



Environment and Sustainable Development in Bangladesh: Ways to Achieve Development

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Introduction

1. In recent years global concern for protecting the environment and conserving natural resources has been heightened. In addition, the call for integration of environmental consideration into development planning has become louder. 'Sustainable development' has now become the new buzzword in development thinking. The World Commission on Environment and Development has defined sustainable development as development that meets the need of the present generation without compromising the ability of future generations to meet their own needs. In other words, for a development to be sustainable the standard of living of the current generation has to be raised without imposing any significant cost on the future generation. In order to achieve that, attention has to be paid to create and conserve all types of resources including environmental resources. If we consume all natural resources today to obtain economic growth we will not only degrade the environment but also create a cost burden on the future generation. Therefore, sustainable development can only be achieved through optimal use of environmental resources and through proper management of the environment.

2. In Bangladesh, high population growth and rampant poverty have contributed to the unsustainable use of its limited natural resources. This results, degradation of the environment. If the present trend of resource use continues, Bangladesh will face serious environmental degradation in future.

3. The degraded environment coupled with the gloomy economic situation pose serious threat to the sustainable development of Bangladesh. The economy might have shown a little progress in terms of growth of the Gross Domestic Product (GDP) over the past years - at an average growth rate of 4 % approximately but many other aspects of life, such as education, health and the environment remained neglected. These issues have to be taken care of if Bangladesh wants to follow the path of sustainable development and ensure welfare for the future generation as sustainable development requires meeting the basic needs of all by extending the opportunity to all to fulfil their aspirations for a better life.

Physical and Socio-economic Features of Bangladesh

4. **Physical Features.** Bangladesh, with an area of 144,000 square kilometres is situated on the north-eastern side of South Asia. India bound the country on the west, north and east; on the east by Myanmar, and by the Bay of Bengal on the south. It lies at the foot of Himalayan hills. The country is formed by the delta of three major river systems; the Brahmaputra (Jamuna), the Ganges (Padma) and the Meghna. The country is mainly flat. One-third of Bangladesh is less than 20 feet above the sea level posing the threat of being affected by sea level rise. Maximum altitude is 850 meter on the Bangladesh- Myanmar border. Small tracts of higher land exist in Mymensingh, Sylhet and Chittagong Hill regions. Almost every year about one-tenth of the land is subject to severe flood and inundation. Moreover, during monsoon the constant shift of river channels and courses affect the country badly; such shifts dislocate settlements, affect the construction of roads and infra-structural development. The situation gets worse when cyclone and tidal surges cause significant damage to property and lives. Bangladesh also face periodic drought problem affecting agricultural production; mostly north - western part of the country faces this problem. The climate prevailing in the country is tropical, which is characterised by heavy rainfall. The averages rainfall during monsoon is between 1200 -3500 millimetre. During monsoon rainfall can increase up to 5000 millimetre in the eastern district of Sylhet. About two-thirds of the total annual rainfall occurs during July to September. Average temperature in Bangladesh provides better opportunity for crop production.

5. Socio - Economic Background.

- a. **Poverty.** In addition to unfavourable natural condition the country is faced with mass poverty. Per capita income was estimated to be US \$240. The proportion of the population that can not afford a diet providing 2122 calories per day was 47% in 1988-1989. This is only slightly less than what was in 1985-86 (52%). The proportion of the extremely poor, those who can not afford a daily intake of 1805 calories, has risen from the previous year. Life expectancy is 55 years in 1992 as against an average of 62 for the low-income countries.
- b. **Population.** The size of population and the growth rate is alarming. Population growth rate has slightly declined from previous years. Population density has increased to 794 persons per square kilometre compared to 463 persons per square kilometre in 1970. The United Nations (1993) has projected the population density of Bangladesh as 1632 persons per square kilometre by the year 2025.
- c. **Education.** Adult literacy is only 35% compared to 88% in Sri Lanka, and 48% in India. Female literacy is 22% compared to 48% in other low-income countries.
- d. **Economic Situation.** Agriculture is the predominant sector in the economy; accounting for about 34% of total GDP. Labour force employed in agriculture sectors remains more. Agricultural sectors provide many of the raw materials for industries. Rice is the major agricultural crop. Jute, sugarcane, tea are the main cash crops. Wheat, tobacco, pulses, vegetables and fruits are among other important crops. Major natural resources include natural gas, lignite coal, limestone, ceramic clay and glass sand. Share of the industry sector in GDP is half of the agriculture i.e. 17%. Despite efforts to modernise and change in the structure of the economy the outcome has been slow. However, the importance of the agriculture sector in GDP has declined over the last two decades yet the contribution of industry has not increased remarkably. The actual economic growth turns out to be insignificant due to population pressure. Investment rate is the lowest among the South Asian countries averaging around 12% of GDP. Gross domestic savings are around 2% only. Foreign aid is an important source of development activities; major portion of the total investment is financed by external development assistance.

