

Policy Brief # 3

Increasing Loss & Damage from Climate Change Impacts:

Vulnerable Communities in Coastal Bangladesh deserve Compensation

The global scientific community recognizes that climate change is a critical development challenge that undermines sustainable development, poverty eradication and equity. The impacts are already felt particularly across the developing world. In many cases, the most poor and marginal communities are the most affected despite being least responsible for creating the problem. Governments are failing to act swiftly or with sufficient ambition to reduce emissions and there has also been inadequate support for effective adaptation in the developing world resulting in huge loss and damage. Moreover, there is little doubt that emissions that have already occurred will result in further unavoidable impacts in the near future with severe consequences on human society, economies and ecosystems. The UNEP warns that even with full implementation of all current national commitments as set out in the Intended Nationally Determined Contributions (INDCs) submitted to the 21st Conference of Parties (CoP) to the UNFCCC, the 2030 emissions gap would still be 12 Gt CO₂ putting the world on track to a temperature rise of around 3°C by 2100, which will bring significant adverse climate impacts. Hence, the need for urgent mitigation and adaptation efforts remains high. However, in some contexts it is also strongly felt that the limits to adaptation have already been reached and that affected communities have lost lives and had their rights to adequate food, water, health, employment and livelihoods undermined. In this context, the concept of Loss and Damage (L&D) is emerging as a distinct focus within the UNFCCC. It calls for greater investment in adaptation and resilience-building measures that will help to avoid future L&D and risk from climate change.



Photo: People are reconstructing a coastal embankment after it was breached by cyclone Aila.

Source: BCAS

Mitigation is low globally and need for adaptation is high. The limited adaptation resulted in huge L&D.

**- Dr. Atiq Rahman,
Executive Director,
BCAS**

BCAS in association with partner organizations have conducted a participatory and multi-disciplinary assessment (the final report of the study would be uploaded onto BCAS website at: www.bcas.net) of L&D in 3 selected villages (Chokbarain Satkhira district; Jaliakhali in Khulna district; and Rajeswar in Bagerhat district) of the Southwestern coastal region of Bangladesh. Most of the villagers were poor and economically marginal and vulnerable to climate events. This paper focuses on these coastal areas, where increasing frequency and severity of climatic extremes, together with slow onset changes such as rising sea levels, have already resulted in huge and irrecoverable economic and social losses. Current trends suggest that further serious losses and damage are inevitable and that the burden of these is likely to be borne disproportionately by the poor in the regions.

The main findings of the study

L&D is an emerging concept which refers to the adverse effects of climate change that cannot be prevented by the current level of global mitigation and is beyond local adaptation. Economic L&D includes the direct effects on property, goods and services, productivity, income and livelihoods while non-economic L&D includes other negative effects such as loss of community linkages and family ties, human displacement, loss of cultural heritage, indigenous knowledge and practices, food and nutrition, health, natural resources, biodiversity and ecosystem services. (UNFCCC, 2012: Technical paper on L&D). Non-economic L&D can exacerbate economic L&D by increasing human suffering and vulnerability. The BCAS study assessed community perceptions of the impacts of major climate factors on livelihoods.

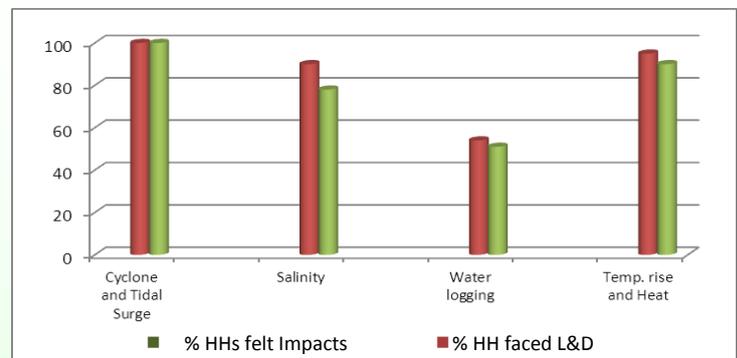
Figure-1: Relative level of impacts as perceived by the communities studied

