherently environment-friendly. However, they are also burdened with the daily struggle for survival. The intelligentsia and members of the civil society will have to play a leading role in building up the necessary social movement. The non-resident Bangladeshis (NRB) and members of the international environment movement can join the resident Bangladeshis (RB) in this effort. There are some encouraging signs. It is now necessary to build on them. Existing pro-environment forces need to coalesce, enlist new forces, and thus build up a strong, broad-based, social movement for protection of Bangladesh's environment.

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I. Introduction

The Environment Gap: Serious environmental degradation has taken place in Bangladesh in recent years. There are many dimensions of this degradation. Urban air pollution, ground water contamination (by arsenic, etc.), surface water pollution, encroachment of rivers and other water bodies, improper disposal of industrial, medical, and household waste, deforestation, loss of open space, loss of bio-diversity, and noise pollution are just a few examples. In many cases, the extent of degradation has reached crisis proportions.

This degradation of Bangladesh's environment has taken place at a time when the developed countries have been improving their environment in many respects. Thus, the air quality in many cities of the early industrializing countries (EIC) is now better than before. The total area under forests in New England (of the United States) and in Germany has increased. The health of rivers and other water bodies in the United States and in Europe is improving fast. Many dams have been torn down to restore the natural life of the rivers. Wetlands are restored. Many threatened animal species have been protected from extinction and revived. This list can be made longer.

There was a time when Bangladesh's per capita income was low, but the air was pure, and the water was clean. Over the last years, the country has been trying to achieve economic growth and thereby narrow its *income-gap* and *technology-gap* with the developed countries. Unfortunately, in the process the environment has been let to suffer, and as a result now a new, painful *environment-gap* has emerged. Most of the indicators of environmental quality in Bangladesh are now far worse than in the developed countries. Ironically, this neglect of environment has not led to a narrowing of the income-gap. According to the World Bank statistics, per capita income of Bangladesh and the USA in 1975 was \$150 and \$8,070 respectively. In 1998 the corresponding figures were \$350 and \$29,340, respectively. Thus, over these twenty-three years the absolute size of per-capita income-gap has increased from \$7,920 to \$28,990. Meanwhile a yawning environment-gap has emerged.

The Necessity for Policy Intervention: There are several factors that make Bangladesh particularly vulnerable to environmental degradation. The fragile ecology, delicate flora and fauna, wetness of land, high density of population, reliance on foreign capital for industrialization, poverty of the masses are few such factors. This vulnerability enjoins Bangladesh to make extra efforts to protect her environment.

Sometimes it is argued that a low-income country such as Bangladesh does not have the luxury to worry about environmental quality. Some allude to the so-called Environmental Kuznets' Curve (EKC) to argue that developing countries should concentrate on achieving fast economic growth and not worry about environment because economic growth will automatically take care of environmental problems. However, even the advocates of the EKC have noted that the EKC does not obviate the necessity for active policies to reduce pollution. (See Panayotou 1995)

Further, recent research has shown that EKC is largely a myth. There is no universal rule that pollution has to first increase with economic growth before decreasing. The relationship

between environmental quality and income level has been found to vary widely across regions and across pollutants. This indicates that even for the same level of income the pollution level can vary depending on the policies pursued. (See for example Arrow et al. (1995) and Islam (1997a).) There are countries (such as Nigeria) whose environment has suffered terribly because of the way economic growth was pursued. On the other hand, there are countries (such as Costa Rica) that have achieved remarkable economic success without damaging the environment. Costa Rica's experience clearly testifies that the goals of economic growth and environmental protection can be complementary rather than being contradictory.

In fact, economic growth may actually suffer as a result of environmental degradation. An example is provided by the situation of Dhaka city. Poisonous air, uncollected garbage, lack of open space, dying and polluted water bodies, congestion, noise, traffic jam are all making life in Bangladesh's capital increasingly difficult. If allowed to continue, this will discourage foreign investment. Even domestic capital will take flight, which according to some accounts is already taking place. Bangladesh already has a negative image in the international arena because of her poverty, natural calamities, political volatility, etc. If in addition she becomes known as the locale of environmental disasters, which the arsenic crisis has already made her to some extent, then her negative image will be reinforced. This will harm her growth prospects.

It is Bangladesh's poor who are the worst victims of environmental degradation. It is the poor who are dying of arsenic contamination in Bangladesh's villages, and it is the poor urban dwellers who are most exposed to the poisonous air. Thus protection of environment is necessary even to ensure social justice. Hence for both economic growth and social justice, Bangladesh has to give priority to environmental protection.

The Necessity for a Social Movement: There are some efforts in Bangladesh to deal with the environmental problems. The government agencies, in collaboration with other organizations, are implementing several donor-financed environmental projects. A good number of environmental NGOs are active. Many large, general-purpose NGOs also now have environmental components. However, it is clear from the continued environmental deterioration that these efforts are not proving adequate for the challenge that Bangladesh faces. The efforts have to be raised to an entirely different level.

It is a mistake to think that the government will by itself 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 environment problems does not always require costly projects, which in Bangladesh tend to be donor-financed. Sometimes correct policies with proper implementation are what is needed. However, such policies will not always be adopted and properly implemented unless there is a social pressure to do so. The common people of Bangladesh are inherently environment-friendly. However, they are overwhelmed by their daily struggle for survival. It befalls upon Bangladesh's civil society (intelligentsia) to take the lead in generating such social awareness and pressure.

The experience of the developed countries also vindicates this conclusion. The improvements of environmental quality in the developed countries did not come about automatically. Numerous citizens' groups and organizations had to work hard to bring about

these changes. It is because of their continued work that a strong social pressure now exists in the se countries for protection of environment. Environment is an issue taken seriously by both the major political parties of the USA. 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. The professional and trade organizations have to take up the environment issue. Literary and cultural organizations, which represent the most sensitive sections of the society, have to get involved with environment. Educational institutions and students have to assume a leading role. Women and children's organizations have to play a special role. Journalists and other members of the media can be very effective in spreading awareness and mobilizing citizens' action about environmental issues. Such a process will ultimately lead the Bangladeshi political parties also to become serious about environment.