Environmental Problems in Bangladesh

6. **General.** The main environmental concerns in Bangladesh include land degradation, water pollution, air pollution, degradation of natural forests and wetlands, degradation of coastal environment and loss of fisheries. The causes of environmental degradation can be identified as industrial pollution, excessive use of chemical fertiliser, commercial exploitation of natural resources, deforestation, flood and natural hazards, population pressure on land and other resources and poverty. Poverty can both be a cause and effect of environmental degradation. Poverty leads to exploitation of resources, which causes degradation of resources. The poor are also the most vulnerable to any type of environmental degradation. Any degradation leads to worsening the poverty situation. Ignorance, lack of appropriate policies and institutional failure are also responsible for resource degradation. In this section we will discuss in brief the major environmental problems in Bangladesh.

7. **Deforestation.** Forest provides food, raw materials for various human activities such as construction, furniture, and agricultural implements. Energy requirements are met to a large extent by the forest resources. It provides environment to wildlife and various valuable forest products. It also plays an important role in preserving climate and natural conditions of the country. In Bangladesh forestry is relatively a minor sector in terms of its contribution to GDP. Very less percentage of the population are employed in this sector. However, the poor depend on forests for their building materials, food and energy requirements. The growing demand for forest products leads to the exploitation of forests in Bangladesh. There has been a continuous reduction of forest resource over the past few decades. In Bangladesh, the actual estimation of deforestation varies among various sources due to the unavailability of genuine information. Some periodic visual observations show that deforestation affects one eighth of the land area of the country. Data from official statistics shows that the annual deforestation rate is around 1.4%. Over-cutting, land clearing mainly for shifting cultivation, encroachment, overgrazing, uncontrolled commercial logging, illegal felling, fuel wood consumption and natural disasters like cyclone and flood are the direct causes of deforestation in Bangladesh. Shifting cultivation is characterised by a rotation of fields rather than of crops, often accompanied by slashing and burning. Indirect causes of deforestation include population pressure, poverty and lack of appropriate forest management policies and regulations. Illegal felling and encroachment reflect the failure of government regulation. Government policies and regulations also contribute to deforestation and declining productivity.

8. **Land Degradation.** The pressure on land is tremendous in Bangladesh due to high population growth. There is less than 0.1 hectare of cultivatable land per person. Almost all the lands are used for agriculture, forestry and settlements. Less than 1% of the total land is being used for industry, infrastructures and social need. An area of about 1.74 million hectares of sloppy land is now having serious erosion threat because of shifting cultivation and lack of appropriate management practices. Increase in cropping intensity and cultivation of modern crops has resulted in removal of nutrients because of uneven replenishment. The problem of nutrient deficiency is increasing. About 4.5 million hectares and 1.75 million hectares of land have been identified to be deficient of Sulphur and Zinc respectively. Soil erosion is a serious problem especially in the hill areas like Chittagong Hill Tract, Modhupur Tract. An area of about 808.17 square kilometre in Moulvibazar and Sylhet districts faces the problem of soil erosion. The removal of fertile top soil and replacement of infertile soil to the surface are caused by the influx of settlers, clearing of forests, low organic matter, poor soil

