



Environmental Degradation in Bangladesh: A Review

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ABSTRACT

Bangladesh, as a low-lying, densely populated country, faces severe environmental challenges that threaten its sustainable development and the well-being of its population. The primary factors contributing to environmental degradation in Bangladesh include deforestation, air and water pollution, soil erosion, and climate change-induced phenomena such as rising sea levels and extreme weather events. Rapid urbanization, industrial expansion, and poor waste management exacerbate these issues, resulting in deteriorating water quality, loss of biodiversity, and declining agricultural productivity. The country is particularly vulnerable to environmental hazards due to its geographical location and reliance on natural resources for economic activities. Major rivers like the Ganges, Brahmaputra, and Meghna are increasingly polluted by industrial discharges and untreated sewage, impacting aquatic ecosystems and public health. Additionally, deforestation in hill tracts and wetlands has led to habitat loss and increased soil erosion. Air pollution, driven by brick kilns and vehicle emissions, poses significant risks to human health, particularly in urban areas like Dhaka. Climate change amplifies these problems, with rising sea levels threatening coastal regions and intensifying floods and cyclones, displacing millions of people. Addressing environmental degradation in Bangladesh requires integrated policy measures, effective enforcement of environmental regulations, and community involvement. Sustainable development strategies, including renewable energy adoption, afforestation, and efficient waste management, are critical. International cooperation and financial support are also essential to mitigate the adverse effects of climate change and ensure long-term environmental sustainability in Bangladesh.

Keywords: Environment, Pollution, Air, Water, Climate Change, Development, Population, Deforestation, Industrialization, Green House.

Introduction

Bangladesh is a land of natural beauty, with a diverse landscape of rivers, forests, and mountains. Although Bangladesh is rich in natural resources, it is dealing with a grave issue of environmental pollution. From the air we breathe to the water we drink; pollution has become a pervasive problem in Bangladesh. The fundamental challenge confronted by mankind today is how to meet the basic needs of humanity without simultaneously destroying the resource base, the environment, from which these needs must be met. Within the last few decades environment is being polluted by unrestrained, unplanned and implanted exploitation of the nature by man. In developing countries, including Bangladesh, environment pollution has taken severe form.

Bangladesh is a developing country with rapidly increasing population. Its meager resources are either over exploited or used sub-optimally. The significant forms of environmental degradation in Bangladesh are deforestation, natural calamities, degradation of soil, air and water pollution, ozone layer depletion, green house effects and global warming sea level rise etc. Besides poverty and illiteracy make our people apathetic about the issue. So in Bangladesh most of the people are unaware about the imminent and long-term effect of environment pollution such as damage to human health, reduced productivity and broken social structure and traditions.

The major challenge to the Government of Bangladesh (GOB) is meeting basic human needs with very limited resources. Every individual human being has the right to enjoy clean air, pure water and the benefits of biological diversity. The Government is trying to formulate an environmental strategy and organizational setup suitable for sustainable development having both national and international approaches. Sufficient organizational and legal set up has been established in Bangladesh to fight against environmental pollution. But the question is how far environmental pollution is controlled? Making decision on environmental problems at present may be complicated with uncertainties by the long-term nature of their effects and by the possibilities of thresholds beyond which unexpected or irreversible change may occur. New evidence shows that the impact of CFCs on ozone layer depletion is greater than earlier thought.

Environmental Degradation in Bangladesh

Definition of Related Terms

Environment. The term 'Environment' can be defined as the whole sum of the surrounding external conditions within which an organism, a community, or an object exists. Environment is not an exclusive term; organism can be and usually part of another organic's environment. Environment,

as per the Environment Protection Act, 1995 includes water, air, land and physical properties and the inter-relationships which exist among and between them and human beings, other living creatures, plants and micro-organisms.

Environment Degradation. Environment degradation is the large-scale despoliation of the earth and its resources, resulting particularly from human activities. Animal and human populations behave similarly and are subject to the same natural laws and consequences. When they multiply beyond the carrying capacity of their environments: they pollute their habits, exhaust natural resources necessary for survival, succumb to severe competition for remaining resources, and suffer from strife, malnutrition, disease epidemics and social break down. In last hundred years man has multiplied, polluted, used up, and charged the global environment on a scale comparable to that of a major geologic or climatic force. The final outcome will be the same as for other animals-a population crash-unless man exercises capacity so far seldom demonstrated and never on a global scale, to unite in reversing present destructive social and economic trends and in establishing more realistic ethics and goals based on ecological principles and insights.