The civil society of Bangladesh is no longer confined to the geographical boundary of Bangladesh. A large number of Bangladeshis now work and live abroad, and this number is rapidly increasing. Revolution in the communications technology, particularly the advent of the Internet has now made it possible for the non-resident Bangladeshis (NRB) to be closely integrated with life in Bangladesh and extend cooperation to resident Bangladeshis (RB) in solving various problems of the country. Bangladesh Environment Network (BEN) has been set up with precisely such a purpose. Through BEN the environment conscious NRBs are lending their support to the RB environmentalists in the common fight against environmental degradation in Bangladesh.

In her fight for environment, Bangladesh also needs support of the international environment community. Many of Bangladesh's environmental problems are of regional or global origin. Without active support of environmentalists of other countries of the region and of the global community at large, Bangladesh will not be able to effectively solve these problems. For example, Bangladesh faces the serious problem of diversion of river water in their upper reaches by India. She needs the support of the Indian environmentalists to confront this problem.

It is heartening to note that various sections of Bangladesh's civil society are becoming more active about environment. The media, particularly the print media is giving more exposure to environmental problems. Many civic voluntary organizations are emerging with environmental protection as the goal. There are many on going 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' urgings, the government has recently changed the venue of NAM summit from Osmany Udyan in order to save the trees of that park. There are successes at district level too. These are encouraging signs.

It is now necessary to build on these successes and combine all forces to give a new momentum to environmental protection efforts in Bangladesh. By coalescing, the pro-environment sections of the Bangladeshi society can emerge as a potent force on the country's social scene and give birth to a broad-based environment movement. Only such a social movement can save Bangladesh from an environmental disaster.

II. Alarming Degradation of Bangladesh's Environment and the Growing Environment Gap

In recent years, Bangladesh's environment has undergone alarming degradation. There are many dimensions of this degradation. A few examples are as follows:

- a) *Air Pollution*: Urban air pollution has reached alarming level. The lead content of Dhaka city's air is at places reported to be more than one hundred times of the UN recommended safe level. Dhaka has become a *gas chamber* for slow poisoning. This poisonous air is destroying the body and brain of Bangladesh's citizens, particularly of the children, the future generation.
- b) *Arsenic Contamination of Ground Water*: Bangladesh has now become the center of international concern because of her arsenic problem. Increased use of groundwater aquifers and their non-adequate replenishment has caused the ground water level to go down. This and other factors have now caused a very serious problem of arsenic contamination of ground water in most of the districts of Bangladesh. People in the rural areas are dying each day because of arsenic poisoning. It is believed that when the cumulative effect of slow poisoning will pass the critical level, Bangladesh will face a major calamity.
- c) *Aggravation of Floods and Dying Rivers*: Floods are becoming more frequent and more serious. The *cordon approach* that Bangladesh has followed so far is not proving effective in dealing with country's flood problem. Instead, this approach is leading to neglect of the rivers, and as a consequence the rivers are dying. The cordon approach is also creating new problems of water-logging, increased flood depth, slow pace of flood water recession, and the accompanying problems of health, sanitation, and environment.
- d) *Loss of Wetlands*: More and more surface water bodies are being lost, both in the cities and in the rural areas. Part of it is driven by population pressure and need for settlement areas. The rest is because of bad policies. Loss of wetlands is causing temperature imbalance and general ecological deterioration. It is also aggravating flood.
- e) *Chemical Runoff to Surface Water Bodies*: Indiscriminate use of chemical fertilizer and pesticide is resulting in chemical runoff to the surface water bodies. This is causing serious damage to country's fresh water fish stock.
- f) *Industrial and Medical Waste*: Industrial enterprises are often discharging their toxic and other harmful solid and fluid waste in untreated form into neighboring areas and water bodies. Similarly, hospitals and clinics are often disposing indiscriminately their harmful clinical waste.
- g) *Household Waste*: In urban areas, disposal of household waste has become a serious problem. This problem is being aggravated by indiscriminate and increasing use of plastic materials.

- h) *Noise Pollution*: The decibel level and duration of noise in many parts of the cities are becoming unbearable. Many vehicles still use hydraulic horns. This is seriously affecting work condition and health of the people.
- i) *Deforestation*: Most of the *shalbons* have now become extinct. *Sundarbans* are under threat. The hilly areas of Chittagong and Sylhet districts are also getting denuded of forests. Bangladesh is now well below the required minimum of 25 percent of land to be under forest.
- j) *Loss of Bio-diversity*: With loss of wetlands and forests, Bangladesh is gradually losing its flora and fauna. Many aquatic and territorial species are becoming rare; some have already become extinct. This process is making Bangladesh geographically an uninteresting part of the world.

This list of different dimensions of environmental degradation in Bangladesh can be made longer. However, it is clear from above that considerable damage has already been done.

This degradation of Bangladesh's environment has taken place at a time when the developed countries have been improving their environment in many respects. Thus, air quality in many cities of early industrializing countries (EIC) is now better than before. The total area under forests in New England (of the United States) and in Germany has increased. The health of rivers and other water bodies in the United States and in Europe is improving. Many dams have been torn down to restore the natural life of rivers. Wetlands are reclaimed. Many threatened animal species have been protected from extinction and revived. The list may be made longer.

For a long time Bangladesh's per capita income was low, but her air was pure, and the water was clean. She had a primarily traditional, pre-industrial economy. Despite their low productivity, traditional methods of production have the important virtue of being less polluting and more environmentally sustainable.