Climate Factors	Agriculture	Fisheries	Water	Health	Infrastructure	Forest and biodiversity	Family and community
Extremes: Cyclones, tidal surges and floods	++++	++++	+++	+++	+++++	+++	+++++
Slow onset: Salinity, drought, High tide, water logging and SLR	++	++	++++	++	+	+	++
Variability: Temperature, erratic rainfall	+	+	+	++	-	++	+

Note: Higher the (+) signs means greater is impact

The study areas are located near the Sundarbans mangrove forests on the Bay of Bengal. The study covered 300 households (100 from each village) and followed a multi-stage random sampling. The study followed a participatory and comprehensive approach based on the United Kingdom (UK) Climate Change Risk Assessment (CCRA) framework which focuses on people, livelihood and social vulnerability to assess L&D at community level. It assessed the types, nature and extent of both economic and non-economic L&D over the last 10 years considering the impacts of super cyclones *Sidr* (2007) and *Aila* (2009), increasing salinity, water logging and erosion in the study areas. Household surveys, focus group discussions, key informant interviews, and case studies were the tools used to assess the L&D. Figure-2 shows the perceptions of the vulnerable community, the extent of impacts and L&D felt by the surveyed households.

Figure-2: Household Response about Impacts and Loss & Damage



The study areas are representative of many coastal communities in Bangladesh that are being affected by cyclones, tidal surges, salinity, water logging and river bank erosion. The major livelihood options of three study villages are agriculture, wage labour, fishing, fish fry collection, and fish and shrimp cultivation. Many people also depend on gathering of forest resources, small businesses and services for their livelihoods. Average annual household income was BDT 83,070 (USD=1,065) in 2014, but over 60% people in the area are extremely poor with annual income less than BDT50,000).

25.3% of people in the study area are involved in agriculture. All respondents in the study involved in agriculture reported long-term losses including decline in soil fertility and productivity contributing to food insecurity and malnutrition. About 88% respondents reported impacts on other sources of employment and income, loss and damage to assets, impacts on health and water availability, loss of ecosystem services, and loss of land and habitats. Migration as a coping strategy has had impacts on social cohesion as well as negative impacts on religious and cultural activities of coastal society. The affected people sometimes compete over scarce resources that results in social conflicts. The following table-1 shows the L&D in economic terms in the key sectors.

The average household L&D in economic terms was Tk. 313,184 (USD= 4,016) over 10 years, due to recent cyclones and increasing salinity in water and soil. Agriculture was the worst affected sector followed by wage earning and fisheries. People also incurred huge L&D in houses and small infrastructures. It is relatively easy to put a price on tangible items damaged, but it would be difficult to quantify the long term damage such as loss of economic opportunity and social cohesiveness.

Disasters are life partners and we have no luck to live peaceful lives.

- Mr. Bidhu Bhusan, age 48, Chokbara

Table-1: Average Household L&D in BDT by Village (1 USD = BDT 78)

Areas of Impacts and L&D	Villages by District			
	Chakbara, Satkhira	Jaliakhali, Khulna	Rajeshwar.Bagerhat	Average
Agriculture	65842	206906	97484	147619
Fisheries	81127	83723	44387	67929
Livestock	30261	47923	36015	38071
Wage earning	57500	74909	50380	71468
Water, Sanitation & Health	19337	21328	13425	18013
Houses and small infrastructures	68255	69852	61429	66512
Trees and Plants	21421	21768	39538	27411
Others: fuelwood and other, forest products, small trade and business, boats etc.)	77188	44212	64613	66233
All	259,344	411,914	268,294	313,184