Causes of Environment Degradation in Bangladesh

Population Explosion. Population in Bangladesh is growing at more than 2% per year. By the year 2050, Bangladesh's population is expected to rise to 17,000 per square kilometer. This rapid growth may lead to the disruption of traditional land and resource management system. Government is likely to face severe challenges to keep pace with increased infra structural and human needs. Thus serious environment damages may occur.

Poverty. There is a relationship between poverty and environment stresses; the poor are forced to address short-term needs, even if their actions contribute to the long term depletion and degradation of the resources. And the poor are often the most vulnerable and least able to cope with environmental changes and the impacts of natural disasters and hazards.

Increased Urbanization. Increased urbanization has negative impact on environment. Migration of rural people to the urban areas creates severe pressure on urban environment and utility services. Poor quality of education, health, sanitation, sewerage and other community services cannot be checked.

Deforestation. Trees protect against soil erosion, improve soil fertility by reducing the salt concentration, protect cash crops by providing shed or shelter and are a major source of animal feed. In Bangladesh 8% of the total land area consists of forests while it should be at least 25% for a balanced environment. The direct and indirect effects of deforestation are excessive flooding, cyclones and tidal surges, desertification, loss of employment and income etc.

Lack of Education and Consciousness of People. Low literacy rate and lack of public awareness constitute a damage share in population. For example using Polly bags in an unplanned manner has literally collapsed the drainage system in Dhaka City and defective vehicles have made the air of the city unhygienic for breathing.

Unplanned Industrialization. Bangladesh has welcomed the establishment of industries, which can contribute to economic growth and increased employment opportunities. But industrialization without long term integrated perspective planning may cause environmental hazards. For example establishing garments factories in city areas has become an environment threat for the people of Dhaka City. Industrialization has been the cause of many changes in the use of energy and water resources, in the pattern of human settlements, and is the social and economic context of health.

Improper Garbage System. Garbage collection services are inadequate or non-existent in most residential areas of our cities. It is accumulated on streets and in open spaces between houses, causing or contributing to serious health problems. Uncollected garbage also blocks drainage channels, increasing health problems related to flooding and waters logged soils. A study has found that because of lack of waste management, hospitals, clinics and diagnostic laboratories in Bangladesh ironically become places that could spread diseases, including HIV that might cause fatal AIDS.

Main Features of Environment Degradation in Bangladesh

Air Pollution. The major sources of air pollution have been identified as the particulate and gaseous matters, which get released by the burning of fossil fuels, such as coal, petroleum etc. These pollutants are poured in air mainly by at least five major fuel-burning sources i.e. automobiles, electrical power plants, industrial processors, heating plants and transportation industry. At present the state of air pollution is in an alarming form. The air of metropolitan cities in Bangladesh is being polluted by unburned fuel of two stroke engine vehicles and also by gases released by industries.

Water Pollution. Rivers are always been the dumping ground for unwanted materials. The oceans have been the dumping grounds for the most dangerous poisons including stockpiled nerve gases and radioactive wastes. Though water pollution is a localized problem but it is a serious one for all. Industrial extracts mainly pollute water of the river flowing through the adjacent areas like Burigonga and Shitalakshya at Dhaka, river Karnaphuli at Chittagong and Rupsha at Khulna. Highly toxic elements like chromium, arsenic, sulphur, and fatty acid being mixed up with this water. On May 7, 1997, varieties of fish were seen dying in the river Shitalakshaya. Industrial waste from some 100 factories on the both the banks are responsible for this fish epidemic. Increased urbanization and population growth lead to excessive consumption of ground water and thus lowering the ground water level. Recently arsenic has been introduced as one of the major pollutant of ground water all over the country.

Degradation of Soil. Since Bangladesh is an agrarian country, soil is an important resource for us. But it is being degraded over the years by improper and unscientific land management and excessive denudation of forests. Erosion of upper layer of soil by monsoon rain is causing infertile soils to come up over the surface. This eroded soil is also blocking the proper drainage system of the rivers. For excessive use of chemical fertilizer the natural and

organic elements of the soil are reducing day by day and consequently leading to infertility and degradation of the soil. Man made desertification and salinity is spreading rapidly throughout the country.