Bangladesh is now trying to achieve higher productivity and economic growth through industrialization. The goal has been to narrow the country's *income-gap* and *technology-gap* with the developed countries. In the process the environment has been let to suffer. As a result, a new, painful *environment-gap* has emerged.¹ By most of the indicators of environmental quality, the situation in Bangladesh is now much worse than in the developed countries. Ironically, this neglect of environment has not led to a narrowing of the income-gap. According to the World Bank statistics, per capita income of Bangladesh and the USA in 1975 was \$150 and \$8,070 respectively. In 1998 the corresponding figures were \$350 and \$29,340, respectively. Thus, over these twenty-three years the absolute size of per-capita income-gap has increased from \$7,920 to \$28,990. Meanwhile a yawning environment-gap has emerged.

III. Bangladesh's Vulnerability to Environmental Problems

¹ For a discussion of the "environment gap" and its relation with the "income-gap" and the "tecnology" gap, see Islam (1999d)

Several factors make Bangladesh particularly vulnerable to environmental problems. A few of these are as follows.

(a) *Fragile nature of Bangladesh's ecology*: Bangladesh is primarily a delta. The entire country is connected through river system and underground aquifers. For a considerable part of the year the land remains wet. The flora and fauna of the country are of delicate variety. It is therefore very easy for pollution to spread and to damage and destroy the country's environment and ecological balance.

(b) *Extreme Density of Population*: Bangladesh has the highest density of population among all countries of the world, except some small and city states. The population density of the country is already fifty times higher than that of the US. It is six times higher than even that of China. The high density is acting as a double-edged sword. On the one hand it makes the human cost of pollution very high. Because of this high density, any environmental contagion in Bangladesh is sure to spread very fast and affect millions of people. High density implies that Bangladesh has very little open physical space and empty terrain to cushion the country against environmental shocks. On the other hand, The high and increasing density itself is a likely cause of environmental deterioration. Because of this very different population density, it is not environmentally sustainable for Bangladesh to imitate the consumption and lifestyle that has emerged in the sparsely populated North American countries.

(c) *Importance of Foreign Capital*: In its effort to industrialize, Bangladesh is relying greatly on foreign capital. Foreign companies do not usually have long-term stake in Bangladesh's well being. They are more likely to be guided by immediate profit concerns. This is likely to lead to many environmentally risky and damaging decisions by foreign companies. The recent Magurchara incident perpetrated by the Occidental company testifies to this possibility. As Bangladesh prepares to set up export processing zones all around the country and to lease out more of her inland and offshore territories to foreign companies for exploration and operation, potential risk to Bangladesh's environment is likely to increase.

(d) *Poverty and Illiteracy of the Masses*: Because of their link with the traditional mode of production and life, the common people of Bangladesh are inherently environment-friendly. However, they are also overwhelmed by their daily struggle for survival. Therefore they have less scope to be concerned about environmental degradation until it poses an immediate threat to their livelihood. In a sense, the polluting industrialization is foisted on them by 'outside' forces. The illiteracy sometimes acts as a barrier for them to understand the damaging impact of environmental degradation on their health and mind. With no or very little possibility of popular protest, perpetrators of pollution virtually have an open field. The way TSEVs prospered in Bangladesh for such a long time, despite their obvious deadly effects, bears clear testimony to this situation. The continued pollution by the Hazaribag tanneries is also another example.

The discussion above shows that it is easy for Bangladesh to become a victim of environmental degradation, and she has indeed become so in many respects. But is environmental deterioration inevitable for Bangladesh in order to achieve economic growth?

IV Is Environmental Degradation Inevitable?

Sometimes it is argued that a low-income country such as Bangladesh does not have the luxury to worry about environmental quality. Some allude to the so-called Environmental Kuznets' Curve (EKC) to argue that developing countries should concentrate on achieving fast economic growth and not worry about environment because economic growth will automatically take care of environmental problems. The Environmental Kuznets' Curve (EKC) is a concept that is parallel to the concept of Kuznets' Curve (named after eminent economist Simon Kuznets) regarding income inequality.² The idea behind this curve is that at low levels of income, environmental quality will first deteriorate with growth, and then it will improve when the economy reaches higher levels of income. This would yield an inverted-U shaped relationship between level of pollution and level of income.³

However, recent research has shown that the EKC is largely a myth.⁴ There is no universal rule that pollution has to first increase with economic growth before decreasing. In a recent article in the journal, *Science*, Nobel laureate economist Kenneth Arrow and several other reputed scientists have argued strongly against the EKC and the use of the EKC for policy inaction regarding environment.⁵ Developing countries can influence the quality of environment through conscious efforts. There are countries (such as Nigeria) whose environment has suffered terribly because of the way economic growth was pursued. On the other hand, there are countries (such as Costa Rica) that have achieved remarkable economic success without damaging the environment. Costa Rica's experience clearly testifies that the goals of economic growth and environmental protection can be complementary rather than being contradictory.

In fact, environmental degradation can even stifle economic growth. An example is provided by the situation of Dhaka city. Poisonous air, uncollected garbage, lack of open space, dying and polluted water bodies, congestion, noise, traffic jam are all making life in Bangladesh's capital increasingly difficult.⁶ If allowed to further deteriorate, this situation will

² The literature on Kuznets' Curve regarding relationship between growth and inequality is voluminous. Important works on this topic include Jha (1996), Kuznets (1955, 1963), Ram (1994), and Randolph and Lott (1993).

³ The notion of Environmental Kuznets' Curve is rather recent. For works on this topic see Griffith (1994), Hettige et al. (1992), Islam (1997a), Islam et al. (1999c), Panayotou (1995) Shafiq and Bandyopadhyaya (1992), Panayotou (1995). Selden and Song (1993, 1994), Song (1993) and Vincent (1997).

