

Climate Change: Implications and Remedies for Bangladesh

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1. Introduction

Climate changes very slowly as essential outcome of natural climatic evolution. But due to harmful effect of global warming the trend of climate change has got added impetus over the recent decades and resulted in rapid alteration of the timing, pattern and levels of rainfall and temperature across the globe. Experts predict that one-fourth of Earth's species will be demolished for deaths by 2050 if the warming trend continues at its current rate. Though this problem is originated due to negative consequences of unplanned technological development and egotistic activities of some developed and developing countries, the worst victims of it are the poor people residing at Scandinavian countries, Sub-Saharas Africa and South Asia. However, international forums like UNFCCC, IPCC, FAO, COP-21 consider Climate Change as a serious concern for the whole globe and urge to take immediate collaborative actions to meet the challenges.

2. Possible risks of climate changes

Climate Change is resulted in increasing frequency and severity of natural disasters with adverse impact on natural ecosystem and quality of human survival. The possible major risks of global warming linked to climate changes are:

(a) Excessive ice melting that aggravates:

- rising of sea level and inundation of coastal areas;
- frequency of cyclone, floods and river bank erosion;
- salinity intrusion in agricultural lands;
- shortage of pure drinking water;
- increased water logging scenarios
- undesired change in bio-diversity and loss of wildlife.

(b) Unpredicted rainfalls that is liable for:

- deforestation;
- droughts and decrease productivity in agriculture;
- change in cropping pattern;
- unemployment of agricultural laborers and scarcity of food (near famine).

(c) Risks related with health that are derived from:

- increased incidence of water-borne and air-borne diseases;

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- bacteria, parasites and disease vectors of warmer and wetter conditions.
- (d) Loss/lack of entitlements that comprises:
- loss of standing crops;
 - loss/damage of livestock/dairy/poultry/fisheries;
 - loss of trees/fruits;
 - loss/damage of vegetable garden.
- (e) Disruption of social net-work that includes:
- unemployed and poverty;
 - insecurity, crime, violence;
 - migration of people;
 - the immediate disruption of social net-work make poor, destitute, vulnerable, disable, elderly people, women and children more distressed and helpless.

3. Context of the Climate Change in Bangladesh

Bangladesh is a low-lying deltaic island criss-crossed by over 270 rivers and tributaries.

Its significant features susceptible to global warming and climate change are:

- exceptional geographical location and monsoon climate;
- topography and land characteristics;
- huge network of rivers and channels;
- enormous discharge of water heavily laden with sediments;
- large number of islands in between the channels;
- shallow funnelling to the coastal area and strong tidal and wind action.

4. Climate Change Implications in Bangladesh

Bangladesh is an agro-based country and its growth in agriculture sector is at a stake due to global warming and climate change linked natural disasters like droughts, floods, river erosion, water logging, cyclones, tidal surges, salinity intrusion etc. These are occurring there quite frequently and causing enormous damages to standing crops and yielding pattern, infrastructures, lives and livelihoods. During last 20 years this country experienced five devastating floods in 1987, 1988, 1998, 2004 and 2007 and four catastrophic cyclone in 1991, 1997, 2007 and 2009. The Centre for Research on the Epidemiology of Disasters estimates that close to 229 million people have been directly affected by natural disasters during 1979 to 2008, with economic damage equivalent to US\$5.6 billion. It is revealed from a study that Bangladesh annually losses about 8,700 hectares of land displacing around 180-200 thousands of people due to coastal inundation and erosion. During 1973–1987 about 2.18 million tons of rice was damaged

in Bangladesh due to drought and another 2.38 million tons due to flood while soil salinity, water logging and acidification affected 3.05 million hectares, 0.7 million hectares and 0.6 million hectare of country's crop land respectively. Another study reveals that if no adaptation is pursued, an annual average loss could increase to 3% of GDP due to increased frequency of flood over next 100 years.

According to the 4th IPCC report by 2050 rice production in Bangladesh could decline by 8% and wheat by 32% against the base year of 1990. There will be huge shortage of safe drinking water especially in the coastal belt and in drought-prone areas in the north-west of the country. Increasingly saline drinking water may also result in health hazards, especially for pregnant women and increase the incidence of water-borne and air-borne diseases. Study carried out for health sector envisages that a 7% increase of diarrhea and 1% increase of dengue patients at 2050 due to change in climate if no adaptation measures have pursued. The adaptation costs for health care, both private and public, have been estimated to be around US\$18 million per year. Another awful fact is that due to climate change riverbank erosion and salinity intrusion will be aggravated and about six to eight million displaced people would have to be migrated to cities which would increase the slum population.

5. Remedial Approach/ Framework adopted by GoB

Climate Change is an unexpected and destructing reality for Bangladesh since the country has no way to deny it but to accept the consequences. And realizing this truth, Government of Bangladesh has created a simplistic model to face the climate change related losses. The model has two key elements viz disaster risk reduction (DRR) and climate change adaptation (CCA), which share a common space for reducing the vulnerability of communities and achieving sustainable development. Bangladesh has also created a number of guiding frameworks and working models which have already received significant international recognition.

6. Suggestions to Strengthen the Remedial Approach

Although Bangladesh has achieved a number of milestones towards DRR and CCA mainstreaming, we can propose following measures to strengthen it further:

- (a) Preparation of holistic response through conducting adaptation research and establishing CC database, website and library;*
- (b) Develop awareness materials, organize more campaigns and arrange more trainings and orientations involving GO- NGO-Community;*
- (c) Conduct participatory planning at community level;*

- (d) Develop Climatic Research Division and establish CCA - DRR linkage;*
- (e) Arrange national CC conference & attend regional/international conferences;*
- (f) Ensure SARRC declaration and HFA;*
- (g) Plan CC strategies and policy directives for ECNEC, PC and ERD;*
- (h) Mainstream ADP, LGI, NGO Bureau.*

However, some of the measures mentioned above may be taken for piloting at the first stage and those may be finalized after evaluating the results.

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