Natural Disasters. Bangladesh is a disaster prone country, frequently affected by flood, droughts, cyclone and storm surges.

Flood. Flood is a regular feature in the rainy season but due to improper land and agricultural management sometimes flood takes a devastating form and resulting in the loss of resources. Current year's flood in Cumilla, Feni, Laxmipur and Northern Districts of Bangladesh is much more severe and of longer duration. The estimated loss appeared much higher than that of the past years.

Cyclone and Storm surges. On short time scales changes in sea level occurs from storm surges. Such surges are caused by the change in atmosphere pressure and wind stress associated with severe tropical cyclones. In recent history the majority of global fatalities from surge events occurred in the countries bordering the Bay of Bengal and adjoining Andaman Sea.

Drought. Drought is a global phenomenon and has occurred throughout human history. In Bangladesh drought mostly occurs during the pre-monsoon and post monsoon times and causing severe damages, especially to agricultural production. Drought, i.e., inadequate or no rainfall for an extended period, causes hydrological imbalance and water shortage and crop damage.

Noise. Environment can be polluted by high-pitched sounds also. Human ear is habituated to 50 to 60 decibels sound; if this limit is crossed it will adversely affect our auditory power. Generally the sound of mike explosion, running mills and vehicles, electricity-producing generators not only hurt our auditory power but also cripple us physically and mentally. WHO has recommended limiting noise level to 45 decibels in city areas, 85% decibels in industrial areas. At present noise level in Dhaka City is above 60 and in some areas 90 decibels.

Ozone Layer Depletion. Ozone, composed of three atoms of oxygen, is concentrated in a zone between 20-30 kms above the earth. It shields the earth from harmful effects of solar UV radiation. This layer is decomposed by manmade substances like chlorofluorocarbon (CFCs), halons, carbon tetrachloride, methyl chloroform, methyl bromide etc.

Effects of Environmental Degradation in Bangladesh

Green House Effect and Global Warming. The atmosphere becomes warmer as various gases absorb the long wave radiation of heat from the earth, in a way similar to the heating of the air in a green house. The 'Green House Effect' prevents warmth being dissipated into space and keeps the overall temperature of the Earth higher than it would be without these gases.

Sea Level Rise. Scientific evidence strongly suggests that, on the decade-to-century time scale, global warming should cause sea level to rise. The possibility of future sea-level rise is of grave concern to Bangladesh, a developing country with a vast, low-lying, densely populated deltaic coast. Sea-level rise threatens, potentially, to exacerbate problems already experienced in the coastal zone of Bangladesh, including erosion and inundation of land, sanitation of soil and water, and, especially, flooding from storm surges. A recent study by the Bangladesh Center for Advanced Studies has identified the following major impacts of a one-meter sea level rise (SLR).

Population Displacement. Only the coastal effects of a one-meter SLR will displace over 11% of the population (more than 13 million people).

Area Inundation. More than 17.5% of the total land area (over 25000 Sq.km) will be totally inundated.

Existing Infrastructure Affected. Some 85 cities and towns, one major port (Mongla), over 800km of roads, 28 km of railways, 4200 km of coastal embankments, and over 7500 sq. km of areas will be invaded.

Coastal Islands Threatened. Many coastal islands covering an area 3500 sq. km will be inundated. These islands are already vulnerable to cyclones, the vulnerability will increase due to global warming.

Agricultural Production Loss. Over 3 million acres of breadbasket land consisting of 21% of the country's monsoon rice land, producing 16% of the country rice, will be lost due to inundation.

Coastal Shrimp Production. A one-meter SLR will destroy the coastal aquatic resources and Shrimp producing farms.

Climate Change. Due to green house effect and sea level rise, significant differences in climate may occur in Bangladesh. By 2030, the best estimated projection is for monsoon rainfall to increase by 10 to 15% and winter rainfall by 5 to 10%. However, the range of uncertainty is high. Increased rainfall could reduce drought frequency and severity, increase ground water recharge and decrease irrigation demand. On the other hand, increase rainfall could increase flood frequency and severity, but increased river discharges could decrease salinity penetration in coastal areas, thus helping to counteract salinity increases associated with a RSL.