⁴ See, among other, Grossman and Krueger (1995) and Islam (1997a).

⁵ See Arrow et al. (1995)

⁶ Noting Dhaka's situation, Amartya Sen, the Bangalee Nobel laureate economist, commented during his visit to the city in December 1998 that he would not recommend anybody to live in Dhaka, even in its posh quarters such as Gulshan and Baridhara. See Islam (1999a) for a discussion of Sen's comment and its significance. For Sen's emphasis on environmental amenities as part of the set to be considered in examining inequality, see Sen (1992, 1997).

inhibit foreign investment. Even domestic capital will take flight, which according to some accounts is already taking place. Bangladesh already has a negative image in the international arena because of natural calamities, poverty, political volatility, etc. If in addition she becomes known as the locale of environmental disasters,⁷ then the negative image will be reinforced. This will certainly harm Bangladesh's growth prospects.

Note that Bangladesh's poor are the worst victims of environmental degradation. It is the poor who are dying of arsenic contamination in Bangladesh's villages, and it is the poor urban dwellers who are most exposed to the poisonous air. Protection of environment is therefore necessary even from the point of view of social justice. Thus for both economic growth and social justice, Bangladesh has to make environmental protection a high priority.

In sum, environmental deterioration is not an inevitability of economic growth. Through appropriate policy intervention, Bangladesh can achieve economic growth without destroying her environment. Bangladesh now finds herself in lose-lose situation. She has let environment to suffer and yet failed to achieve high rates of growth. Bangladesh has to convert the problem into a win-win proposition by making environmental protection and economic growth complementary goals.

In order to understand what needs to be done to bring about this change, it is first necessary to take a closer look at Bangladesh's response so far to the burgeoning environmental challenge.

V. Bangladesh's Response So Far

Efforts to confront environmental problems in Bangladesh have so far been undertaken mainly by the government agencies and the non-government organizations. In the following we briefly note the salient aspects of their activities.

Government: Traditionally environment was not high on the agenda of Bangladesh governments. Until recently, Bangladesh did not have a separate ministry for environment. There was a small Department of Environment and Pollution Control (DEPC) located within the Ministry of Local Affairs. This department had little authority and manpower. However, things have changed in this respect since then. Currently the Bangladesh government has a separate Ministry for Environment and Forests (MoEF). It is the responsibility of this ministry to formulate policies regarding environment. The Department of Environment (DoE) implements the adopted policies.

Bangladesh participates in various UN sponsored international environment initiatives such as the Rio Earth Summit and Kyodo conference. A number of donor-funded

⁷ The recent international coverage of the arsenic crisis has already put Bangladesh on the spotlight in this regard.

environmental projects are now under implementation in Bangladesh.⁸ The government, together with other environmental organizations in Bangladesh, has prepared a National Environment Management Action Plan (NEMAP). Many of the projects are part of the NEMAP implementation process.

Non-Government Organizations (NGOs): As in many other areas of developmental activity in present day Bangladesh, NGOs play a prominent role in the arena of environmental studies and protection. There are two types of NGO involvement in environmental protection. On the one hand, there are specialized, environmental NGOs that have been set up solely with environmental goals. On the other hand, many of the “general purpose” NGOs also now have environmental components in their program. Environment related NGOs (both specialized and not specialized in environment) have formed a coalition, namely Coalition of Environmental NGOs (CEN). Many of these NGOs have collaborated with the Government in formulating NEMAP. Some of these are now engaged in implementation of NEMAP related and other environmental projects, such as the Sustainable Environment Management Project (SEMP).

However, it is clear that these efforts and projects are not proving adequate for the environmental challenge facing Bangladesh. The environment in Bangladesh in general continues to deteriorate despite the projects. The Dhaka air continues to get more poisonous. More rivers are dying. More greenery is lost. More wetlands are vanishing. More wastes are dumped in neighboring land and water bodies without care. Pollution is now spreading to the rural areas. What are the reasons for this outcome? What have been the inadequacies in Bangladesh’s response so far?

VI. Inadequacies of Bangladesh Response

There are several reasons why Bangladesh’s environment continues to deteriorate despite the efforts and projects. Some of these reasons are as follows:

Improper Implementation of projects: Many environmental projects are not implemented properly. The recent findings of the Parliamentary Standing Committee on Public Estimate provide an example. According to its investigation of the World Bank financed Environment Development Project (EDP) of Dhaka city, about 70 crore taka of the total budget of 146 crore taka has been misappropriated.⁹ It can be well imagined what remains of a project if half of its money is misappropriated. It is possible that many other environment projects are

⁸ Foreign aid still finances a major part of Bangladesh’s development budget. Accordingly, foreign and multilateral development agencies play an important role in determining the direction, priorities, and the portfolio of projects included in the development budget.

⁹ See The Daily Star, October 23, 1999.

also in this kind of sorry state. Hence one reason for continued deterioration is that even when environmental projects are well conceived, these are not implemented properly.

Ill conceived Projects: Often the projects themselves are not very well conceived. An example is provided by the \$8 million (the World Bank financed) Air Quality Management Project (AQMP) for Dhaka city. Apparently the very design of this project failed to address the two main causes of air pollution. Researchers have established that about seventy percent of suspended particulate matter (SPM) in Dhaka city's air is caused by emissions of the two-stroke engine vehicles (TSEV). Similarly, it has been shown conclusively that the source of lead pollution of air is the unleaded gasoline used in vehicles. Instead of trying to eradicate these two causes, the AQMP project targeted all its money on such soft measures as monitoring, studying, and raising awareness, etc. It was a foregone conclusion that such a misconceived project will fail to have any positive impact on the air quality, even if the project is properly implemented.¹⁰

Absence of Right Policies: In many cases, solution to environmental problems does not so much require expensive projects as it needs right policies with proper implementation.¹¹ The air pollution problem discussed above serves as an example. It is clear from the discussion that a foreign loan-financed project may not be the main necessity here. What is instead needed is a firm moratorium on the TSEVs and a policy to switch to unleaded gasoline. Actually in view of domestic availability of natural gas, Bangladesh should completely switch to natural gas as the fuel for vehicles. With a firm deadline on TSEVs in place, the market forces themselves would have done the rest of the job of replacing TSEVs by similar-sized

¹⁰ This was pointed out in Bangladesh Environment Network (BEN)'s response to this project at the time of its inception. See Islam (1998b). Recently World Bank officials themselves have expressed frustration at the ineffectiveness of the project (See The Daily Star, October, 1999.)

