

Chapter 1: Context and Objectives

I. Environmental Challenges to Poverty Reduction

1. Despite poor initial conditions, a widespread perception of poor governance, confrontational politics, and vulnerability to natural disasters, Bangladesh has achieved steady economic growth of 4-5% annually over the last decade. At the same time, annual population growth has been reduced from 2.5% in the 1980s to 1.7% since 1990. As a result, annual per capita GDP growth has increased from 1.6% in the 1980s to 3.7% in 2004, although this is still below the regional average of 5.0%. While half the population still lives in poverty, this represents an improvement from 59% in 1990, and with the country self-sufficient in food grains, food security has also improved, even for the very poor.

2. Bangladesh has also demonstrated significant success in achieving the human development targets of the Millennium Development Goals (MDGs). Primary school enrolment has risen to 98%, with enrolment rates now slightly higher for girls than boys. By 2000, infant and child mortality rates had been significantly reduced to 30 and 60 per thousand live births, respectively. With the second lowest infant mortality rate and third lowest child mortality rate in the South Asia Region, Bangladesh is set to meet the MDG target of a two-thirds reduction by 2015 over 1990 levels. In reaching this target, however, and in making further progress towards other poverty reduction and human development goals, over-coming environmental challenges to human health and natural resource productivity will become increasingly important.

3. The linkages between environmental degradation and poverty are explicitly recognized in Bangladesh's National Strategy for Accelerated Poverty Reduction, which emphasizes both the dependency of the poor on natural resources, and the vulnerability of the poor to environmental health risks. The Strategy highlights a number of natural resource issues as being of particular concern to the poor, including the degradation of agricultural land, and the unsustainable use of common resources such as fisheries. Among the environmental health risks to which the poor are exposed, the Strategy identifies both indoor and outdoor air pollution, drinking water contaminated bacteriologically and with naturally-occurring arsenic, as well as a growing burden of toxic waste from urban, industrial and agricultural sources. While recognizing that economic growth is essential to reduce poverty, the Strategy cautions that "A careful balancing act must be orchestrated where economic growth is maximised without compromising environmental protection..."⁴

Environmental Health Risks: a Major Contributor to the Burden of Disease

4. While the total burden of disease in Bangladesh is comparable to other South-East Asian countries with high mortality rates, the share attributable to respiratory infections and disease is about one third higher than the average for these countries, and the proportion caused by diarrhoeal disease is almost double the average. Since both are associated with poor environmental conditions, the relatively higher prevalence of respiratory infections and diarrhoeal disease highlights the importance of focusing attention on environmental quality in Bangladesh. In addition to these traditional environmental health risks, Bangladesh is also

⁴ National Strategy for Accelerated Poverty Reduction, 2005, Section 5.H

faced with rapidly increasing industrial and urban environmental health risks. Not only is Bangladesh experiencing the fastest industrial growth rate in South Asia, but the rate of urbanization between 1990 and 2000 was double that of India and Pakistan, and the share of the urban population living in slum conditions is the second highest in the region. Almost all future population growth, forecast to be some 100 million over the next fifty years, is expected to occur in urban areas, underlining the importance of addressing urban and industrial contamination. This report estimates that environmental health risks may account for as much as 22% of the total burden of disease in Bangladesh.

Natural Resource Productivity under Threat

5. With population density approaching one thousand people per square kilometre, among the highest in the world, and growing at 1.7% annually, pressure on natural resources in Bangladesh is necessarily high. Two-thirds of the land area is under crops, the highest proportion in South Asia, and the share under forest cover is the second lowest in the region. Protected areas cover the smallest share of any country in South Asia, at less than 0.5% of the total area compared with an average of nearly 8% for Asia as whole, although pressure on biodiversity is close to the regional average, with approximately 17% of mammal species and 4% of bird species under threat. Pressure on wetlands and aquatic life is a particular concern in Bangladesh, as booming urban and industrial growth leads to land reclamation and pollution, and fishing effort increases to meet growing demand, with fish continuing to provide more than half the animal protein in the national diet.

6. Agriculture accounts for some 23% of GDP and more than half of total employment, so the ability of soil to sustain agricultural production is an issue of national concern. Cropping intensity in Bangladesh is the highest in South Asia, having increased from below 140% to more than 175% over the last thirty years⁵ as the introduction of short duration cereal varieties and winter irrigation facilitated double- and triple-cropping. Pressure on agricultural land is further intensified by urbanization and infrastructure development, as a result of which the cropped area is declining at about 1% annually. To support this intensity of cultivation, rates of fertiliser application are the highest in the region;⁶ nevertheless, surveys and soil tests provide evidence that agricultural inputs are imbalanced and nutrient mining is occurring.