structure, heavy rainfall and inappropriate land management. Energy crisis in rural areas leads to land degradation. Burning trees reduces the amount of organic matter in the soil and tree cover. Use of cow dung as fuel reduces its use as fertiliser. The use of pesticides to a greater extent also causes problem for the soil. Research has shown that pesticides applied at the rate of one pound per acre contaminate the topsoil to a depth of a foot. Water logging due to the embankments built to control flood can induce iron toxicity in soil. Embankments can also cause siltation of rivers and land within poldered areas. The problem of siltation is acute in the district of Khulna.

9. **Loss of Fisheries.** Fish is the most important resource of the ecosystem in Bangladesh. The fisheries sector contributes about 3% to the GDP. The trend in inland fish production shows that it has been declining steadily over the last few years. On a per capita basis, fish production has declined as a result of population growth outstripping fish production increases. Over fishing, pollution from agricultural chemicals and industrial and domestic waste, flood control, irrigation, road construction and inefficient management are the main reasons for decline in inland fisheries. Ammonia discharged and leaked from the fertiliser factories on the shore of rivers kills fish. The impact of different insecticides and pesticides on fish and aquatic lives is not researched in Bangladesh and, therefore, data are not available.

10. **Water Pollution.** Agricultural and domestic activities, navigation, electric power generation, industries and fishery depend on water resources. The water is being polluted in many ways. Tannery, paper, pulp and jute mills in major Industrial City discharge their pollution untreated into the water. Raw sewage and organic wastes are discharged directly into the water. Numerous boats, launches, steamers release diesel and oil wastes that pollute the water. Oil tankers and cargo ships come to seaports of Bangladesh which spills oil and discharge wastes. According to a report there are 144 industries in Chittagong zone, which produce DDT, pesticides, tanneries, textiles, paper, rayon, soap and detergents, chemical. These industries discharge organic waste into the Karnafuli river and estuaries water of the Bay of Bengal. This causes severe pollution of the river and estuary. Aquatic fauna and flora and aquatic system are being endangered. Water pollution is occurring also in industrial zones of Khulna, industrial areas of Tongi, Ghorasal, Demra, Fenchuganj and Chatak. Recently, the negative impact of arsenic contamination on human health has become severe. Excessive use of ground water for agricultural activity has been found to be responsible for such horrifying situation.

11. **Air Pollution.** Growth in urban centres and industries has increased the level of air pollution as well. Vehicular and industrial pollution are causing serious health problems. The Department of Environment (DOE) monitored suspended particulate matter, sulphur oxide (SO₂) and nitrous oxide (N₂O) in three locations - Tejgaon industrial area, Motijheel commercial area and Lalmatia residential area of Dhaka city from January to June in 1990. The results of the monitoring show that from January to April (1990) the value of suspended particulate matter in all the areas exceeded the national ambient air quality standard for Bangladesh. Vehicular exhausts appear to be a major contributor to suspended particulate matter levels. A survey done by the DOE shows that emissions from 86 percent of the vehicles in Dhaka City exceeded the acceptable level of emission in terms of Bangladesh standard and 77 percent of them were found to be highly polluting.

Sustainable Development: Ways to Achieve

12. **General.** The economy of Bangladesh is very much dependent on the productivity and quality of soil, water, forests, fisheries and other natural resources. Therefore, strategy for economic development should take into account the efficient use of these resources so that development can be ensured in the long run. The importance of sustainable environmental management is being felt at the policy level gradually. The National Environmental Management Action Plan, Environment Protection Act, 1995 and National Conservation Strategy are few examples of such recognition by the government. However, necessary actions at various fronts are yet to be undertaken. Some of these are as follows:

- a. **Environmental Policies** Policies concerning environmental programmes should be taken for the preservation of wetlands, afforestation and reforestation. Actions are needed to keep the extent of effluent dumping, air, water and solid waste pollution within acceptable limits. Development policies should be undertaken after in-depth assessment of the impact on the environment.
- b. **Reduction of Poverty.** The solution to many environmental problems lies in the reduction of poverty. In rural areas the poor exploits natural resources to survive. When the opportunities become limited they migrate to the cities in the hope of greater opportunities. Population pressure in the urban areas due to migration from rural areas cause land scarcity, pollution and social problems. Many of the urban people have to live in the slums and squatters without the proper facilities such as water, sewage, drainage and garbage removal system. This deteriorates the health and nutritional status.
- c. **Sustainable Population Growth.** Population growth is the most serious problem facing sustainable use of natural resources. If uncontrolled it will worsen poverty situation and environmental degradation. Health and family planning programmes should be expanded and operated efficiently to cover a greater number of populations under such programmes.
- d. **General Awareness.** Due to the absence or inaccessibility of scientific and ecological information many severe environmental problems show up in Bangladesh. Ignorance about the ecology of state, forests, prevents us from utilising the products and services of natural

forests in a sustainable way; ignorance about aquatic ecology leads to over-fishing. Therefore, increased awareness both at the individual and national level is essential to develop a sense of responsibility towards keeping the environment clean. In a country like Bangladesh this will call for educating the people.

e. **Market, Policy and Institutional Failures.** Many environmental problems arise due to market, policy and institutional failures. Problems related to market failure arise, as environmental resources are not valued and, therefore, the economic cost of degradation is overlooked, for example, industries dispose wastes without taking into account the social cost. Valuation of environmental resources and incorporation of environmental accounting as integral part of the national income accounts are very important to achieve economic and ecological goals. Policy failure leads to the overexploitation of resources since various policies of the government such as subsidised price of water, gas, timber and agricultural input encourage inefficient use of resources. It is suggested that for efficient use of resources, outputs should be priced at their marginal social cost (MSC). MSC is the marginal cost of production plus the external cost of pollution caused by producing the good. Institutional failure in terms of failure in formulating, implementing and enforcing regulations against the polluters happens due to weak institutions. Environmental laws regarding forestry, air and water pollution, pesticide use, solid waste, industrial effluent, land use have to be updated. The Environment Protection Act, 1995 (GOB, 1995) has set guidelines and standards for both new and existing industries. The implementation and enforcement of regulations requires a strong institutional set up with skilled and honest human resources.

f. **Government Commitments.** Strong commitment of the government is the prerequisite for any programme to be successful. The state has to motivate the community to protect the environment, give incentives to the private sector to clean up and take actions against the polluters.

Conclusions

13. The location of the country makes water management the main issue in its environmental plan. One of the main sources of life for our country is water. So we cannot afford to see either our agricultural lands degraded or rivers dry up. The degradation of the environment is basically caused by human activities since development is primarily dependent on or related to the environment.

14. The country is faced with rampant poverty, natural hazards, sustainable population growth, administrative weakness and above all the general awareness. Bangladesh largely depends on foreign aids for which donor countries dominate the decision making process. Lack of strong internal / foreign policy and diplomacy severely affects our economic environment as well as destroy the ecological balance. Low resource base and low land-man ratio are coupled with natural hazards and mismanagement.

15. Bangladesh need a carefully designed strategy for sustainable economic growth and counter unsustainable population growth. The linkage between environment and development has to be understood by the authority concerned. Any development programme without due attention to the environment is bound to cause threat. A sound administrative will is required to formulate development policies for sustainable use of resources.

Recommendations

16. For sustainable development in Bangladesh, my recommendations are as given beneath:

a. The consequences of environmental degradation should be disseminated among the mass people as well as among the policy makers. This is essential for formulating any environmentally sustainable development programmes in the long-run. Along with well developed programmes legal framework should be strengthened.

b. To implement the environmental programmes a strong institutional and legal frame-work is required as institutional failure quite often deter the implementation of laws.

- c. Strong diplomatic manoeuvre with wide vision is also important to influence both internal and external situation in favour of sustainable development. The country should be able to negotiate at the international arena on matters related to sustainable development.

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