¹¹ There is a tendency in Bangladesh for things to gravitate to projects without giving proper consideration to what can be achieved by mere adoption and implementation of right policies. This is a general feature and not confined to the environment sector. There are people who are more enthusiastic about projects and less about policies simple because projects bring money. This tendency is aggravated by the fact that in Bangladesh projects tend to be foreign donor-financed. Hence financing of project does not involve the pain and bitterness of *internal* redistribution. Of course, foreign-loan financing entails *inter-temporal* redistribution in favor of the current generation and away from the future generation, which will have to repay the loans with interest. However, with nobody to represent effectively the future generation, such redistribution is easier to carry out. Noting the situation it was observed in Islam (1998b) that, "Unfortunately just as all men, including Ulysses', entering Circe's house turned into animals, all policy initiatives in Bangladesh get transmuted into aid (read loan-) financed projects. Often times these projects end up being just rackets."

Another problem with donor financed projects is that accountability is slack at both donor and recipients' ends. This is a general feature of aid-dependent development process, and Bangladesh and her environment projects are no exception. As was observed elsewhere, "With no personal stake in the effectiveness of the investment either at the donor's end or at the recipients' end, it is no wonder that wrong investment decisions are made. This is rather a general problem of aid-financed development. History of the Third World countries, Bangladesh included, is littered with innumerable examples of such bad investments." (Islam 1999b, p. 18)

In many cases we do need projects. But the above makes it clear that projects can be truly useful only if these serve right policies, properly designed, and faithfully implemented.

vehicles that have converters. Unfortunately, Bangladesh has so far failed to announce a deadline beyond which the TSEVs will not be allowed to operate. Similar is the situation with switch to unleaded gasoline. Bangladesh continues to use leaded gasoline. It is therefore no wonder that with each passing day Dhaka city feels more like the gas chambers that the Nazis built to execute the Jews and other civilians during the second world war. There is simply no excuse for this egregious and criminal failure on the part of Bangladesh's successive governments. Even Nepal, a country whose per-capita income is lower than that of Bangladesh, has shown enough backbone and concern for its citizens to outlaw the TSEVs.

Lax Execution of Policies: Sometimes even the adopted policies are not executed properly. Again the TSEVs provide an example. In May 1998 the government owned Sonali Bank approved a huge loan allowing the Auto-tempo Owners' Association import another 5,000 TSEVs. This approval went against two standing policies of government itself. First is the policy of not allowing further import of TSEVs. Second, is the policy of not issuing new loan to previous defaulters. According to press reports, the Auto-tempo Owners' Association itself was one such defaulter. This shows how government policies often get flaunted at very high levels of the government itself.

According to press reports, such laxity in execution of policies is widespread at lower levels of government agencies too. Examples include lax execution of rules concerning vehicle emission inspection, disposal of industrial waste, preservation of open space and water bodies, protection of forests and woodlands, etc. These days industrial and other development projects often require Environmental Impact Assessment (EIA) to be done before these projects are approved. However, it is alleged that EIA requirements are frequently rigged in various ways.

Absence of Environmental Legislation and Court: Another inadequacy of Bangladesh's response is absence of necessary environmental legislation. Executive orders and rules may not be sometimes adequate to deal with situations. It may be difficult for the government to take legal action against polluters unless there are appropriate legislation making pollution a punishable crime. There is also lacking in the enforcement mechanism. The conventional criminal and civil cases already clog the existing judiciary system. It is difficult to get expeditious resolution of disputes concerning implementation of environmental rules and regulations. This does not mean that more cannot be done through effective use of the existing rules and courts. However, many believe that enactment of additional legislation and establishment of special courts will facilitate environmental protection in Bangladesh.

Position of the Environment Ministry within the Government: It seems that the environment ministry is yet to get the kind of priority that it deserves within the government. Resistance by such powerful ministries as of industries, trade and commerce, finance, etc. often overrides the views expressed by the environment ministry. It proves difficult for the environment ministry to take pro-environment measures unless the Prime Minister herself intervenes in support of those measures.

This list of possible reasons for inadequacy of Bangladesh's response to the environmental challenge can be made longer. Many of these reasons are manifestations of the general problem of governance in Bangladesh and hence are not unique to the environment sector. Poor governance is an important problem that requires separate, elaborate discussion. It involves issues not only of civil administration but also of effective functioning of the political system and the Parliament.¹² However, even after recognizing the general problems, there remain some problems that are particular to Bangladesh's response to the environmental challenge. We now turn to the underlying source of these particular inadequacies.

VII. Necessity of a Social Movement for Environmental Protection and the Role of the Civil Society¹³

The underlying cause of the inadequacies of Bangladesh's response to the environmental challenge is the absence of a strong social movement for environmental protection. Environmental protection in Bangladesh has so far remained the business of only the government agencies and some of the NGOs. It has not become a concern and business of broader sections of the society. Yet good policies for environmental protection will not always be adopted and properly implemented unless there is a social pressure to do so.