7. Bangladesh has limited natural forest cover, at about 10% of land area, down from 20% in the 1960s. Large areas of the Chittagong Hill Tracts have been degraded, the Sundarbans mangrove forest is in decline, and most parts of the plain land Sal forest are now shrub lands. The deforestation rate in the 1980's was 3.3% per year, but in 1989 the Government issued a moratorium on felling in natural forests which continues to date. As a result of this ban and social forestry initiatives, official figures indicate a net rate of reforestation of about 1% annually during the 1990's. The moratorium also stimulated private sector timber production, which now accounts for over 80% of local timber marketed in Bangladesh, and satellite imagery suggests as much as 35% of land area has 10% or more tree cover of all types, including private plantations.

⁵ Bangladesh Bureau of Statistics. Cropping intensity calculated as gross sown area divided by the cultivated area.

⁶ FAO, 2001. Measured as kilograms of nitrogen, potash and phosphate per hectare of cropland.

8. As detailed in the Country Water Resources Assistance Strategy,⁷ water quality and quantity are key determinants of outcomes in many sectors of the Bangladeshi economy, from industry and transport, through agriculture and fisheries, to human health. About 80% of renewable water is received from transboundary inflows, and as the lower riparian, Bangladesh is impacted by upstream diversions and abstractions that reduce water availability during the dry winter months, and by upstream discharges and runoff that degrade the quality of water entering the country. Water quality and dry season flows are further impaired by industrial growth and urbanization within Bangladesh, with particularly significant impacts on fisheries, inland water transport and drinking water supply.

Vulnerability to Climate change

9. Bangladesh is highly vulnerable to the projected impacts of climate change, as these are likely to increase the already high risk of disasters, and exacerbate existing vulnerabilities. Global warming will cause changes such as higher temperatures, sea level rise and changing rainfall patterns, as well as more abrupt effects, such as an increase in the intensity and frequency of extreme events such as floods, storm surges and cyclones. An increase of one degree centigrade in ocean temperature could increase tropical cyclone intensity by as much as 10%,⁸ while temperature alterations associated with climate change are already affecting the rate of snowmelt in the Himalayas, which is expected to lead to increased flooding. It is predicted that by the year 2030, an additional 14% of the country will become extremely vulnerable to floods, and currently vulnerable areas will experience higher levels of flooding. Indeed, significant areas may be permanently inundated.⁹ At the same time, some areas of the country may be at greater risk of drought and food insecurity during the dry season, and agricultural productivity in coastal areas may be compromised by increasing salinity. While climate change does not form a focus of this report, the scope and scale of Bangladesh's vulnerability to climate change demand that assessment of the associated risks and planning for adaptation remain a priority for further work, building on the recently completed National Adaptation Programme of Action.¹⁰

II. The Response of the Government of Bangladesh and Development Partners

10. The need to protect the quality of the environment has been recognized since the birth of Bangladesh, with the Water Pollution Control and Wildlife Preservation Acts being established in 1973, shortly followed by the Environmental Pollution Control Ordinance. It was not until 1989, however, that a separate Ministry dealing exclusively with environment was created, drawing together the Forest Department from the Ministry of Agriculture, and the Department of Environmental Pollution Control (renamed the Department of Environment) from the Local Government Division.

11. Following the creation of the Ministry of Environment and Forests (MoEF), the Government took a number of important policy steps to guide the strengthening of environmental management, starting with the development of the National Conservation Strategy in 1991, and shortly followed by the adoption of National Environment Policy in 1992, the National Forest Policy in 1994, and the National Environment Management Action

⁷ World Bank, 2005

⁸ World Bank, 2000

⁹ BCAS and DoE, 2001

¹⁰ MoEF, 2005.

Plan (NEMAP) in 1995. At the same time, the need to broaden the institutional framework for environmental management was recognised, leading to the creation of the National Environment Council in 1993, which is headed by the Prime Minister and is designed to provide guidance on environmental issues to line Ministries.

