

PEOPLE'S REPUBLIC OF BANGLADESH

An Evaluation of:
Economic Costs of Climate Change,
Equity and Justice, Arguments and
Strategies, and Overall Policy Design

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Economic Costs of Climate Change

Section One

Adaptation Action Overview

Since the 1970s, the Government of Bangladesh, with the support of development partners, has invested in:

- ❑ Flood management schemes to raise the agricultural productivity of many thousands of km of low-lying rural areas and to protect them from extremely damaging severe floods;
- ❑ Flood protection and drainage schemes to protect urban areas from rainwater and river flooding during the monsoon season;
- ❑ Coastal embankment projects, involving over 6,000 km of embankments and polder schemes, designed to raise agricultural productivity in coastal areas by preventing tidal flooding and incursion of saline water;
- ❑ Over 2,000 cyclone shelters to provide refuges for communities from storm surges caused by tropical cyclones and 200 shelters from river floods (\$US150,000);
- ❑ Comprehensive disaster management projects, involving community-based programs and cell phone based early warning systems for floods and cyclones;
- ❑ Irrigation schemes to enable farmers to grow a dry season rice crop in areas subject to heavy monsoon flooding and in other parts of the country, including drought-prone areas (used a portion of allocated \$50 million);
- ❑ Agricultural research programs to develop saline, drought and flood-adapted high yielding varieties of rice and other crops, based on the traditional varieties evolved over centuries by Bangladeshi farmers (used a portion of allocated \$50 million);
- ❑ Coastal 'greenbelt' projects, involving mangrove planting along nearly 9,000 km of the shoreline.

Adaptation Examples



A house in Sona Molla village



A multi-purpose cyclone shelter

Expected Costs of Adaptation Actions

- ▣ Over the last 35 years, the Government of Bangladesh, with the support of development partners, has invested over \$10 billion (at constant 2007 prices) to make the country less vulnerable to natural disasters.
- ▣ Direct annual cost to the national economy of natural disasters over the last 10 years (prior to 2008) in damage and lost production is estimated to be between 0.5% and 1% of GDP (which is currently increasing at a rate of 6% annually).
- ▣ As a developing country with the right to continue economic development, these costs are likely to increase in absolute terms and as a proportion of GDP if climate change isn't factored into long-term economic planning.

More Adaptation Actions and Costs

Climate Change Action Plan

- ▣ In addition to the Government of Bangladesh's 2005 National Adaptation Programme of Action (NAPA), the Government has also developed a 10-year Climate Change Action Plan program to build the capacity and resilience of the country to meet the challenge of climate change.
 - The Ministry of Environment and Forests is currently working out the cost of implementing the 10-year Action Plan, in consultation with Line Ministries.
- ▣ Cost-effective priority programs for immediate implementation and others to be started in the next 5 years have been identified, with special attention on the needs of the poorest and most vulnerable in society, the need to create an enabling environment to promote climate resilient investment, and on ensuring that knowledge, data and experience on adaptation is shared with other countries in the region.

More Adaptation Actions and Costs

Climate Change Action Plan (continued)

- ▣ It is estimated that a \$500 million program will need to be initiated in Years 1 and 2 (for immediate actions such as strengthening disaster management, research and knowledge management, capacity building and public awareness programs, and urgent investments such as cyclone shelters and selected drainage programs).
- ▣ The total cost of programs commencing in the first 5 years could equal an estimated \$5 billion.

More Adaptation Actions and Costs

National Climate Change Fund

- ▣ Recently, the Government of Bangladesh has also established a National Climate Change Fund, with an initial capitalization of \$45 million, focused mainly on adaptation.

Common Cause Partnerships

- ▣ Bangladesh is also trying to find common causes with neighboring countries and regions to manage climate change impacts through regional action plans, as demonstrated in the 2008 SAARC Ministers of Environment meeting, held in Dhaka.
- ▣ Bangladesh is seeking to improve cooperation with neighbors on key issues such as water security.

Mitigation Actions

- ▣ Despite Bangladesh's minute contribution to the generation of GHG emissions, its citizens are still finding ways to curb GHG emissions.
- ▣ In efforts to mitigate GHG emissions, the Government of Bangladesh has:
 - emphasized energy efficiency as well as clean energy and renewable energy development, particularly solar homes and biogas plants (which aim to use methane from waste dumps);
 - implemented a major nationwide program of social forestry
 - planned coastal 'greenbelts' as a key adaptation-mitigation strategy;
 - requested the transfer of state-of-the-art or BAT technologies from developed countries to ensure a low-carbon growth path;
 - committed to reducing GHG emissions (such as methane) from agriculture and urban waste through better agronomic and waste management practices.

Mitigation Actions

Information and Communication Technologies (ICT)

- ▣ Bangladesh is also exploring the use of ICT as a cross-cutting tool to limit and reduce GHG emissions across sectors.
 - ICTs can be a sustainable way of mitigating GHG emissions since ICTs contribute between 2 to 2.5 percent of the global GHG emissions annually (just under one Gigatonne of CO₂ equivalent).
 - 40 % of this is the energy requirements of personal computers and data monitors, with data centers contributing another 23 %.
 - International Telecommunications Union's (ITU) work in this area focuses on the use of ICTs (including weather satellites, radio and telecommunication technologies and global standards) for weather forecasting, climate monitoring and predicting, detecting and mitigating the effects of natural disasters.