It needs to be recognized that eradication of environmental problems has two dimensions. One is finding the technical solution to the problem. The second is adoption of the technical solution as a policy and effective implementation of that policy. The TSEV problem provides an example of a situation where the technical solution is known. Alternative vehicles to TSEVs are known and available. The solution to the TSEV problem is to replace these by the alternative vehicles. On the other hand, Bangladesh's arsenic problem illustrates a case where the technical solution is less clear. Hence in this case the search for appropriate technical solution is necessary.

However, both these examples illustrate the crucial necessity of a social movement. Even the known solution to the TSEV problem is not adopted and implemented wholeheartedly because a popular movement demanding this solution is lacking. Similarly, a social movement is

¹² For a discussion of Bangladesh's administrative reform problem, see Islam (1999e). For a discussion of the issue of effective functioning of the political system, see Islam (2000).

¹³ I must acknowledge that I am using the term 'civil society' mainly because it is very much in currency now. Personally I haven't seen a very good definition of this term. Taken literally, it should mean the non-military part of the society. That would however make it almost co-terminus with the entire population, thereby making the term almost redundant, particularly in the developed countries. Perhaps the term has a special usefulness in the developing countries, where it may denote the (formally) educated (however defined) part of the population that does not belong to the military. It is somewhat ambiguous whether the government bureaucrats are considered part of the civil society. On the one hand they should be, because they are a component of the civilian part of the society. On the other hand, with them included, it becomes difficult to separate civil society's initiatives from those of the government itself. In absence of a clear and agreed upon definition of the term, I use it here to loosely refer to the old but clearer term 'intelligentsia.'

necessary even for the search for technical solution of the arsenic problem to proceed in the right direction.¹⁴

It befalls upon Bangladesh's civil society (intelligentsia) to provide the leadership in building up such a social movement. The experience of the developed countries also vindicates this conclusion. The improvements of environmental quality in the developed countries did not come about automatically. Numerous citizens' groups had to work hard for these changes. It is because of their persistent work that a strong social pressure now exists in the developed countries for environmental protection. Both the major political parties of the USA now take environmental issues seriously. In Germany pro-environment Green Party is now a partner of the coalition government. Environment is a high priority in other developed countries too.

A similar process has to unfold in Bangladesh. As of now, the situation in this regard is not entirely satisfactory, as the following run down makes it clear.

Political parties in Bangladesh engage in agitation over all kinds of issues. However, except for a few instances, the major political parties are yet to show much interest in the environmental issues.

Student organizations are expected to voice the interests of the future generation, and it is the future generations that are most at risk because of environmental degradation. However, student organizations in Bangladesh in general are yet to be fully active about environmental issues.

Professional associations play an important role in Bangladesh. They represent parts of the social elite who have direct connections with those in the administration and political leadership. They also play a vital role in implementation of various government programs. These associations, which include association of doctors and nurses, can certainly take up environmental issues more seriously in their agenda.

Educational establishments, including *teachers' organizations*, can play a very significant role in protection of Bangladesh's environment. Their potentiality is yet to be fully realized.

Trade unions and other *labor organizations* need to be more concerned about environmental problems because working masses are often more directly affected by pollution.

Literary and cultural organizations, which represent the most perceptive and sensitive sections of the society, have a prominent role to play in the fight for clean and aesthetically satisfying environment in Bangladesh.

Women's and Children's Organization need to be particularly concerned because the children are the most tragic victims of environmental degradation. It is urgent that the women's and children's organizations become more active about environmental issues.

Organizations at District Level have a vital role to play in protecting environment. Many of the worst forms of environmental degradation are in fact occurring in the rural areas of various districts. Arsenic contamination, chemical runoff to surface water, flood, water-logging, etc. are all problems that affect the rural population more than the urban population. Hence

¹⁴ There are indications that the search for solution of the arsenic problem is not always proceeding in the right direction.

various organizations at the district level and rural parts of Bangladesh have important reason to become active about environmental issues.

The above catalogue shows that many vital segments of Bangladesh civil society are yet to be fully engaged in the fight for environmental protection. It is this deficiency that needs to be overcome.

VII. Encouraging Signs

There are encouraging signs. Awareness about environmental degradation and the necessity of doing something about it is spreading. Many members of the civil society are coming forward with initiatives. Some of these initiatives are listed below.

Voluntary Civic Organizations: Many voluntary civic organizations are emerging with environmental protection as the goal. *Poribesh Rokkha Shopoth (POROSH)* is prominent among such organizations. POROSH has been making considerable efforts to protect Dhaka's lakes, greenery, and air. It led a vigorous movement against encroachment of the Gulshan lake and against lead pollution of Dhaka air. Another such organization is *Doctors for Health and Environment (DHE)*, which has been newly formed. DHE is trying to mobilize the doctors for the cause of environment. More organizations of such nature are springing up both in Dhaka and in other districts.

Issue Based Movements: Many movements and organizations are emerging based on specific issues. One example is the recent movement to save the trees of the Osmany Uddyan.¹⁵ Similar movements are observed in other districts too. There have been movements against adverse environmental impact of shrimp cultivation in Khulna. Movements have been waged against structures built under Flood Action Plan in Tangail, and against misguided development plans in *Bil Dakatia*¹⁶ of Jessore.

Media and Press: The media and the press are becoming increasingly vocal on environmental issues. Several newspapers are playing an important role in spreading awareness about environmental deterioration and in mobilizing citizens to stop various aspects of the deterioration. Mention may be made in this regard of such newspapers as *The Daily Star*, *The Independent*, *The Prothom Alo*, and *The Sangbad*.

Judicial Initiatives: Some initiatives are of judicial nature. This is exemplified by the work of Bangladesh Environmental Lawyers' Association (BELA). These initiatives show

¹⁵ This movement arose when the government decided to construct Bangabandhu Convention Center (BCC) at Osmany Uddyan. This construction would require felling of a large number of trees of this park, which is a rare patch of greenery in the old part of Dhaka.

