

16. Policy and institutional responses to climate change and food security in Bangladesh

*M.H.I. Khan and M. Das Gupta**

Supreme Court of Bangladesh and Centre for Climate Justice-Bangladesh (CCJ-B), 14/B, 11, Poribag, Dhaka, Bangladesh; dgmoumita2014@gmail.com

Abstract

Bangladesh is widely recognized as one of the most climate vulnerable countries in the world taking into account both existing vulnerabilities and future climate change impacts. Historically it experiences frequent natural disasters having adverse impacts on lives and livelihoods, especially of poor people. Climate change impacts are going to exacerbate many of the current problems and natural hazards the country faces and those impacts and vulnerabilities are already evident in Bangladesh, which is reducing inter alia, agricultural production and threatening food security of the country. The Government of Bangladesh (GoB) is considering relentlessly these challenges through taking relevant measures and policy approaches to ensure food security and to achieve continuous higher economic growth to eradicate poverty at an expected pace. This paper has identified initially the causes of threat to food security associated with climate impacts and explored some effective adaptation measures to reduce and manage the risk of reducing agricultural products in Bangladesh. It thereafter has scrutinized the national legislations, policies, plans, programs and institutions aligning with the international policy regime on climate change and food security and analysed the scopes and gaps to make some recommendations for required effective national policy and institutional structures. Such policy investigations, at the national level as a bottom up approach can also provide some required policy guidance for international regulatory regime.

Keywords: climate vulnerability, national responses, threat to food security

Introduction

Bangladesh got wide recognition to be one of the most climate vulnerable countries of the world by considering both existing vulnerabilities and future apprehensions. Historical experiences of devastating natural disasters with adverse impacts on lives and livelihoods, especially of the poor people, are anticipated to be increased due to climate change impacts. Predicted and evident adversities include frequent and severe tropical cyclones, more erratic rainfall (heavier/lower), higher river flows, riverbank erosion, increased sedimentation, melting of the Himalayan glaciers, sea level rises, warmer and more humid weather, etc., reducing inter alia, agricultural production and threatening food security of Bangladesh. The Government of Bangladesh (GoB) is relentlessly taking relevant measures and policy approaches to ensure food security for higher economic growth and eradication of poverty (MoEF, 2009). Flash flood at haor basins is considered to be the main disaster of south-east Bangladesh threatening productivity and food security of this area (BHWDB, 2012).

The Fifth Assessment Report (AR5) of Intergovernmental Panel on Climate Change (IPCC) has identified that current temperatures and heat stress are already approaching critical levels during the susceptible stages of rice plant in Bangladesh during the months of March to June. Sea water inundation is also identified as a major problem for agriculture. It has further reported that Bangladesh will experience a net increase in poverty of 15% by 2030 in context of low crop productivity. Adaptation measures including salinity-tolerant crop cultivation, hydroponics, embankment cropping aquaculture, early flood

warning systems, risk insurance mechanisms are identified as effective adaptation measures to manage the risk of reducing food production (AR5, WG2; Chapters 5 & 24).

Literature review supporting AR5 reveals that climate change adversities in Bangladesh are projecting cut of Gross Domestic Products (GDP) by -0.11% by 2030, lowering agricultural production by -1.23%, hiking imports of goods by 1.52%, limiting consumption of total calories by 17% and also leaving some households to be underfed as a result of uneven distribution of foods (Banerjee *et al.*, 2015). By emphasizing on urgency of proper adaptation strategies struggling to ensure growth of annual yield through necessary technical progress is desired to fight with this situation adequately (Kobayashi and Furuya, 2011). Besides advocating international negotiations developing adequate legal and policy framework at national level is a prerequisite to protect the citizens from both existing and projected loss and damage situations arising out of hitting consequences of climate change (Al Faruque and Khan, 2013).

In this position, this study tends to address three questions. 1. What is the current state of legal and institutional responses to food security and climate change in Bangladesh? 2. What are the gaps of the existing system? 3. What are the appropriate legal and institutional frameworks required for dealing with threats towards food security due to climate change impacts?

Legal, policy and institutional responses in Bangladesh

The Constitution of the People's Republic of Bangladesh has imposed duties on the State to make endeavour for improvement and protection of natural environment and biodiversity for both the present and future citizens (Article 18A) and recognized basic necessities including food by Article 15(a) which obliges the GoB to ensure the food security for the citizens. However, the relevant legal enactments as existing in Bangladesh, namely, the Environment Conservation Act, 1995, the Environment Conservation Rules, 1997, the Environment Court Act, 2010 (repealed and re-enacted the Environment Court Act, 2000), have basically defined the offences against environment, punishments for such offences along with procedural and institutional mechanisms to enforce those laws containing no direct concerns about public good or food security. The Environment Conservation Act, 1995 has established the Department of Environment under the then Ministry of Environment and Forest (MoEF), presently renamed as the Ministry of Environment, Forest and Climate Change (MoEFCC), for implementation of relevant laws and regulations.