Mitigation Actions

Nuclear Energy

- ▣ As of March 2009, the Government of Bangladesh has formulated plans to construct a nuclear power plant capable of supplying 600 MW of power in the western region of the country.
- ▣ This nuclear plant is being constructed to provide a renewable way to alleviate some of Bangladesh's massive electricity shortage of nearly 2,000 MW.
- ▣ Construction of the plant should begin some time in the next 5 years.

Mitigation Actions

Cook Stove Efficiency

- ▣ An organization called Practical Action has also taken action in Bangladesh to reduce GHG emissions through the dissemination of cook stoves.
- ▣ In addition to GHG emissions reduction, this project will provide increased knowledge of sustainable biomass, improved cook stove technology, and the spread of local entrepreneurial modeling of stove dissemination to several communities.
- ▣ Financial support for this project comes from Climate Care, a UK based organization that collects financial contributions from individuals and businesses in the UK and other Western countries concerned about the amount of GHG their activities are creating.

Mitigation Actions

Clean Development Mechanisms (CDMs)

- ▣ Bangladesh has two CDM projects concerned with solar energy and waste management.
- ▣ The Government of Bangladesh wants to increase the number of future CDMs and experiment with the generation of carbon credits in order to gain entrance into the global carbon market.

Expected Costs and Consequences of No Action

- ▣ If current greenhouse gas emissions are not significantly reduced and no steps are taken to globally mitigate climate change, the people of Bangladesh will either perish or become “climate refugees.”
- ▣ Adaptation to climate change has already placed a massive burden on Bangladesh's development budget.
- ▣ International support is essential in aiding Bangladesh with climate change adaptations.
- ▣ Bangladesh is seeking the strong political commitment, financial resources, and support of the international community to assist in implementing its long-term climate-resilient strategy.

Policy Initiatives and Global Demands

In 2005, the following statements were made by the Bangladesh State Minister for Environment and Forest, Jafrul Islam Chowdhury:

- ▣ He reiterated Bangladesh's stand that it is high time for the global community to move from climate change studies and assessments to on-the-ground actions for combating climate change across the world.
- ▣ At this same event, he suggested at the ministerial segment of the conference the possibility of developing micro-insurance for the poor using institutions involved in micro lending such as the Grameen Bank in Bangladesh.

Policy Initiatives and Global Demands

- ▣ Jafrul also urged the rich countries to immediately further reduce their greenhouse gas emissions because much more will be required to reverse the impacts of climate change.
- ▣ He said in addition to curbing greenhouse gases, Bangladesh will require more assistance to adapt to the unavoidable consequences of climate change.
- ▣ He elaborated, “It is not us who created this situation; it should not be us who pays the price for the rich countries’ wealth. I believe that it would be appropriate for the rich countries to further progress on technology transfer and to make generous contributions to the adaptation funds set up under the UNFCCC and to further bilateral funding of adaptation”.

Policy Initiatives and Global Demands

Statements by the Minister (continued)

- The Minister also made intervention in the panel on technology and climate change and highlighted the problem of climate change that has been created through the use of old and inefficient technology – especially for transport and the generation of energy from fossil fuels – in those countries that constitute today's industrialized world.
- The minister also declared that, “as a developing country we have no obligations to reduce greenhouse gases.”
- “We have a right to development”, he said. “However, we are aware of the problems that the old way of using technology has created and we are striving towards finding a better development path -- a de-carbonized development path.”
- Bangladesh, he said, is working with a two-pronged approach. On the one side, we are introducing climate-friendly technologies for mitigation of greenhouse gases. On the other side, we are developing and introducing new technologies to help us adapt to climate change.

Policy Initiatives and Global Demands

Least Developed Countries' Needs

- ▣ A statement given by Bangladesh, at the UN General Assembly in February 2008, on behalf of the LDCs, **emphasized the need for immediate international support to build the LDCs resilience to global warming and climate change.**
- ▣ The resources currently available for adaptation are grossly inadequate to meet the needs of the LDCs, who will bear the brunt of climate change.
- ▣ **Adaptation is the priority for Bangladesh in the short to medium term.**

Policy Initiatives and Global Demands

- ▣ In the long-term, however, climate resilience will require deep cuts in greenhouse gas emissions by the "Annex-1 parties", including the developed industrialized nations.
- ▣ To achieve this, Bangladesh will work hard to ensure that the current round of climate change negotiations, leading to the establishment of a fair and equitable post-Kyoto Framework and outcome for developing countries at the 2009 Copenhagen Conference of Parties (COP-15), is successful.

Global Targets

- ▣ Bangladesh would like to see:
 - A shift in the energy sector from reliance on fossil fuels to renewable energy (excluding a heavy reliance on biofuels because it perpetuates soil degradation, interference with carbon sinks, and infringes on food security)
 - A 50% minimum reduction in GHG emissions by 2050
 - An increase in the capture and storage of CO₂