Effects on Bio-diversity. Due to different types of environmental degradation like air and water pollution, soil degradation and deforestation, the divergent and huge biological resources are being affected. For example, because of using chemical fertilizer and pesticides in cultivating HYV rice, the traditional species of fishes, which were the habitats of the rice field during rainy season, have simply disappeared. This region is a major faunal and floral ground in the world. But due to population pressure and pollution, threats of disappearance of many species are in existence and the ecological imbalance may occur in near future. SLR threatens Sundarbans, the world's largest mangrove forest (5770 sq. km), with extinction. This

contains amongst the largest biodiversity of mangrove forest in the world. It is also the home of the Royal Bengal Tiger, which will vanish. Already there has been an alarming decline in tiger population plunging to mere 200 to 300, some expert believes, the number is less than declared.

Effects on Economy. Environmental degradation has negative impact on economy of a developing country like Bangladesh. We are now in a situation where the benefit of economic activity is being countered by the negative impact of pollution on the productivity of the natural system and their capacity to deal with pollution. Environmental damages such as soil erosion, loss of biological diversity, increased UV radiation through ozone depletion, sea level rise, flood, desertification etc lead to loss of productivity of farming land and create the threat of deterioration of life-support system. Thus a large number of farmers would not receive income from the present production season which may result in serious economic loss and poverty.

Effects on Health. Although poverty is the underlying cause of health problems all over the world, it is likely that the existing poor environment and health subsystem significantly contribute to the poverty system and vice versa. The most immediate problems in the world are ill health and premature death caused by biological agents in the human environment: in water, food, air and soil. They contribute to the premature death of millions of people, mostly infants and children, and to the ill health of disability of hundreds of millions more. The problem is most acute in the developing countries, which are mentioned below.

- a. Four million infants or children die every year from diarrhoea diseases, largely as a result of contaminated food or water.
- b. Over a million people die from malaria each year and 267 million are infected.
- c. Hundreds of millions suffer from debilitating intestinal parasitic infestations.

Effects on Security. In 21st century, environment security has emerged, alongside economic and military security, as the third pillar in international relations. Extensive deforestation, desertification, salination, denudation, water scarcity etc. are no longer seen as local, state or even regional problems, but have broader international ramifications. Many of the problems may be localized in their effects, but their causes often lie far beyond national borders. Degradation of environment may, thus, constitute the gravest danger to national security in contemporary times.

Governmental Strategies and Policies to Face the Challenges

Institutional Setup

The constitution of Bangladesh asserts that 'it shall be a fundamental responsibility of the state to attain, through planned economic growth, a constant increase of productive forces and a steady improvement in the material and cultural standard of living of the people' (Article-15). In pursuit of this goal of prosperity of the people through planned development, the individual and the society come to interact with the environment and have to take care of it.

In its early stage to fight environment pollution the Government of Bangladesh created an environmental cell in 1977 and in the same year legislated environmental pollution control act 1977. DOE was established in 1989 with a wider mandate and a separate ministry of environment came into being in the same year. DOE can take rapid actions against the polluting industries and violators of the environmental laws. The ordinance 1977 is replaced by the environmental conservation bill 1994 to empower the related agencies to enforce power given to them. After the establishment of MOEF the DOE is running as technical arm of the ministry and simultaneously is responsible for environmental development.

Past and Present Capacity Building Initiatives by the Government and Other Agencies

National Environmental Management Action Plan (NEMAP). NEMAP has been adopted by the MOEF. It has already identified the major environmental problems such as poor land management, deforestation, declining resources like fisheries and untimely flood, and has selected a number of geographical areas where urgent remedial action is needed to address one or more of these problems.

National Conservation Strategy (NCS). A major output of NEMAP is the NCS. The NCS has outlined detailed measures for conservation of natural and biological resources with the assistance of the International Union for the Conservation of Nature and Natural Resources (IUCN) in 1991.

Environmental Laws. 178 laws dealing with environment and ecological issues are being enacted since 1860, with provisions of fine and imprisonment against the violators. For example, as per the factory act of 1965, industrial units must have drains for liquid disposal and tanks for solid disposal. The article 15 of environment protection act 1995 has a provision for imprisonment up to 5 years with fine increases of industrial pollution. There are laws to prevent water pollution, like WASA act, DCC act and article 277 of Bangladesh Penal Code. Fish act 1950 is there to check killing of fish by poisoning. Procedures were being made under the environmental conservation act 1995, which would facilitate the DOE to take rapid actions against the polluting industries and violators of environmental laws.

