Climatic Tragedies in Bangladesh: What Should Government Do?

Zayeda Sharmin¹, Mohammad Fakhrus Salam², Md. Sharif Hasan³

¹Associate Professor, ²Assistant Professor, ³Thesis Student, Department of Political Studies, Shahjalal University of Science & Technology, Sylhet-3114, Bangladesh.

Abstract: Today’s global climate change and its adverse impact is the great event of emitting a huge volume of greenhouse gases and CO₂ by developed countries. But unfortunately poor countries are bearing its disgrace value. Like other developing countries, for Bangladesh the impacts of global climate change are most critical and vulnerable to a range of natural hazards. Already, the human suffering and cost to development is massive to this country and its people who are victims of human induced global warming. So the Government of Bangladesh should consider climate change as a priority concern and has to commit for taking urgent and long term actions to reduce the vulnerability. On this ground this paper has recommended some potential ways of forwarding from adverse impact of climate change on the basis of secondary sources which will assist the Government body for determine strategies for building climate resilient country perfectly.

I. Introduction

Climate change in Bangladesh is an extremely crucial issue. The international community has recognized that Bangladesh ranks high in the list of most vulnerable countries on the earth as the severe impact of climate change. Its adverse affects - especially High Temperature, Sea-level Rise, Cyclones and Storm Surges, Salinity Intrusion, Heavy Monsoon Downpours etc. has aggravated the overall Economic Development scenario of the country to a great extent. Bangladesh’s high vulnerability to climate change is due to a number of hydro-geological and socio-economic factors. As a disaster-prone country, the country has various experiences of disasters like tropical cyclones, storm surges, coastal erosion, floods, and droughts almost every year - causing heavy loss of life and property and endangering the development activities (Ali, 1999). Since 1970, according to a statistics, about 39 million people have been displaced by major natural calamities like flood and cyclone in the country till 2009. Experts warn that about 6-8 million more people of Bangladesh could be displaced due to increase in global temperature and sea-level rise by 2050 (Nasreen, 2011). Now is the time to need both a vision and actions for a better, cleaner, and more sustainable country in world. To this end it is imperative for the government to maintain specific and veritable strategies in the national and international level. For overcoming all ventures occurring by climate change these strategies will make the government indulgence and confident. On this ground this research article is predominantly related with suggesting equitable acts and deeds of government as the aim of fighting against all forecasting hazards due to global climate change.

II. Objectives of the Study

The specific objectives of this paper are given below:

a. To discuss about retrospective climatic tragedies in Bangladesh.

b. To determine the enforceable tasks for the Government.

III. Methodology

This paper has prepared through a comprehensive consultation process under secondary data sources. So usually information was collected from documents available mainly in electronic database. Some documents were retrieved from the database (websites) of several national, and international agencies were browsed.

IV. Climate Change and the Experience of Bangladesh

Bangladesh is affecting seriously by the environmental degradation due to global climate change, ozone layer depletion. The country has already begun to feel the effects of climate change as flood periods have become

---

Abstract: Today’s global climate change and its adverse impact is the great event of emitting a huge volume of greenhouse gases and CO₂ by developed countries. But unfortunately poor countries are bearing its disgrace value. Like other developing countries, for Bangladesh the impacts of global climate change are most critical and vulnerable to a range of natural hazards. Already, the human suffering and cost to development is massive to this country and its people who are victims of human induced global warming. So the Government of Bangladesh should consider climate change as a priority concern and has to commit for taking urgent and long term actions to reduce the vulnerability. On this ground this paper has recommended some potential ways of forwarding from adverse impact of climate change on the basis of secondary sources which will assist the Government body for determine strategies for building climate resilient country perfectly.

I. Introduction

Climate change in Bangladesh is an extremely crucial issue. The international community has recognized that Bangladesh ranks high in the list of most vulnerable countries on the earth as the severe impact of climate change. Its adverse affects - especially High Temperature, Sea-level Rise, Cyclones and Storm Surges, Salinity Intrusion, Heavy Monsoon Downpours etc. has aggravated the overall Economic Development scenario of the country to a great extent. Bangladesh’s high vulnerability to climate change is due to a number of hydro-geological and socio-economic factors. As a disaster-prone country, the country has various experiences of disasters like tropical cyclones, storm surges, coastal erosion, floods, and droughts almost every year - causing heavy loss of life and property and endangering the development activities (Ali, 1999). Since 1970, according to a statistics, about 39 million people have been displaced by major natural calamities like flood and cyclone in the country till 2009. Experts warn that about 6-8 million more people of Bangladesh could be displaced due to increase in global temperature and sea-level rise by 2050 (Nasreen, 2011). Now is the time to need both a vision and actions for a better, cleaner, and more sustainable country in world. To this end it is imperative for the government to maintain specific and veritable strategies in the national and international level. For overcoming all ventures occurring by climate change these strategies will make the government indulgence and confident. On this ground this research article is predominantly related with suggesting equitable acts and deeds of government as the aim of fighting against all forecasting hazards due to global climate change.