Box-1: Long term impacts of a damaged coastal embankment

Being situated near the largest river in the area, Chokbara village is heavily prone to river erosion. The embankment around Gabura Union is weaker near the Chokbara village, where the river Kholpetua flows. The geophysical position of the village makes it vulnerable to constant damage by salinity and gradual erosion of the embankment. When Cyclone Aila hit, the embankment was broken down and Chokbara village faced severe effects of salinity intrusion by tidal surges. Aila washed away everything including the standing crops, fish/shrimp farm, houses and the economic enterprises. People were left with barely enough land to inhabit. The village was surrounded by water. Boats were the only means of transportation. But most of the people who had no boat were confined to a small island for a long period, resulting in many cases of diarrhoea, dysentery and skin diseases. Most of the poor were prevented from earning and children's education was ceased. The breakdown of the embankment has affected livelihoods in multiple ways. Salinity intrusion has worsened drinking water crisis. The tube wells in the village are now dysfunctional. Salinity has caused gradual damage to houses and infrastructure. Agriculture and normal fishing and other income-earning activities are no longer possible. Although once everyone had livestock, Aila-induced salinity destroyed the grazing fields and the keeping of livestock has declined around 75% compared to 15/20 years ago. People reported that 15/20 years ago, there were huge trees in the villages and homesteads, but after Aila, the area has been turned into semi-desert. People cannot perform their religious rituals and celebrate cultural festivals, all of which has negatively impacted on their mental health. Food crisis and malnutrition have reduced their working capacity and life expectancy. Many people have already migrated to the nearest cities for their livelihoods.



Coastal embankment damaged by cyclone and tidal surge.

Limited adaptation and need for greater financial support

People in the study area are undertaking limited adaptation and disaster management actions. Government, NGOs and voluntary organizations are supporting the communities with humanitarian aid and rehabilitation of agriculture, water and health systems and infrastructure development. However greater efforts are needed for protection of the communities with strong embankments and protective walls, and shelters for cyclones and tidal surges. The villages need climate resilient houses and infrastructure, job creation and livelihood support. Provision needs to be made for resettlement, either temporarily (e.g. in order to take people out of a danger zone when risks are known to be high, as preventative measure before a cyclone) or in some cases permanently because the coastal zone has become highly unsafe. In agriculture, support is needed for adoption of techniques, such as saline resistant and high yielding paddy varieties for better productivity. In the health sector much more support is needed to protect water supplies and sanitation and health facilities.

Recovering communities demand compensation

The communities studied are adapting to the impacts of climate change and partially recovering from the loss and damage caused by cyclones and salinity, although most have not yet managed to regain their earlier living standards. More support for early recovery and effective adaptation, channeled through local government structures, local NGOs and international development agencies, would help communities to recover from the shocks they've faced and contribute to more resilient development, reducing further losses and damage in the long term.

Within the communities studied, it is possible to quantify a reasonable amount of compensation - at least Tk. 250,000 (USD=3,200) per household would be needed to compensate for losses and damage during the last 10 years. An aggregate figure, suggested by the 3 village communities of Chokbara, Jaliakhali and Rajeswar, was USD1.5 million to address climate change impacts and L&D immediately. The affected community would need further financial support to protecting their lives and livelihood and pursuing climate resilient development at the local level. Such compensation and financial supports could be used for agriculture, water, sanitation and reconstruction of houses and infrastructures. The community urged that their demands for financial supports and compensation should be put forward in the global climate negotiations.

The study further identified a set of recommendations and urgent action points for the government, NGOs and development partners.

L&D due to extreme climatic events and slow-onset climate change impacts are already surpassing the capacities of poor communities and developing countries to prevent loss and damage through risk reduction and adaptation. New approaches on finance, compensation and rehabilitation are needed.

Box-2: Rebeka Khatun suffers from lack of safe drinking water and health security

Rebeka Khatun is 48 years old. She lives alone with her disabled mother and a daughter. Her family was severely affected by cyclone Aila. Before Aila, Rebeka could filter pond water for drinking, but after Aila, water logging lingered almost three years in the village, which left no single drop of saline free water. The only source of drinking water is a tube well three kilometers far from her home. But, her physical condition prevents her from carrying water for that distance so she must pay for water to be carried for her. She asks tearfully, "It is possible to pass a day without food, but how can we live without drinking water?"