Forest Policy. A National forest policy was adopted in 1979 to safeguard and manage forests.

Industrial Policy. Industrial policy of 1991 introduced for the first time the maintenance of the environmental balance in industrialization as well as the need to prevent environmental pollution.

Water Resources Management. Some 35 governmental agencies are responsible for the development of water resources, though the Bangladesh Water Development Board has primary responsibility.

Research Network in Agriculture. A national research network in agriculture is in place, coordinated by the Bangladesh Agricultural Research Council.

Flood Action Plan (FAP). GOB has formulated a FAP. The FAP addresses the environment issues by the concept of “controlled flooding”. The concept of ‘live with flood’ does not foster any economic growth. The technical expertise for reduction of flood levels are readily available. However, adequate resources and appropriate institutional set-up effective for all levels of the hazards are still lacking. Flood management approaches therefore, emphasizes the need for decreasing flood losses “by comprehensive structural and non-structural precautions and by organization of emergency services, including expanding the hydrological services to aid in forecasting flood and related events”. FAP has evolved an approach to sustainable development of Bangladesh. The Flood Action Plan Coordination Organization coordinates all the FAP activities.

Bilateral and Multilateral Initiatives. In the recent past, World Bank, Asian Development Bank and UNDP have started integrated environmental concerns into their developments programs. The Economics and Social Commission for Asian and the Pacific (ESCAP) have recently produced a report entitled ‘Coastal environmental management plan for Bangladesh. A recent trend in the policies of several bilateral development partners is to channelize environmental activity through NGOs. This is a useful policy, considering the need to encourage greater public participation in an issue, which is of common concern.

International Agreement. Bangladesh has so far signed, ratified and acceded to number of international conventions, treaties and protocols related to environment. The important ones, among them, signed at the Paris Climate Agreement-2016, UN Conference on Environment and Development (UNCED), held at Rio de Janeiro, Brazil in 1992, are the Agenda 21, Climate Change Convention and Biodiversity Convention. The Agenda 21 is a basis to attain sustainable development through policies initiated and co-ordinate at the national level.

Participation of NGO’s. Bangladesh has taken a number of steps to implement NEMAP with active participation of NGO’s and private sector like ADAB, CEN, BCAS, CCDB, BRAC etc. The main development partners like NORAD, UNDP, CIDA, ADB, UKAID, USAID and World Bank is ready to furnish financial support for the implementation of NEMAP.

Objectives and Strategies of the Government of Bangladesh to Meet Environmental Needs

Goals and Objectives. In order to promote, nurture, protect and expand natural resources and to link all development activities with environment for improving the quality of life, the Government aims at the following objectives:

- a. Promoting sustainable environment management in pursuit of quality livelihood and to alleviate poverty.
- b. Promoting participatory, community-based environmental resource management and environmental protection (considering the poor’s access, equity as well as gender issues).
- c. Ensuring active participation of the poor, especially women, in environment protection activities.
- d. Promoting environment-friendly activities in development interventions.
- e. Preserving, protecting, and developing the natural resource base.
- f. Strengthening the capabilities of public and private sectors to address environmental concerns.
- g. Controlling and preventing environmental pollution and degradation related to soil, water and air.
- h. Creating public awareness for participation in environment promotion activities.
- J. Conserving non-renewable resources and sustaining auto and Eco-generation of renewable resources.

General Strategies. Government will include the following strategies.

- a. National Environment Council will be activated.
- b. Environment Committees at district and thana levels with people’s participation will be formed and activated.
- c. MOEF will be strengthened in the light of the existing Environment Policy and Action Plan in order to co-ordinate, monitor and oversee all NEMAP implementation activities by various sectoral ministries and agencies.
- d. Rules, regulations and guidelines under the Environmental Protection Act (EPA), 1995 will be finalized earliest in order to ensure effective enforcement of EPA.
- e. Sectorial legislation is to be reviewed and formulated in the light of Bangladesh’s commitment to international conventions and protocols on environment.
- f. ‘Polluters Pay Principle’ will be followed in order to ensure strict compliance of environmental legislation.
- g. Incentives in the form of tax rebate, tax holiday, etc. will be provided and the incremental cost incurred by the environmental-friendly entrepreneurs will be met in various forms.

h. 'National Environment Fund' will be established in order to provide assistance to the victims of environmental degradation caused due to natural disaster and anthropogenic activities.

j. Environmental Impact analysis will be continued in processing development projects for approval of the Government.