II. Objectives of the Study

The specific objectives of this paper are given below:

a. To discuss about retrospective climatic tragedies in Bangladesh.

b. To determine the enforceable tasks for the Government.

III. Methodology

This paper has prepared through a comprehensive consultation process under secondary data sources. So usually information was collected from documents available mainly in electronic database. Some documents were retrieved from the database (websites) of several national, and international agencies were browsed.

IV. Climate Change and the Experience of Bangladesh

Bangladesh is affecting seriously by the environmental degradation due to global climate change, ozone layer depletion. The country has already begun to feel the effects of climate change as flood periods have become

---

Abstract: Today’s global climate change and its adverse impact is the great event of emitting a huge volume of greenhouse gases and CO₂ by developed countries. But unfortunately poor countries are bearing its disgrace value. Like other developing countries, for Bangladesh the impacts of global climate change are most critical and vulnerable to a range of natural hazards. Already, the human suffering and cost to development is massive to this country and its people who are victims of human induced global warming. So the Government of Bangladesh should consider climate change as a priority concern and has to commit for taking urgent and long term actions to reduce the vulnerability. On this ground this paper has recommended some potential ways of forwarding from adverse impact of climate change on the basis of secondary sources which will assist the Government body for determine strategies for building climate resilient country perfectly.

I. Introduction

Climate change in Bangladesh is an extremely crucial issue. The international community has recognized that Bangladesh ranks high in the list of most vulnerable countries on the earth as the severe impact of climate change. Its adverse affects - especially High Temperature, Sea-level Rise, Cyclones and Storm Surges, Salinity Intrusion, Heavy Monsoon Downpours etc. has aggravated the overall Economic Development scenario of the country to a great extent. Bangladesh’s high vulnerability to climate change is due to a number of hydro-geological and socio-economic factors. As a disaster-prone country, the country has various experiences of disasters like tropical cyclones, storm surges, coastal erosion, floods, and droughts almost every year - causing heavy loss of life and property and endangering the development activities (Ali, 1999). Since 1970, according to a statistics, about 39 million people have been displaced by major natural calamities like flood and cyclone in the country till 2009. Experts warn that about 6-8 million more people of Bangladesh could be displaced due to increase in global temperature and sea-level rise by 2050 (Nasreen, 2011). Now is the time to need both a vision and actions for a better, cleaner, and more sustainable country in world. To this end it is imperative for the government to maintain specific and veritable strategies in the national and international level. For overcoming all ventures occurring by climate change these strategies will make the government indulgence and confident. On this ground this research article is predominantly related with suggesting equitable acts and deeds of government as the aim of fighting against all forecasting hazards due to global climate change.

II. Objectives of the Study

The specific objectives of this paper are given below:

a. To discuss about retrospective climatic tragedies in Bangladesh.

b. To determine the enforceable tasks for the Government.

III. Methodology

This paper has prepared through a comprehensive consultation process under secondary data sources. So usually information was collected from documents available mainly in electronic database. Some documents were retrieved from the database (websites) of several national, and international agencies were browsed.

IV. Climate Change and the Experience of Bangladesh

Bangladesh is affecting seriously by the environmental degradation due to global climate change, ozone layer depletion. The country has already begun to feel the effects of climate change as flood periods have become
longer and the cyclones, droughts and earth quakes that hit the country cause greater devastation and adversely affecting the country’s agriculture and land, and challenging water resources, food, health, energy etc (Climate Himalaya, 2011).