The Bangladesh Climate Change Strategy and Action Plan (BCCSAP), 2009 identified 24 ministries, and their responsibilities regarding 44 programs and it also identified the role of the concerning development partners. Specifically, there are 9 relevant ministries adopted different legislations, policies, and plans and also currently implementing different projects and programmes related to climate change and food security. Hereby relevant ministries and their initiatives in compliance with these issues are scrutinized to identify the scopes and gaps to ensure food security in the context of climate change impacts and vulnerabilities in Bangladesh.

Ministry of Environment, Forest and Climate Change

The MoEFCC (previous MoEF) as to the focal point of the United Nations Framework Convention on Climate Change (UNFCCC) is leading global climate change negotiations and also providing necessary guidance to develop national policy regime. MoEF has prepared the National Adaptation Programme of Action (NAPA), 2005, updated, 2009 and the Bangladesh Climate Change Strategy and Action Plan (BCCSAP), 2008, reviewed, 2009. Both of these have stepped forward towards food security by emphasizing on agricultural research to develop crop varieties which are tolerant of climate

Section 3

change impacts like flooding, drought and salinity, based on indigenous and other varieties suited to the needs of resource. The Bangladesh Climate Change Trust Fund (BCCTF) was established under MoEF through legislation, namely, the Climate Change Trust Fund Act, 2010 to implement the six thematic areas of BCCCSAP, 2009 and this fund is financed from the national budget of Bangladesh. Also a multi-donor trust fund, the Bangladesh Climate Change Resilience Fund (BCCRF) was created in 2009 and came operational in 2010 with a view to implement projects of both government agencies and Non-Government Organizations (NGOs) to facilitate the thematic areas of BCCCSAP including food security. Intended Nationally Determined Contribution (INDC), submitted to UNFCCC by GoB in 2015, which is now NDC as to the Paris Agreement, 2015, specifically identified the need for investment for adaptation measures related to food security and livelihood and health protection including water security (MoEF, GoB, 2015). The Bangladesh Climate Change and Gender Action Plan (BCCGAP), 2013, prepared by MoEF, also addressed the issue of integration of gender considerations in the thematic area related to food security, social protection, and health. Both of the Fourth National Report to the Convention on Biological Diversity submitted by Bangladesh in the year 2010 headed as the National Biodiversity Assessment and Programme of Action 2020 and the Bangladesh Country Investment Plan for Environment, Forestry and Climate Change (2016-2021) (BCIPEFCC) as a living document have focused on the issues relating to management of natural resources and adaptation and those are some key points to ensure national food security.

Ministry of Disaster Management and Relief

The Ministry of Disaster Management and Relief (MoDMR) adopted number of plans, policies and legislations to fight with the adversities of climate change aiming to Disaster Risk Reduction (DRR). The Disaster Management Act, 2012 has provided guidance to set up institutional mechanisms to fight with the disasters and adverse climate change impacts of which the MoDMR is the authority of implementation. The National Disaster Management Policy, 2015, and the National Plan for Disaster Management (NPDM), 2010-2015; 2016-2020 and 2021-2025 are adopted by the MoDMR. The MoDMR adopted the Standing Orders on Disaster (SoD), 2019, revising the Standing Orders on Disaster (SOD), 2010 to coordinate between national policies and international frameworks for DRR by identifying duties and responsibilities of the relevant agencies, institutions, bodies of central and local government and NGOs to reduce vulnerabilities, rehabilitate, and provide humanitarian assistance to the victims of both disasters and climate change impacts (MoDMR, 2019). However, though disasters have severe adverse impacts on national food security, only NPDM, 2021-2025 is concerned about creating food stock at family level merely and not about local or national food security in crucial times, like disasters, as a whole.

Ministry of Agriculture

The Ministry of Agriculture (MoA) has identified development of climate resilient crop variety and technology as one of the priority areas by the National Agriculture Policy, 2018. Also the MoA has developed National Agricultural Extension Policy, 2020 by addressing the challenges of climate change aiming to extension of good agricultural practices as a strategy to produce safe and nutritious food.

Ministry of Food

The Ministry of Food developed the National Food Policy Plan of Action 2008-2015, which identified climate change that poses an additional burden on food security, especially in areas where agriculture and water resources are already under stress due to adverse meteorological conditions. A monitoring report is submitted by assessing this plan by the year 2010.

Ministry of Health and Family Welfare

The Ministry of Health and Family Welfare (MoHFW) adopted the Health Policy in 2011, which provided guidance to adapt with climate impacts and relevant diseases. The MoHFW also adopted the National Nutrition Policy in 2015 and this policy provide provision to adapt for ensuring food security, employment and disease management strategies in line with the situation related to climate change in Bangladesh.