Implementing Strategies. Major thrusts for environment protection will include the following:

- a. Training of technical personnel for control of pollution.
- b. Environment education in school, colleges and universities, and creation of environmental awareness among people.
- c. Land use planning.
 - d. Optimum utilization of water resources.
 - e. Coastal and social afforestation.
 - f. Conservation of genetic resources.
 - g. Wild life preservation.
- h. Development of agricultural resource base through bio-diversity and soil conservation.
 - j. Conservation of coastal and marine resources.
 - k. Industrial pollution control.
 - l. Preservation of living aquatic resources.
 - m. Disaster mitigation measures.

Critical Analysis on the State of Environmental Degradation in Bangladesh

There is sufficient organizational and legal set up in Bangladesh to fight against environment pollution. But the question is how far pollution is being controlled. There are 178 laws dealing with environmental issues, but those virtually appear unfruitful due to lack of enforcement. It is felt that environment pollution is going more or less unchecked in Bangladesh. Although, pollution control is an elaborate and long-term procedure. However, the offenders like chemical factories and faulty motor vehicle users may be brought under existing legal consequences.

Weak Areas of National Measures

Apathy of the Bureaucracy. Though successive governments have undertaken reform initiatives, still scarce recognizable changes have been achieved to convert these bureaucrats into development workers. Thus, whatever positive policies, the government tries to implement in environment sector main impediment is it get obscured by the bureaucracy itself.

Absence of Political Commitment. At the political level there has been commitment to the environment, but without a clear direction. To get popular support, all the political parties, whether in power or in opposition neglect grave environmental issues.

Lack of Resources. Due to poverty and population pressure Bangladesh has got low resource availability. Lack of internal resources retards investment in remedial and other environment- enhancing investment, e.g. for industrial pollution, upgrading of water supply or sanitation. Also the donor agencies that finance most development projects are interested for technical and consultancy assistance for the environment.

Absence of Infrastructural Setup of the Institutes. Administrative capabilities to check environment degradation often appear weaker and overburdened. With a number of environment laws the level of observance and enforcement remains disharmonized and fruitless.

Lack of Coordination between the Government and Implementing Agencies. It prevails lack of coordination between the line ministries and their attached departments and other implementing agencies in implementing environment policies.

General Awareness and Education. Bangladesh has a literacy rate of 76.36%. The grass root people remain unaware of environmental degradation and means to fight them. So the people pollute the environment due to ignorance and negligence.

Projected Environmental Degradation Scenario in Bangladesh

Different types of environmental degradation like air pollution, global warming, sea level rise, ozone layer depletion etc. are in existence with their vigorous strength to effect adversely. Though governmental policies and initiatives are there, but are insufficient. If the situation remains unchanged, environment degradation is likely to have more deteriorating effects in future.

Environment and Health. Human health ultimately depends on society's capacity to manage the interaction between human activities and the physical and biological environment in ways that safeguard and promote health but do not threaten the integrity of the natural systems on which the physical and biological environment depends. This includes maintaining a stable climate and continued availability of environment resources (soil,

fresh water and clean air). It also includes continued functioning of the natural systems that receive the wastes produced by human societies-domestic, industrial and agricultural-without exposing people to pathogens and toxic substances.

Deforestation. The destruction of forest is pushing precious plants to extinction. Birds and animals habitats are destroyed subsequently leading to their extinction. The forests of Bangladesh are dwindling at the rate of 60000 acres per year by plunderers, forest fires, sometimes started deliberately and at others by unwitting wood cutters, whatever the cause may be we are not only losing luxurious jungles but various species of animals, birds and plants. Rainforests are destroyed very fast, at the present rate of denuding there won't be any left in about 50 years. The consequences will be catastrophic for mankind.