Health problems are looming large for Rebeka and her family as they struggle to survive. Rebeka's income is less than the past as she can no longer work every day of the week. She can earn 1 thousand to 3 thousand taka per month, but her daughter's education and absolute minimum living costs amount to almost 1,500 taka per month.

Saline water has destroyed all sources of safe drinking water and the fertility of land. Rebeka's despair was clear as she sighed, "I do not think there is any escape from this situation."

A solution could be found however. Purchase of a large water tank at cost of around Tk. 15 thousand would solve the drinking water problem for Rebeka and her family.



Drinking water collection in coastal village has been a very difficult task after cyclone Aila

Recommendations

New and effective institutional arrangements are required under the UNFCCC to address the challenge of economic and non-economic losses associated with climate change. Finance is important but alone cannot adequately compensate people for the loss of family, territory, culture, or livelihoods that will result from rapid changes in climate, whether at local, regional or global level. New approaches are also necessary to address the adverse effects of slow-onset disasters that lead to migration, displacement and planned relocation.

A mechanism on L&D must be established in Paris in December, 2015. A universal climate agreement must be reached which is effective in addressing the unavoidable adverse climate impacts on poor communities and countries. The mechanism mandate should also be expanded to include among other things, commitments to establishing financial and technical advisory panels and arrangements regarding displacements, coordination and risk transfer. A comprehensive framework under the UNFCCC would therefore ensure and provide coherence between three necessary functions of convention bodies related to loss and damage:

- Prevention through climate change mitigation, disaster risk reduction and adaptation approaches, supported by adequate means of implementation, including finance, technology and capacity-building ;
- Compensation and rehabilitation through the establishment of an International Mechanism on Compensation and Rehabilitation; and
- Regional and global co-ordination of efforts to address loss and damage outside of the Convention in order to ensure coherence, including efforts related to migration, displacement and planned relocation, and international finance.

A roundtable discussion was organized on 30 November, 2014 in Dhaka for sharing the study findings and to identify action points and recommendations for negotiation at CoP 21 in Paris in November/December 2015. Participants included senior government officials, civil society leaders, climate scientists, climate negotiators, academics, representatives of NGOs, human rights organizations and media. The discussion suggested that Bangladeshi negotiators in Paris should demand from the rich and developed countries adequate compensation for L&D on behalf of vulnerable communities in Bangladesh, based on the available evidence.

Civil society and NGOs further recommended that:

- Mechanisms to address L&D must be agreed in Paris;
- L&D responses must be integrated with adaptation, DRR and climate resilient development frameworks;
- Greater investment must be made in mitigation through deeper carbon cuts;
- The most vulnerable and worst affected groups must be targeted;
- Government and NGOs must work in coordination on L&D and on compensation for vulnerable groups;
- Planning on adaptation, mitigation and DRR should be more decentralized;
- Civil Society Groups should have greater solidarity and strong position on L&D in climate negotiations; and
- Government and NGOs must take into account L&D while planning and implementing local and sectoral development.

References

1. Marston A. (2013): The Report of the High Level Panel of Eminent Persons on the Post-2015 Development Agenda, UNDP, New York
2. UNEP (2015): National climate targets signal 'unprecedented momentum' for climate agreement in Paris – UN report, [Press release](#), 6 November 2015, Geneva.
3. Calculated considering the impacts of cyclones Sidr (2007) and Aila (2009) and salinity on the key livelihood sectors, using recall methods at household level.
4. ActionAid (2012), "Tackling the Limits to Adaptation: An International Framework To Address Loss And Damage From Climate Change Impacts," www.actionaid.org.uk
5. Christian Aid (2015): Time for Climate Justice, Draft Briefing for Paris, No X, London, UK.



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