Ministry of Water Resources

The Ministry of Water Resources (MoWR) is responsible to regulate the water resources in Bangladesh. The MoWR developed a Master Plan of Haor Areas in 2012, which addressed climate impacts and vulnerabilities in water resources in Haor basins in its various sections. This Master Plan of Haor Areas, 2012 also recognized the climate change implications and the loss of fisheries biodiversity, which is evident in the haor areas. Though water is an essential part of food security being inevitable for both agricultural production and drinking purpose yet these matters are not focused in the Bangladesh Water Act, 2013.

Ministry of Fisheries and Livestock

Fisheries and Livestock is identified as one of the climate vulnerable sector in BCCSAP, 2009, but this sector regulating agency. The Ministry of Fisheries and Livestock (MoFL) took little effort to develop relevant policies, plans, and programs. The MoFL recently adopted the National Shrimp Policy in 2014 and this policy considered the climate change impacts and vulnerabilities in shrimp sector.

Ministry of Planning

The Ministry of Planning (MoP) is responsible for developing overall planning of the country and for implementation of such plans. National Sustainable Development Strategy (NSDS), 2010-2021; Perspective Plan of Bangladesh 2010-2021; Sixth Five Year Plan and Seventh Five Year Plan as developed by the MoP have identified the development priorities for ensuring food security taking into account the climate impacts. The MoP also developed the National Social Security Strategy (NSSS), 2015 addressing the issue of climate change and food security.

Ministry of Finance

The Ministry of Finance (MoF) adopted the Bangladesh Climate Fiscal Framework (CFF) in 2014 which, identified the principles and tools for development of Climate Fiscal Policy (CFP) of which 'food security, social protection and health' is considered to be the first thematic area following BCCSAP. The Economic Relations Division (ERD) of the Ministry of Finance is acting as the National Designated Authority (NDA) of Bangladesh to the Green Climate Fund (GCF) (Finance Division, 2014).

Key findings and way forward

Being one of the worst victims of climate change admittedly, food security of Bangladesh has headed forefront as a burning issue due to both sudden and slow onset environmental disasters. The GoB is playing active role in climate negotiations and international climate policy development processes besides developing national legislations, policies, plans, programs and institutions aligning with the international policy regime on climate change and food security to protect its vulnerable communities from the adversities of climate change. However, different ministries of Bangladesh are taking different

Section 3

relevant steps by focusing on their own agenda and avoiding the interdisciplinary approach which is inevitable to fight with the challenges of climate change and food security adequately. Even the same ministry has created different guiding documents sometimes which created ambiguities about de facto focus of the ministry. Though the BCCSAP has empowered the focal points of climate change in all associated ministries to make plans as well as implement those existing, it is still missing the urgency of a single and coordinated plan to be implemented by all the relevant ministries hands in hands. Without creating different documents it could be wise for MoEFCC to adopt a single document by addressing all the concerns as focused by NAPA, BCCSAP, BCCGAP and BCIPEFCC. Also the MoA could adopt a single policy with combination of the focal points of agriculture and agricultural extension. Matters relating to agriculture, food, nutrition, water fisheries and livestock are so much inter-connected that dealing with these aspects separately is not preferable in any way. Also the MoP and MoF should work together as without proper finance planning cannot be accurately implemented. In spite of numbers of sectoral legislations, policies and plans have been adopted by different ministries of GoB in connection with climate change impacts and food security yet the urge for a consolidated approach to deal with this phenomenon continued to remain unheard and unattended. No scope is provided for integrating the community people within these procedures to explore and utilize their indigenous knowledge to tackle this situation in a bottom up approach. As such, further comprehensive studies and steps are required to explore scopes for promoting coordinated and integrated policy and institutional approaches to address the relevant issues all together by developing an action plan for sectoral coordination and integration in consonance with all the stakeholders by applying bottom up approach for setting a positive example to be followed by the world community. The BCCSAP is a plan for ten years of which the targeted period is already over (MoEF, 2009). It will be highly appreciated if the second version of this document can take an integrated approach based on realistic research studies by accommodating all the relevant institutions and sectors within the purview of this prime instrument.

