

Executive Summary

From Perception to Action: Understanding Loss and Damage Due to Climate Change in Bangladesh

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Climate change is impacting many countries in diverse ways. Most are already suffering due to temperature and climatic event extremes including increased frequency and intensities of floods, cyclones, rising sea levels and salinity levels and drought. All of these climate change impacts are causing various kinds of loss and damage such as damage to standing crops and the loss of real and potential crop output threatening food security, causing widespread health problems, increasing morbidity as well as mortality and resulting in the loss of infrastructure and industrial output among other impacts.

As the potential severity of some of the future impacts of climate change as well as increasingly vulnerability to climatic factors and the potential impacts on a variety of sectors becomes evident, the need for a more comprehensive understanding of these issues has become clear. Against this backdrop, in 2008 the Alliance of Small Island States (AOSIS) proposed that the issue of Loss and Damage (henceforth, L-D) should be included as part of the international negotiations on climate change. At COP-16 Parties decided to establish a work programme to address the issues related to L-D in developing countries in a more comprehensive and manner.¹ The matter was subsequently referred to the Subsidiary Body on Implementation (SBI).

During COP 17 in Durban the issues were considered further and a decision has been taken to address the issues under three thematic areas, which are:

Thematic area 1: Assessing the risk of loss and damage associated with the adverse effects of climate change and the current knowledge of the same.

Thematic area 2: A range of approaches to address loss and damage associated with the adverse effects of climate change, including impacts related to extreme weather events and slow onset events, taking into consideration experience at all levels.

Thematic area 3: The role of the Convention in enhancing the implementation of approaches to address loss and damage associated with the adverse effects of climate change.

The present paper has tried to look into the Thematic Area 1 and attempted to determine the needs associated with assessing the risk of loss and damage in the national context of Bangladesh. Apart from clarifying issues of definitions and concepts as well operational procedures for the measurement of loss and damage and the risks thereof, the paper presents two case studies, one on flood (as an example of rapid onset event (ROE) and the other on drought (as an example of a slow onset event (SOE) which allow for an overview of the issues for assessing the loss and damage. related to two different climatic events in the national context of Bangladesh.

Attempts have been made to clarify the concepts and definitions of hazard, vulnerability, exposure and finally, risk. It is the extent and nature of the hazard including its frequency of occurrence, exposure and vulnerability, which determine the extent and nature of risk. Particularly two points regarding hazard are worthy of mention. First, the probability of a hazard can increase 8 to 10 fold as demonstrated by the probability of extreme temperature in USA. As climate change progresses and the probability of a particular hazard changes, risk will change accordingly. However, risk will change even if the probability of hazard given that vulnerability and exposure are also functions of risk.

This paper has demonstrated issues that need attention on this very complex and interactive phenomenon of hazards, vulnerability, exposure and risks due to climate change and consequent loss and damage. For want of resources and time, the research methodology focused on a literature review as well as other secondary sources of information and discussions with stakeholders. There are many issues that need further elaboration, investigation and analyses. One particular point we want to make is that a good understanding of the characteristics of a hazard is important as each hazard has unique impacts on human societies. While the outcomes of hazards are always in economic, social or environmental terms, the vulnerability pathways are generally different and sections of the population exposed to a risk may also be different.

¹ [Decision 1/CP.16, paragraph 26.](#)

This paper has been prepared in the context of the 'Loss and Damage in Vulnerable Countries Initiative', which is part of the Climate and Development Knowledge Network. Responsibility for the content solely lies with the authors.

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This report suggests several ways in which loss and damage may arise due to the differences in the nature and extent of both vulnerability and exposure. A differentiation has been made between rapid onset events (ROE) and slow onset events (SOE) and their implications for vulnerability, exposure and the risk of loss and damage. It has been shown that the vulnerability is better understood in terms of how it influences loss and damage than exposure. Furthermore, the fact that ROEs may often have slow onset components, which are no less disruptive of normal economic functioning or environmental services than direct impacts of ROEs, is little understood. The report also differentiates direct and indirect as well as tangible and intangible loss and damage and describes the difference between impacts at the micro level and those at the macro level.

This report provides a simple template for the utilisation of data for assessing loss and damage tested on a pilot basis. In order to properly assess the risk of loss and damage it is necessary to undertake a hazard, exposure and vulnerability analysis. The risk of loss and damage depends on these three dimensions and will change depending on the intensity of the hazard and the levels of exposure and vulnerability. Exposure can be differentiated into categories including: people, assets and properties, livelihoods, critical facilities, infrastructure and resources. Vulnerability can be differentiated into categories including physical, economic, social, environmental, cultural and institutional.