12. Building on these policy and institutional foundations, an enabling legal framework was created, anchored in the Environmental Conservation Act of 1995, and elaborated in the Environmental Conservation Rules of 1997. Mechanisms for enforcement of these provisions were strengthened through the Environment Court Act of 2000, and have since been clarified through a series of amendments to the Environmental Conservation Act and Rules. Following the development of the NEMAP, the late 1990's also saw concerted efforts by development partners to prepare a series of operations designed to support the strengthening of environmental management in Bangladesh. Among the larger donor-supported initiatives implemented by MoEF were the Sustainable Environment Management Programme supported by UNDP, the Sundarbans Biodiversity Conservation Project supported by ADB, the Bangladesh Environmental Management Project Supported by CIDA, and the Air Quality Management Project supported by the World Bank. As in other areas of Bangladeshi public life, civil society has also exerted an important influence on environmental decision-making, with a range of NGOs now actively addressing both 'green' and 'brown' environmental issues.

III. Objectives of the Country Environmental Analysis

13. The Government of Bangladesh's commitment to the MDGs requires it to take action to address a range of environmental challenges, in particular to reduce environmental health risks and to ensure the environmental sustainability of economic growth. As described above, significant progress has been made in establishing the policy, institutional and legal framework necessary to strengthen environmental management, and a number of initiatives have been successfully implemented, such as the elimination of leaded gasoline, the phasing-out of two-stroke three-wheelers from the streets of Dhaka, and the ban on thin polythene bags. More broadly, however, practice lags behind the Government's good environmental intentions.

14. The Country Environmental Analysis (CEA) is intended to support the Government in more effectively addressing the environmental challenges to poverty-reducing growth. The process of developing the CEA helped promote recognition in the National Strategy for Accelerated Poverty Reduction of the linkages between environmental degradation and poverty. Building on this recognition, the objective of the CEA is to help reduce environmental constraints to economic growth by recommending measures to (i) reduce the environmental health risks borne by the poor, and (ii) promote more sustainable management of the natural resources on which the poor depend. As well as informing Government decision-making, these recommendations are designed to guide the support provided by development partners, including the World Bank's program of technical assistance, investment operations, and development policy lending.

IV. Preparation of the CEA: Scope and Process

15. The CEA was jointly developed by MoEF and the World Bank, beginning with a review of environmental priorities for poverty-reducing growth. Based on this initial scoping exercise, it was agreed that the CEA should focus on the following five priority areas:

- environmental health;
- surface water quality in Dhaka;
- capture fisheries;
- soil quality; and
- institutions for environmental management.

The selection of these priority environmental concerns was based not only on their relevance to poverty reduction, but also considered the additional value of further analysis, and the scope for subsequent action. Regarding the management of forest resources, for example, a Forestry Sector Review was recently completed¹¹, and while state-owned forests are locally important for poverty reduction, about 80% of local timber marketed in Bangladesh originates from village or private lands rather than Government forests¹², a fact reflected in satellite imagery showing forest cover to be four times that of official statistics.¹³

16. An initial analysis of existing and proposed policies as these affect the identified environmental priorities, and an assessment of the institutional capacity for environmental management in these areas, was discussed during a series of consultative discussions with key stakeholders, held in Dhaka in December, 2004. The analysis was refined based on these discussions, and the draft CEA was discussed in July, 2005, at a workshop in Dhaka convened by MoEF, and inaugurated by the Minister of Environment and Forest. The workshop was extremely valuable in framing the final version of the CEA, which reflects the recommendations arising from the working sessions.

V. Structure of the Report

17. The following chapters of this report present the analysis of the policy and institutional factors affecting management of the five priority environmental concerns selected in scoping the CEA, as follows:

- Chapter 2 – Environmental Health;
- Chapter 3 – Management of Water Quality in Dhaka;
- Chapter 4 – Management of Capture Fisheries;
- Chapter 5 – Sustaining Soil Quality;
- Chapter 6 – Institutions for Environmental Management ;
- Chapter 7 - Environmental Constraints to Growth: Priorities for Additional Action.

¹¹ Bangladesh Forest Department, The Forestry Sector Review Report, 2004.

¹² Intercooperation, Review of Wood Marketing in Bangladesh, June 2002.

¹³ World Resources Institute, 2005. The difference between official statistics and satellite imagery of forest cover for Bangladesh is twice the average for Asia.

Each chapter concludes with recommendations for action by key stakeholders to strengthen environmental management. Priority areas for future World Bank support are identified in the final chapter, based on an assessment of the constraints to growth and poverty reduction imposed by the selected sources of environmental degradation, as well as consideration of the coverage of current initiatives to strengthen environmental management.