References

- Al Faruque, A., and Khan, M. H. I. 2013. *Loss & Damage Associated with Climate Change: The Legal and Institutional Context in Bangladesh*. Available at: <http://asiapacific.domain50.com/sites/default/files/resource/attach/loss-n-damage-associated-w-climate-change-legal-n-institutional-context-in-bangladesh.pdf>.
- Banerjee, O., Mahzab, M., Raihan, S., and Islam, N. 2015. An economy-wide analysis of climate change impacts on agriculture and food security in Bangladesh. *Climate Change Economics*, 6(01), 1550003.
- BHWDDB, 2012. *Master Plan of Haor Area*. Dhaka: Bangladesh Haor and Wetland Development Board, Ministry of Water Resources, Government of the People's Republic of Bangladesh.
- Disaster Management Bureau, 2010. *National Plan for Disaster Management 2010-2015*. Dhaka: Disaster Management Bureau, Disaster Management and Relief Division, Ministry of Food and Disaster Management, Government of the People's Republic of Bangladesh.
- Finance Division, 2014. *Bangladesh Climate Fiscal Framework, 2014*, Fiscal Division, Ministry of Finance, Government of the People's Republic of Bangladesh.
- FPMU, 2008. *The National Food Policy Plan of Action (2008-2015)*. Dhaka: Food Planning and Monitoring Unit, Ministry of Food and Disaster Management, Government of the Peoples Republic of Bangladesh.
- FPMU, 2010. *The National Food Policy Plan of Action: Monitoring Report, 2010*. Dhaka: Food Planning and Monitoring Unit, Ministry of Food and Disaster Management, Government of the People's Republic of Bangladesh.
- General Economics Division, 2012. *Perspective Plan of Bangladesh 2010-2021*. Dhaka: General Economics Division, Planning Commission, Government of the People's Republic of Bangladesh.
- General Economics Division, 2015. *7th Five Year Plan FY2016-FY2020*. Dhaka: General Economics Division, Planning Commission, Government of the People's Republic of Bangladesh.
- IPCC, 2014: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Field, C.B. *et al.* (eds)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1132 pp.

- IPCC, 2014: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Barros, V.R. *et al.* (eds)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 688.
- Kobayashi, S., and Furuya, J. 2011. Comparison of climate change impacts on food security of Bangladesh. *Studies in Regional Science*, 41(2), 419-433.
- MoA, 2018. *National Agriculture Policy, 2018*, Ministry of Agriculture, Government of the People's Republic of Bangladesh.
- MoA, 2020. *National Agricultural Extension Policy, 2020*, Ministry of Agriculture, Government of the People's Republic of Bangladesh.
- MoDMR, 2017. *National Plan for Disaster Management (2016-2020)*. Dhaka: Ministry of Disaster Management and Relief, Government of the People's Republic of Bangladesh.
- MoDMR, 2021. *National Plan for Disaster Management (2021-2025)*. Dhaka: Ministry of Disaster Management and Relief, Government of the People's Republic of Bangladesh.
- MoDMR, 2019. *Standing Orders on Disaster, 2019*, Ministry of Disaster Management and Relief, Bangladesh Secretariate, Dhaka – 1000.
- MoEF, 2009 a. *Bangladesh Climate Change Strategy and Action Plan 2009*. Dhaka, Bangladesh: Ministry of Environment and Forests, Government of the People's Republic of Bangladesh.
- MoEF, 2009 b. *National Adaptation Programme of Action*. Dhaka: Ministry of Forests and Environment, Government of the People's Republic of Bangladesh.
- MoEF, 2010. *Biodiversity National Assessment and Programme of Action 2020*. Dhaka: Ministry of Environment and Forests, Government of the People's Republic of Bangladesh.
- MoEF, 2013. *Bangladesh Climate Change and Gender Action Plan*. Dhaka: Ministry of Environment of Forests, Government of the People's Republic of Bangladesh.
- MoEF, 2015. *Intended Nationally Determined Contributions (INDC)*. Dhaka: Ministry of Environment and Forests, Government of the People's Republic of Bangladesh.
- MoEF, 2016. *Bangladesh Environment, Forestry and Climate Change Country Investment Plan*. Dhaka: Ministry of Environment and Forests, Government of the People's Republic of Bangladesh, Bangladesh Secretariate, Dhaka – 1000.
- MoFL, 2014. *National Shrimp Policy, 2014*, Fisheries – 2 and Law Section, Ministry of Fisheries and Livestock, Government of the People's Republic of Bangladesh.
- MoHFW, 2015. *National Nutrition Policy*. Dhaka: Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh.
- MoHFW, 2015. *National Health Policy*. Dhaka: Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh.
- The Bangladesh Water Act, 2013 (Act No. 14 of 2013).
- The Climate Change Trust Fund Act, 2010 (Act No. 57 of 2010).
- The Constitution of the People's Republic of Bangladesh, 1972 (As Amended Up To Date).
- The Disaster Management Act, 2012 (Act No. 34 of 2012).
- The Environment Conservation Act, 1995 (Act No. 1 of 1995).
- The Environment Conservation Rules, 1997.
- The Environment Court Act, 2010 (Act No. 56 of 2010).
- World Bank, 2016, *BCCRF Annual Report*, Dhaka: Bangladesh Climate Change Resilience Fund and Ministry of Environment and Forest, Government of the People's Republic of Bangladesh.