Historical trend shows that the country experienced 30 damaging floods between 1954 and 1998, of which 12 were severe and 5 were catastrophic. The occurrence of flood experienced by Bangladesh is deemed to be the worst in the globe, both in terms of duration and damage. Abnormal floods submerge about 60 percent of the land, damage crops, property; disrupt economic activities and cause diseases and loss of life beyond all proportion (Nasreen, 2004). According to government statistics, 298 people died and 10,211,780 people were badly affected by it. 56,967 houses were damaged by the floods up to 13 August 2007. In 2004, around 30 million Bangladeshis were affected by flood (Biswas, 2013). Between 1991 and 2000, 93 major disasters were recorded in Bangladesh, resulting in nearly 200,000 deaths and causing US $ 5.9 billion in damages with high losses in agriculture and infrastructure. Because of sea level rise coastal Bangladesh has already experienced the worst impacts especially in terms of coastal inundation and erosion, saline intrusion, deforestation, loss of biodiversity and agriculture, and large scale migration. About 830,000 million hectares of arable land is affected by varying degrees of soil salinity. During the period 1973–1987, about 2.18 million tons of rice was damaged due to drought and 2.38 million tons due to flood. However drought affected annually about 2.32 million hectares and 1.2 million hectares of cropped land during the Summer (November to June) and Winter (July to October) seasons respectively, while soil salinity, water logging and acidification affect 3.05 million hectares, 0.7 million hectares and 0.6 million hectare of crop land, respectively in the country (Government of the People’s Republic of Bangladesh. Department of Environment, 2007). Experts from home and abroad observed that alarming decrease in water flow down the rivers caused high salinity in both water and soil of Sundarban, causing a massive change in faunal composition of the forest. Sundarban, which lies across the outer deltas of the Ganges, Brahmaputra and Meghna rivers, is the largest mangrove forest in the world. The number of timber producing big trees such as Sundari is decreasing at the proportionate rate at the increase of salinity (Mahmood, 2012, p. 239).

V. Evaluating the changing climate pattern in Bangladesh: An assessment

It is important to evaluate how climate has varied and changed in the past. The monthly mean historical rainfall and temperature data can be mapped to show the baseline climate and seasonality by month, for specific years, and for rainfall and temperature. In the following charts show mean historical monthly temperature and rainfall for Bangladesh during the time period 1960 to 1990 and 1990 to 2009 respectively 30 and 19 years. The dataset has collected from the Climate Change Knowledge Portal of World Bank.

This paper here firstly has comparatively assessed the average temperature of these two sessions and secondly rainfall.

Temperature

![Average Monthly Temperature for Bangladesh](author)

Rainfall

![Average Monthly Rainfall for Bangladesh](author)
From above assessment we can say that temperature is increasing in both monsoon and winter period and rainfall indicate more rains during monsoon and lesser during dry periods. It is known that very small changes in the temperature, rainfall or sea level rise can lead to severe consequences for our country like Bangladesh and already has stressed environmentally, socially and economically. Also, the variations can be quite significant when downscaled for a location. In addition, there may be more than one impact at any given period which can lead to grave circumstances. Further, climate change induced impacts may trigger a chain of consequences due to non-climatic activities and their outcomes.

In this phase the study has mentioned the most profound impacts of climate change in Bangladesh which are predicted by experts.

1. Rising Sea Level
2. Disappearing Under the Waves
3. Increasing Flood Risk and Salinity
4. Agricultural Production
5. Damaging Availability of Fish Supply
6. Prevalence of Diseases

VI. What should government do?

To understand climate impacts and hazards, some potential queries need to be answered. These are:

- Which types of hazards may become more frequent and intense?
- What will their altitude of enormity?
- Which locations are most vulnerable?
- What is the feasible time of occurring hazards?
- What will be the possible impacts of its aftermath?

In the light of above queries a figure is given below:

![Figure: Understanding Climatic Impacts and Hazards](author)

Development practitioners, professionals and policy makers gather knowledge about potential issues of the state before any blueprint or action, obviously that will help them to perform the aim on the whole. In this study it has denoted as assessment based understanding. Such assessment based understandings will be able to facilitate key actions to fill knowledge gaps in addressing adaptation to climate change and its impacts on the life and livelihoods. It will also help to explore new adaptation options for the community to adapt with changing situations. In this way the researchers, stakeholders and policy makers have to think about climatic hazards and should formulate viable adaptation policies and strategies at national and international level. Hope these types of good practices will show better ways for adaptation to climate change and variability as well as improved livelihood options in the backdrop of climate change impact.

VII. Strategies for Adaptation

This study here has established the strategies of government into two basic directions named respectively national and global level response. Then each basic direction has elaborately discussed in the light of some potential core points.

National Level Response

Research and scientific based study

We think that only subject based pervasive research will be able to expose the possible destructive image of global warming and helpful for the exploration of new adaptation options for the community to adapt with the impact of climate change; sharing experiences with relevant stakeholders on good practices for adaptation to climate change and variability. So our Government should be needed to motivate its internal experts for research and scientific based study in the perspective of climate change issue.