¹⁶ *Bil* is the Bangla word for large natural surface water body, which is often linked with river(s), at least for part of the year.

that there are many things that can be done even under existing rules and laws and using existing courts.¹⁷

Other Initiatives: There are other encouraging initiatives to save Bangladesh's environment.¹⁸ Many of the initiatives mentioned above have proved successful. For example, POROSH's movement against encroachment of the Gulshan lake forced the authorities take some actions. Similarly, the joint press conference by POROSH and other environmental organizations in January 1999 highlighting the damaging impact of lead pollution on children led the government form a committee to look into the issue and suggest measures.

Many issue-based movements have also proved to be of some success. The movement to save Osmany Udyan's trees has contributed to the government's decision to shift the venue of BCC to Sher-e-Bangla Nagar. Similarly, BELA's suit against FAP 20 was a success. The local people's movement to save *Bil Dakatia* in Jessore achieved results. The movement in Khulna against adverse environmental effects of shrimp cultivation also had some impact.

However, these successes are still limited and can easily get reversed. For example, despite some actions by authorities against encroachers, the Gulshan lake still remains threatened. The process of switching to unleaded gasoline seems to have stumbled. The restrictions imposed on TSEV import are frequently ignored. The Osmany Udyan is now threatened by other agencies. BELA's victory regarding FAP-20 did not stop adoption and implementation of other FAP-type projects. Shrimp culture continues to threat environment in Khulna coastal areas. The *Bil Dakatia* struggle has not secured other *Bils* of the country as is evidenced by the recent events concerning the *Haors* of Netrokona and Sunamgonj.

Thus, the successes achieved so far are limited and fragile. They cannot be extended and made firm unless there is a broad mobilization of social forces. The common people of Bangladesh, because of their link with the traditional methods of production and traditional way of life, are inherently environment-friendly. However, they are overwhelmed by their daily struggle for survival. Therefore, members of the civil society have to come forward to build up the social movement for environmental protection in Bangladesh.

IX. The Role of Non-resident Bangladeshis (NRB)

¹⁷ One of the important cases by BELA has been the lawsuit against FAP 20 on behalf of the adversely affected rural people in the district of Tangail. BELA has taken other such judicial initiatives.

¹⁸ The Naya Krishi Andolon of UBINIG can probably be another example of such initiatives. As reported, the purpose of this initiative is to encourage farmers practice organic agriculture and refrain from using chemical fertilizer and pesticides. As mentioned above, these fertilizers and pesticides are the main source of chemical run off to Bangladesh's surface water bodies. Thus, in addition to the other positive impacts, reduction in the use of these chemical inputs will help mitigate the chemical run off problem. Note that many in the developed countries are now realizing the negative aspects of inorganic, chemical inputs-based agriculture and are gradually moving toward organic agriculture. Bangladesh can certainly benefit from these experiences.

It needs to be realized that the civil society of Bangladesh is no longer limited to the geographical boundaries of Bangladesh. There now exists a Diaspora Bangladesh, which is significant in terms of both number and potential. The non-resident Bangladeshis (NRB) have been all along making valuable contribution to Bangladesh's economy. An important source of foreign currency of Bangladesh government is the remittance money sent by Bangladeshis working overseas. In 1996 private transfers to Bangladesh amounted to \$1,445 million. This is almost equal to the total foreign disbursement to Bangladesh in that year (\$1,450). (Hossain et al. 1997.)

However, revolution in the communications technology, particularly the advent of the *Internet* has now made it possible for the non-resident Bangladeshis to be closely integrated with life in Bangladesh and extend cooperation to the resident Bangladeshis (RB) in solving various problems of the country.¹⁹

Environmental protection is one such area in which the NRBs can fruitfully cooperate with the RBs. The NRBs have taken the initiative to set up *Bangladesh Environment Network (BEN)* to unite the strength and resources of the NRBs and the RBs in the common fight against environmental degradation in Bangladesh.

As noted earlier, the developed countries have by now accumulated considerable experience in repairing damage and improving environmental quality. This experience should be of much help to Bangladesh, and the NRBs can work as a direct conduit of this experience. They can help transfer the frontier knowledge to the people of Bangladesh.

The environmental issues often cannot be separated from issues of appropriateness of technology. This is because many environmental problems can be avoided simply by choosing the right technologies. This is another area in which the NRBs can play an important role. Bangladesh suffers from a technology-gap vis-à-vis the developed countries. This technology-gap has both an external and an internal dimension. The challenge is to close the external technology gap without exacerbating the internal technology gap and without aggravating the environment gap. In Bangladesh needs to promote such technologies that can bridge all these gaps simultaneously. This is a difficult challenge and requires considerable effort and creativity. The NRBs, because of their physical proximity to the technological frontier can help in identification and transfer of such technologies. This will help Bangladesh's environment.²⁰

Each year Bangladesh spends a large sum of money on foreign consultants. Often the advice these consultants give is of poor quality, superfluous, and harmful. Bangladesh can reduce her dependence on foreign consultants by using more effectively the technical potentiality and patriotic zeal of the non-resident Bangladeshis.²¹ This applies to her environmental efforts too.

¹⁹ For a discussion of the potential role of non-resident Bangladeshis in helping solve Bangladesh's problems, see Islam (1999d).

²⁰ The non-resident Bangladeshis have taken some initiative with regard to appropriate technology choice and transfer. They have set up an organization named *TechBangla* with a web-site at www.techbangla.org. Through this organization they are combining technological ideas and investible resources of the non-residents and are forging links with resident Bangladeshis to realize the objectives.

²¹ The non-resident Bangladeshis have taken some initiatives in this regard too. They have set up an organization named EB2000 with a web-site at www.EB2000.org. The main purpose of this organization is to make an inventory of non-resident Bangladeshis who are specialists in different areas and connect them with relevant people in Bangladesh.