Green House Effect and Sea Level Rise. According to a prediction of environment Protection Agency (EPA) of USA, the global mean temperature will rise by 5° c in course next 80 years due to the green house effect. A 5° c rise in average global temperature will cause large scale melting of the polar ice cap, causing worldwide inundation of most of the coastal regions of the world. It is estimated that by 2050 the sea level rise could be about 300 MM. Consequently, low lying areas like Bangladesh, Maldives, Holland, Indonesia etc. Will be submerged under water. In case of Bangladesh, about 30% land is predicted to be less than 10 feet deep water. In addition to inundation this will also cause severe drainage problems aggravating the flood situation. The warmer weather due to green house effect will also adversely effect of growth of production of food grains.

Urbanization. Increased urbanization has negative impact in Bangladesh. The physical expansion will cover most of the low-lying areas. The process will produce a single ecological system. Under such conditions, the city service facilities will be heavily burdened. The expansion would probably increase the risk of environmental hazards and degradation.

Problem in Managing Water Resources. Domestic water use in developing countries will need to rise sixfold over the coming four decades. The bulk of demand will come from urban areas, where population will triple. This increase will place severe strains on surface and ground water supplies.

Conclusion

Environmental degradation is a threat to biological, ecological and economic resource base. Bangladesh, as one of the developing country suffer from different types of environmental degradation. Both the imminent and long-term effects of environmental degradation are adverse for human civilization. The GOB is trying to cope with the environmental challenges by determining strategies and policies, and establishing organizational and legal setup.

Poverty and population explosion are the prime causes of environmental degradation in Bangladesh. Due to poverty, illiteracy, increased urbanization, deforestation etc. take place, which also work as the factors of environmental degradation. Also improper garbage system, industrial setups in urban areas etc. made the city life unhygienic.

At present, state of air pollution in metropolitan cities in Bangladesh, especially in Dhaka remains in an alarming form. Water pollution in the rivers is producing adverse effects on fisheries and ecological balance is being hampered. Excessive use of chemical fertilizer leads to infertility of the soil. Manmade desertification and salinity also cause degradation of the soil. Natural disasters remain as common phenomena in Bangladesh in every year. They not only destroy resources of the country but also hamper the environment. The noises generated by various sources badly affect our auditory power and cripple us physically and mentally.

Effects of environmental degradation in Bangladesh would be more severe than that of other nations of the world. Due to green house effect, the mean temperature is likely to increase, which will cause sea level to rise. Being a low-lying country, SLR will cause inundation of present coastal zone, population displacement, agricultural production loss etc. Biological agents in the human environment cause ill health and premature death of mother and child: in water, food, air and soil. Consequently all these effects lead to the deterioration of national economy.

GOB has determined goals, objectives and strategies in the fifth five- year plan. The primary objective of the government is to promote sustainable environment management and to ensure participation of the grassroots level people. To attain these objectives, different strategies are to be initiated. The most important strategies would be implementation of NEMAP, finalizing rules, regulations and guidelines under the EPA etc. Environment committee in the district and thana levels would be formed to ensure peoples participation in environment protection.

Environmental pollution is becoming severe day by day in Bangladesh, though there are many laws, strategies and policies. It is true that pollution control is an extensive and long-term procedure. Absence of political and administrative commitment and lack of coordination between different implementing agencies are common phenomena in implementing any strategy. The government also suffers from low resource availability and poor institutional setup.

Recommendations

Following recommendations are suggested to meet environmental challenges:

- a. Environment-related thoughts may be included in the national curriculum, especially in the context of primary and secondary school curriculum. Also non-formal education may be introduced for the people who don't have access to formal education to ensure maximum environmental awareness.

- b. Environment Impact Assessment (EIA) may be made mandatory for all development projects in the coastal area.
- c. Climate change must be considered in social, economic and environmental policies and actions. Scientific research related to climate system should be enhanced.
- d. Strengthening land management and land use planning, improving inputs and minimizing adverse impacts of the fertilizer and pesticides are necessary in agricultural sector.
- e. Air pollution from vehicles can be reduced by improving auto engines and exhaust system of vehicle and by using lead free gasoline and low- sulfur diesel. Regulations over automobile exhausts may be strengthened.
- f. For good health and environment following may be emphasized:
- (1) Increasing access to pure water and safe sanitation. (2)
 - Switching to cleaner household fuels.
 - (3) Controlling insects through environmental management.
 - (4) Stopping the trade in banned or restricted chemicals.

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