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Security Implications of Climate Change in Bangladesh and its Response

From an environmental perspective Bangladesh continues to be in the ‘eye of the storm’ as it faces diverse daunting challenges from cyclones to sea-level rise. The country has drawn the attention of the international community for the enormity of threat posed by climate change and steps undertaken by the government to reverse their impacts. In a major development on September 29, the United Nations (UN) conferred Bangladesh Prime Minister Sheikh Hasina the “Champions of the Earth” (Policy Leadership category) award for 2015¹.

The top UN award assumes greater significance as Bangladesh is currently facing the climate change induced effects more than any other nation in the world. The adverse impacts of global warming has been more and more experienced by this South Asian country in several areas such as water resources, agriculture and food security, ecosystem and biodiversity. Bangladesh confronted innumerable cyclones, floods, droughts and famines in the past but they have intensified in recent years.

The climate change is regulating the frequency and intensity of extreme weather events in Bangladesh where the estuaries of some of South Asia’s big rivers are located. According to various studies, climate change poses a number of non-traditional threats to Bangladesh’s security, including rising temperatures, river and coastal flooding and erosion, rise in sea levels and growing levels of salinity².

Climate change has made Bangladesh vulnerable to natural catastrophes like cyclone and flood and the country’s very high density of population has compounded the problem. Bangladesh was at the top of the 2011 Global Climate Change Risk Index in a ranking of 170 countries most susceptible to the climate change prepared by an NGO named German Watch³.

Short-term Impacts

The climate change has short-term as well as long-term implications for Bangladesh. In the short run, it will bring about cyclones, or variations in temperature and precipitation causing drought and flood. The increase in rainfall especially during monsoon inundates the country’s vast low-lying areas severely affecting crops and livelihoods. Sediments carried by the three key rivers, the Ganges, Brahmaputra and Meghna (GBM), have worsened the flooding problems⁴.

Bangladesh is presently experiencing the worst effects of climate change. The environmentalists apprehend that being a low-lying country, the tidal waves could submerge almost 70% of Bangladesh’s land in case of a typhoon. The storm surges triggered by tropical cyclones have tremendously affected world’s largest mangrove forest in the Sunderban. Besides, numerous “char” (small river islands) areas had been completely washed away every five to ten years⁵.

Increase in salt level has a debilitating impact on the vegetation and farming in the coastal belt. A report says brackish water from the Bay of Bengal is fast encroaching, swelling Bangladesh’s

several fresh-water rivers, penetrating deep into the soil, contaminating ponds and underground water supply on which millions of people depend for drinking and cultivation⁶. In the short run, Bangladesh faces growing soil salinity that could retard the country's food production.

Bangladesh's food security was seriously threatened by cyclones Sidr and Aila. In November 2007, cyclone Sidr devastated the southern part of the country, claiming 3,500 lives, displacing 2 million people and totally incapacitating crop lands⁷. The loss of rice production due to Sidr was estimated at about 2 million metric tons, which could have fed 10 million people. The sharp fall in rice production was the single most important reason for the price rise of essential commodities in 2008⁸.

This situation was further exacerbated by cyclone Aila. In 2009, Aila destroyed thousands of homes and farm lands in the southern coastal region of Bangladesh⁹. Moreover, Bangladesh has a long history of encountering tornadoes and other varieties of natural calamities though not visited the country recently.

Long-term Effects

The long-term impacts of climate change are even more disturbing for Bangladesh which is trapped between the Himalaya in the north and the Bay of Bengal in the south. The scientists say the melting of glaciers and ice caps will gradually increase the level of sea. In the long run, global warming may lead to the disappearance of the Himalayan glaciers from where many river systems of South Asia originate. Risks are higher for Bangladesh as it happens to be a lower riparian country.

The rise in sea levels will have wider ramifications for the low-lying coastal areas of Bangladesh resulting in loss of agricultural production and livelihood and forced migration. Two key reports released in 2007 say the impacts of climate change will be felt in Bangladesh over the next 30 years. The reports present three likely scenarios that include: one which is a "near certainty", one "likely" and one "possible"¹⁰.

In the first case, Bangladesh is facing the danger of floods, deadly disease outbreaks and other damages from monsoon, and tropical cyclones that originate in the Bay of Bengal, and water contamination and ecosystem destruction caused by rising sea levels. The reports also note that climate change could internally displace millions of people, spawn conflicts and destabilise the society in Bangladesh¹¹. The impacts of climate change have already been realised in the country. The environmentalists maintain that the process will be heightened in the coming years.

Threats to Food and Livelihood Security

The climate change has threatened the agricultural sector on which lives and livelihood of millions of Bangladeshis depend. The rise in sea level due to global warming could endanger the food security of over 3 million people in the GBM Delta by 2050 by making soil and water too salty to grow rice—Bangladesh's staple food¹². A report claims the agricultural production, which relies primarily on monsoon, could fall up to 50% by 2020¹³.