Extensive discussion has been made on some of the real life applications of the ideas and concepts in case of flood. Somewhat limited case study has also been made of drought and the consequent loss and damage.

Given the variations in the extent and nature of loss and damage due to different hazard and levels of exposure and vulnerability along with significant challenges associated with the availability of data and information, there are few assessments of the risk of loss and damage being undertaken at present. Those that are being undertaken should be improved and built upon. Data needs are paramount to assessing the risk of loss and damage. A plethora of organisations exist, which collect some of the relevant data - but not all - in various forms and for a range of purposes. However, these data usually not available in the public domain. Moreover, there is a need for streamlining at least some of the core data related to climate change and its impacts. Without this, risk mapping will remain haphazard and estimations of potential or realised loss and damage will be difficult. Coordination and the use of common platforms for the purpose are key for assessing the risk of loss and

damage. Finally there is a need for capacity building to improve the ability to undertake risk assessments and tailor the information in a way that helps policymakers make sound decisions to address loss and damage in Bangladesh.

Several policies were reviewed and are outlined in the report. Few of these policies refer specifically to climate change and thus the capacity needs identified within them are not geared towards building human and institutional capacity on addressing climate change.

The report notes that while many policies do not incorporate climate change issues, guidelines for responding to disasters have been prepared and are contained within the Standing Order on Disasters, However, officials need to be trained in how to implement these guidelines. It is also important for agencies and organisations to coordinate and pool expertise in assessing the risk of loss and damage. For example, the Met department should on a regular basis provide the meteorological picture on drought and Bangladesh Space Research and Remote Sensing Organisation (SPARRSO) should provide the indicators of agricultural drought by providing the Normalised Difference Vegetation Index (NDVI) anomalies. With this information BBS and the Ministry of Agriculture to be alerted to the situation on the ground and the government as a whole will thus be warning of impending threat to crops. Thus, policymakers will be armed with information to make decisions that help avoid the risk of loss and damage.

To facilitate resource mobilisation a special budgetary allocation for the preliminary works out of the Bangladesh Climate Change Trust Fund of the Government of Bangladesh should be created. However, the request for funding has to come from the Planning Commission as it has the mandate to mainstream disaster management in planning. Furthermore, the Ministry of Environment and Forests may use reports on these actions for mobilising resources through allocations from Green Climate Fund or other funding mechanism within the UNFCCC.

A final recommendation for a way forward is that the importance of establishing attribution of the impacts and resulting loss and damage to climate change. This remains a challenging task, but would be worthwhile to begin with a working hypothesis. Some indications of how this can be done are provided in the IPCC Special Report on Extreme Events.

The Loss and Damage in Vulnerable Countries Initiative

Accepting the reality of unmitigated climate change, the UNFCCC negotiations have raised the profile of the issue of loss & damage to adverse climate impacts. At COP-16, Parties created a Work Programme on Loss and Damage under the Subsidiary Body on Implementation (SBI). The goal of this work programme is to increase awareness among delegates, assess the exposure of countries to loss and damage, explore a range of activities that may be appropriate to address loss and damage in vulnerable countries, and identify ways that the UNFCCC process might play in helping countries avoid and reduce loss and damage associated with climate change. COP-18, in December 2012, will mark the next milestone in furthering the international response to this issue.

The "Loss and Damage in Vulnerable Countries Initiative" supports the Government of Bangladesh and the Least Developed Countries to call for action of the international community.

The Initiative is supplied by a consortium of organisations including:

Germanwatch

Munich Climate Insurance Initiative

United Nations University – Institute for Human and Environment Security

International Centre for Climate Change and Development

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International Center for Climate Change and Development (ICCCAD)

Based in the Independent University, Bangladesh (IUB), the International Centre for Climate Change and Development's aim is to develop a world-class institution that is closely related to local experience, knowledge and research in one of the countries that is most affected by climate change.

ICCCAD supports growing capacity of Bangladesh stakeholders, as well as enabling people and organisations from outside the country to benefit from training in the field, where they are exposed to the adaptation "experiments" and increasing knowledge. Through the expertise and research outputs of ICCCAD and its local partners, international organizations will be able to continue to share and transmit knowledge of climate change and development challenges around the world for the benefit of other LDCs, and their governments, donors and international NGOs.

ICCCAD has begun running regular short courses for NGOs, donors, the media, government staff, private sector, etc. as well as initiating courses for local participants and Bangladeshi stakeholders, it provides tailor-made courses for organizations and departments that are seeking to enhance their capacity in regard to climate change.

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