Mainstreaming climate change into development plans and processes

The Government of Bangladesh has to engage climate change issue as a mainstream in a systematic, comprehensive effort to reduce the negative impacts of climate change through integration into overall national development and planning process of the country.
Internal Fund Formation

Our Government can take initiative for a public fund formation internally which may be treated as state fund with the cooperation of other government and non-government agencies. Monthly or yearly installment system may introduce for the aim of collecting money.

<table>
<thead>
<tr>
<th>Concerning Issues</th>
<th>Two Major Level of Responses</th>
<th>Criteria of Responses</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan and Policy</td>
<td>National Level Response</td>
<td>Research and scientific based study</td>
<td>For Building Climate Resilient Bangladesh and Mass Awareness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mainstreaming climate change into development plans and processes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Internal Fund Formation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Building Adaptive Capacity and Reducing Vulnerability</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Protecting the Man-Made Environmental Destruction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Global Level Response</td>
<td>Consensus Building among Wider Groups</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fund Formation for the Victim States</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Commitment for Reduction of CO₂ Emission</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ensuring Good Governance</td>
<td></td>
</tr>
</tbody>
</table>

Figure: Strategies for Overcoming the Adverse Impacts of Climate Change (author)

Building Adaptive Capacity and Reducing Vulnerability

Building adaptive capacity to climate change and managing climate risks should be addressed through the mainstreaming of climate risk into sustainable development strategies.

Protecting the Man-Made Environmental Destruction

The utmost environmental risks are covering Bangladesh gradually with its great fear due to global climate change and adversely impacting both human and natural systems. In fact man-made environmental destructions like deforestation, pollution of air and water, land erosion, over fishing encroachment of rivers, construction of building, over-utilization of ground water, adverse use of chemicals etc are greatly liable to make the impacts of climate change even more severe in our country.

Proper Management of Trans Boundary Rivers and Ecological Issues

There are many trans-boundary rivers’ and ecological issues between Bangladesh and India that needs to be resolved. Bangladesh and India should take into consideration during their discussions and reach ecology-friendly, win-win solutions (Mahmood, 2012, p. 235).

Global Level Response

Consensus Building among Wider Groups

The South Asian countries, particularly the poorest in the countries, are already suffering from negative impacts due to extreme events and variability of climate change. Thus this consensus wider group will persuade all responsible countries take on mitigation targets. However they will call large developing countries, for example, USA and China, to reduce their emissions as well as ensuring that the principles of equity, right, justice and entitlement are integral to a future agreement.

Fund Formation for the Victim States

The UN-led talks in Cancun in December 2010 agreed on a full accord to fight global warming, including the creation of a Green Climate Fund to help developing countries. The funding would rise to 100 billion dollars annually by 2020, as experts warn that the world’s poorest nations are already suffering the consequences of extreme weather triggered by climate change (Mahmood, 2012, p. 233). As a third world country obviously we are eligible for the assistance from this green fund. However Bangladesh is one of the most effected climate prone countries, we believe that the share would be appropriately distributed for Bangladesh by them. So Bangladesh Government should continue its participation in future international agreement and frameworks to respond to climate challenges.

Commitment for Reduction of CO₂ Emission

Our Government can be built a alliance group with disaster porn countries where they will represent climate change as an international agenda in upcoming UNFCCC (The United Nations Framework Convention on Climate Change) sessions and always have an endeavor to remind the commitments of rich countries for the reduction of CO₂ and green house gases.
Ensuring Good Governance

In the case of world response and their commitment towards climate change issues, our Government has to represent Good Governance in the world stage for all nations. Ultimately the consequences of inactions will challenge the integrity of the global community in securing the right to be able to cope with climate impacts and maintain well being of life on this planet (Government of the People’s Republic of Bangladesh. Department of Environment, 2007).

VIII. Conclusion

Government should guide and coordinate all the national and international responses and processes to integrate climate risk into development plans and processes. Government’s plans and policies will be enriched with inclusive and comprehensive approaches where these will perfectly address the needs and priorities of the country and will come into practice with mainstreaming climate risk management and adaptation using the country framework as an operational tool. These plans will facilitate policy makers to consider concerns specific to sectors, locations and levels of development activities and processes. Side by side the Climate Change Policy and Action Plan will facilitate co-ordination among the country’s development partners to address necessary investments to make Bangladesh climate resilient.

References