The effects of climate change will be more felt in agriculture than any other sector. Variable precipitation will make planning of agricultural production more difficult¹⁴. Being an impoverished and over-populated country, the threats of climate change on Bangladesh's food security are particularly disturbing. Bangladesh is seriously worried about the far-reaching implications of climate change on agriculture that plays a central role in the economy. It accounts for nearly 22% of the GDP, with an additional 33% contribution from rural non-farm economy that is also associated with agriculture. Besides, loss of agricultural production is a huge threat to the livelihood of millions as about 65% of Bangladesh's population is engaged in the primary sector¹⁵.

Threat to Low-lying Areas

The negative impacts of global warming are being increasingly experienced by millions of people living in low-lying, flood-prone river deltas. It may be added that at least 230 rivers which flow through Bangladesh's territory are under threat. Life is getting worse in the coastal zone with many islands have already lost to sea. Erosion of river banks especially at the GBM Delta due to recurrent floods and tidal surges is a major concern for Bangladesh. Studies reveal that fish and other aquatic species are rapidly disappearing because of rise in sea level¹⁶.

The coastal areas are extremely vulnerable to the effects of sea level rise, including growing salinity of underground and surface waters. Local sea level rise in the GBM Delta could directly affect more than 3 million by 2050¹⁷.

The evolving scenario engendered by climate change is indeed grim in Bangladesh. More than 50 % of the country sits on less than 20 feet above the sea level¹⁸. In a worst possible situation as the UN has pointed out, Bangladesh may lose a quarter of its coastal areas if sea rises 3 feet in the next 50 years, displacing as many as 30 million people from their homes and crop lands¹⁹.

The climate change induced effects have put the future generations of the inhabitants of the coastal areas at the crossroads. They could neither stay at their own place for long nor look for greener pasture elsewhere in the country. Migration to other parts is not a feasible option as Bangladesh is having one of the highest densities of population in the world.

Peril of Internal Displacement

The climate change may trigger a massive refugee crisis in Bangladesh. The affected people's search for new homes run the risk of creating instability as they will compete for the existing scarce resources. Thousands of Bangladeshis had been migrating to the already crowded capital city Dhaka from the southern coastal region. Most of their homes and farm lands were submerged due to the rise in sea level. Reports suggest that about a half a million migrants have been arriving in Dhaka every year owing to environmental degradation. Many would also like to move to the neighbouring South and Southeast Asian countries generating political tension in the host nations²⁰.

Scientists emphasise that unless Bangladesh acts decisively and takes appropriate steps to prepare for the global warming, scarcity of food and fresh water supply of millions especially in the GBM Delta is likely to produce an environmental crisis of gigantic proportion²¹.

Bangladesh's climate change action plan clearly states that as much as 20 million people may have to be resettled by 2050²².

Domestic and International Mitigation Efforts

In recent years, Bangladesh has stepped up climate change mitigation efforts, including formulation of policies, allocation of budget, introduction of legislation and a series of measures aimed at minimising disaster risks and boosting early warning systems. Bangladesh, which aspires to become a middle-income country by 2021, has been focusing on enhancing food production and agriculture productivity, water management techniques, surface water infrastructure and irrigation, efficient fisheries, and promoting poultry and dairy farms²³.

Food and Livelihood Security

Responding to frequent climate change propelled disasters, Bangladesh has been trying to ensure food and livelihood security of millions of people who are most susceptible. In 2006, the government adopted a "National Food Policy". The UN's Food and Agriculture Organisation subsequently supported this policy through the "National Food Policy Capacity Strengthening Programme". There is one more initiative called "Food Security Country Investment Plan" allowing the country to receive \$52 million under the "Global Agriculture and Food Security Programme". Bangladesh was the first recipient of such assistance among the Asian nations²⁴.

In its bids to protect the livelihood of threatened people, the Bangladesh government is funding research and development of crop varieties that are resistant to flooding or salinity. A vast majority of the poor people depend on governmental and non-governmental organisations to rebuild storm-proof buildings and augmenting alternative income opportunities like shrimp and crab farming, and producing salt-tolerant rice and maize²⁵.

Environment-friendly Development Strategy

Bangladesh is one of the very few developing countries that have devised an eco-friendly socio-economic development strategy. In its attempts to reduce the adverse impacts of the sea level rise, Bangladesh launched the "National Action Plan on Adaptation" in 2005 and the "Bangladesh Climate Change Strategy and Action Plan"(BCCSAP) in 2009. The BCCSAP follows an inclusive approach to realise sustainable socio-economic development by incorporating disaster management plans²⁶. It emphasises that unless such an approach is adopted, frequent natural calamities could negate the socio-economic achievements of Bangladesh in recent years.

Hasina's Awami League (AL) government has demonstrated political will to protect the people from environmental hazards. In 2011, the AL government amended the Constitution to insert a directive to the State to safeguard environment and natural resources for the present and future generations. In another significant effort to protect environment, human and livelihood, the government recently enacted a law to streamline regulation of coastal pollution from ship-breaking and ship-building industry which employs a huge work force under hazardous conditions²⁷.