Finally, NRBs can be of much help in enlisting the support of international community for Bangladesh's environmental efforts. Because of their physical presence in the developed countries, many NRBs are better placed to establish links with international environmental organizations and activists and mobilize their support. This support is very necessary for Bangladesh, as we discuss next.

X. The Role of the International Community

There are several reasons why Bangladesh needs the support of the international community for her environmental efforts. First, as noted earlier, Bangladesh is relying considerably on foreign capital for industrialization. However, foreign companies can often adopt a cavalier attitude with regard to environment in Bangladesh. The experience of Nigeria and many other developing countries bears testimony to this possibility. The Magurchara incident of gas well explosion may serve as an ominous example. The sharp deterioration of environmental quality in areas where the Export Processing Zones (EPZ) have been established should also be a warning signal. Foreign companies make up most of the enterprises of the EPZs, and it is clear that they are often not showing appropriate concern for the environment. Although these companies can get away with such negligence and violation of rules in the Third World countries, they are generally more afraid of actions against them in their own countries. Hence, if we can enlist active cooperation and support of international environment organizations, these companies will be forced to be more careful about environmental protection in Bangladesh.

Second, many of Bangladesh's environmental problems are, to some extent, the result of global and regional processes. One example is the recent aggravation of floods. Many internal bad policies of Bangladesh have had role in this aggravation. However, some regional and global processes are also contributing to this problem. Many scientists observe that global warming is causing more moisture from the Indian Ocean being picked up by the southwest monsoon winds resulting in more precipitation and hence more flooding in Bangladesh. Similarly, global warming may cause gradual rise in sea level, further aggravating the problem. Given Bangladesh's extremely low altitude and flat terrain, any rise in sea level is likely to be of catastrophic consequence. Another problem of global origin is the problem of potential subsidence of parts of Bangladesh.

Bangladesh cannot hope to cope with these large problems alone without the help of international community. Hence it is urgent that Bangladesh establish strong ties with pro-environment forces of the developed countries and with international environmental organizations.

Of particular importance in this regard is to forge link with environmental community of India and other countries of the sub-continent. Farakka is already a source of great pain for Bangladesh. But it now appears that India is moving ahead with plans to construct water diversionary projects on many other rivers that pass through Bangladesh. The recent press reports on India's plan to construct dam on the Barak river shows how serious the situation can be for Bangladesh in future. Unfortunately, Bangladesh has little leverage on India in dealing with

these issues. Also, the internal political dynamics often prevent the governments of both countries from reaching mutually beneficial solutions.

The plans to construct dams on the upper reaches of the rivers show that the Indian government is still stuck to the old ideas regarding use of rivers as natural resource. The modern thinking has progressed much further. According to this thinking the best use of rivers is to allow them to run their natural course. In the US, following this thinking, about 127 dams have been so far torn down over the past years. There is now even discussion of tearing down the mammoth Hoover Dam and the Glen Canyon Dam.

It is encouraging to note that this modern thinking is taking root in India too. The strong movement against the Narmada Dam project is a clear testimony to this fact. Government-to-government negotiations will not be enough to prevent India from construction of water-diversionary projects on the upper reaches of Bangladesh's rivers. Citizen-to-citizen contact and unity of the pro-environment forces of the two countries can play a vital role in persuading both India and Bangladesh away from structural interventions on the rivers. The long-term solution of the arsenic problem will also require cooperation between the peoples of India and Bangladesh.²²

These concrete examples only illustrate the importance of ensuring international and regional support for success of Bangladesh's environmental efforts. It is heartening to note that Bangladesh Environment Network has made some progress in mobilizing international support for Bangladesh's environmental efforts.

XI. Conclusions

In recent years Bangladesh's environment has undergone serious deterioration. In many respects the situation has reached crisis proportions. Several factors make Bangladesh particularly vulnerable to environmental damage. However, environmental degradation is not inevitable. The experience of several developing countries has shown that it is possible to achieve economic growth without destroying the environment. It is extremely dangerous to think that environment may wait till the country becomes well off. The damages will be irreparable, and environmental degradation will choke economic growth itself.

Bangladesh is making some efforts to confront the environmental problems. However, these efforts are not proving adequate for the environmental challenge she faces. There are many reasons of the inadequacy. The underlying cause however is absence of a strong social movement for protection of environment in Bangladesh.

The common people of Bangladesh, because of their link with the traditional methods of production and traditional way of life, are inherently environment-friendly. However, they are overwhelmed by their daily struggle for life. It befalls upon the civil society and the intelligentsia to provide lead in building up the necessary social movement.

²² For a discussion of this necessity of cooperation between India and Bangladesh at citizen level in order to solve the water sharing problems, see Islam (1997b).

There are many encouraging signs. Several civic, voluntary organizations have emerged and are working with protection of environment as the goal. There have been specific environmental issue-based movements too. These initiatives and movements have already produced some positive results. It is now necessary to build on these successes, enlist new forces, and build up a strong social movement for protecting Bangladesh's environment.

The civil society of Bangladesh now extends beyond its geographical borders and covers the non-resident Bangladeshis. There have been significant environmental initiatives on the part of the non-residents. The environment movement in Bangladesh can benefit from their contribution.

Bangladesh also needs the cooperation of the international environment movement and the support of the pro-environment forces of the countries in the region, particularly of India. Without help of the Indian environment movement, it will prove difficult for Bangladesh to dissuade the Indian government from construction of water-diversionary projects on the upper reaches of the common rivers.

It is hoped that the International Conference on Bangladesh Environment, 2000 will bring all pro-environment forces together and thus be an important milestone in the development of a strong, broad-based environment movement in Bangladesh.

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