The UN's Appreciation

The international community has lauded the AL government's wide range of measures to help people prepare for a growing uncertain future. The government launched special health services to tackle water-borne diseases resulting from regular floods and trained community groups regarding early warning system. As part of climate change mitigation, the government has attached priority to clean and renewable energy, including one of the world's biggest solar home energy systems and reducing emissions from brick-making—a major source of stationary emissions in Bangladesh²⁸.

The United Nations Environment Programme has heaped praises on Bangladesh's policy initiatives under the Hasina government to address the challenges posed by climate change and awarded the prestigious "Champions of the Earth" prize for this year. It applauded the "Bangladesh Climate Change Strategy and Action Plan" of 2009. In fact, Bangladesh is the first developing nation which has made climate change mitigation at the core of its development plans. It is also the first nation to float its own "Climate Change Trust Fund" by mobilising domestic resources worth \$300 million during 2009-2012²⁹.

Challenges Ahead

Bangladesh needs to be constantly vigilant to protect its population and resources from the impending climate change related disasters. Among all the South Asian nations, Bangladesh is more at risk of facing extreme weather events like cyclone, flood and variable precipitation. The plains of the GBM Delta, which is home to nearly 30 million people, constitute the worst affected region of the country.

Experts observe that the cumulative impact of these factors has the potential to produce the largest number of environmental refugees in the world. They suggest that Bangladesh could lessen the effects of rise in sea level at moderate expense repairing, expanding and better maintaining its 7,000 km-long system of coastal dikes³⁰.

Funding is another key concern for Bangladesh to adapt itself to the rising threats of global warming. It requires more international monetary assistance for its millions of needy people to turn the tide of climate change. In 2009, the developed nations promised to release \$300 billion to the poor countries to mitigate the effects of climate change. But till 2012, only \$2.5 billion had been disbursed³¹.

No doubt the present government has displayed enviable resilience to take the climate change-resulted extreme events in its own strides. But it is equally important to guard against political instability that the country has been witnessing since the restoration of the Westminster model of parliamentary system in 1991. Thus, climate change mitigation efforts become an integral part of democratic governance which the political elites of Bangladesh could ignore at their own peril.

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Views are personal.

About the author:

Dr. Rupak Bhattacharjee is a political analyst.

Endnotes

¹ See the report “Prime Minister Hasina wins UN environment prize”, September 14, 2015, <http://bdnews24.com/bangladesh/2015/09/14/prime-minister-sheikh-hasina-wins-un-environment-prize> .

² “Climate Change and Security in Bangladesh: A Case Study”, June 2009, Bangladesh Institute of International and Strategic Studies and Saferworld, www.saferworld.org/404-climate-changeandsecurityinbangladesh.

³ See “Climate Change in Bangladesh”, Wikipedia, http://en.wikipedia.org/wiki/climate_change_in_bangladesh, retrieved on September 11, 2015.

⁴ Arfin, Tamanna, “Bangladesh and Climate Change”, Climate Emergency Institute, March 25, 2012, www.climateemergencyinstitute.com/bangladesh-1arfin.html.

⁵ Kempton, Rosemerie, “Teenage environmental crusader tour Bangladesh”, February 21, 2012, www.climateemergencyinstitute.com.

⁶ Chopra, Anuj, “How Global Warming Threatens Millions in Bangladesh”, US News and World Report, March 26, 2009, www.climateemergencyinstitute.com .

⁷ Ibid.

⁸ See N. 3

⁹ Luffman, Laurinda, “Helping rural communities in Bangladesh adapt to climate change”, March 7, 2012, www.climateemergencyinstitute.com .

¹⁰ Dan, Shapley, “Bangladesh, Global Warming and Islamic Extremism”, November 14, 2007, www.climateemergencyinstitute.com .

¹¹ Ibid

¹² See the report titled “Sea-Level Rise in Ganges-Brahmaputra Delta”, Union of Concerned Scientists, www.climatehotmap.org/global-warming.../ganges-brahmaputra-delta-bangladesh .

¹³ See N. 3

¹⁴ See Arfin n. 4.

¹⁵ See Chopra, n. 6; and Arfin n.4.

¹⁶ Ian, William, “In Bangladesh, climate change is a matter of life and death”, NBC News, December 7, 2009, www.climateemergencyinstitute.com .

¹⁷ See N. 2

¹⁸ See Ian n. 16.

¹⁹ See Chopra n. 6.

²⁰ See Ian n. 16; and Dan. n. 10.

²¹ See n. 12.

²² Morrison, Dan, “Come Hell with High Water”, January 20, 2012, www.climateemergencyinstitute.com .

²³ See n. 3.

²⁴ Ibid

²⁵ See Luffman, n. 9.

²⁶ See n. 3.

²⁷ See n. 1.

²⁸ Ibid.

²⁹ Ibid.

³⁰ See Morrison, n. 22.

³¹ See note nos. 9 and 22.



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