Understanding Loss and Damage in an rapidly changing climate: Background Briefing

Loss and damage (L&D) refers to the impacts of climate change that cannot be (or have not been) avoided through mitigation or adaptation. It is a general term used in UN climate negotiations to refer to the consequences of climate change that go beyond what people can adapt to. Due to human induced climate change, millions of people are today facing the real-life consequences of higher temperatures, rising seas, fiercer storms, desertification, and unpredictable rainfall. In addition to economic losses and damages to households, communities, infrastructure, and industries like agriculture, forestry, fisheries, and tourism, L&D also encompasses "noneconomic" losses to lives, cultures and territories. For example, in coastal Bangladesh, salt farming is a major source of employment. But in recent years due to frequent cyclones, tidal surges and heavy rainfall have hampered salt production, eroded the country's self-sufficiency, and forced it to import salt to manage the market shortfall. The collective failure to adapt and mitigate to climate change has contributed to more loss and greater damage, especially in the countries that have done the least to cause it and are least prepared to address it. A study[1] conservatively estimated the bill from extreme weather events in the twenty most vulnerable low- and lower-middle-income countries at $593 billion, while for India it accounts to $256 billion[1] for the time-period 1998-2017. While, as per the latest estimates, the projected total economic cost of loss and damage is estimated to be 290-580 billion USD in 2030, 551-1,016 billion USD in 2040, and 1,132-1,741 billion in 2050 in developing countries alone.

Some L&D examples that have made recent headlines include:

Sundarbans

The mangrove forests region of Sundarbans is shared by both India and Bangladesh. Mangroves act as a natural barrier against disasters like cyclones and floods. The increasing consequences of global warming has resulted in loss of land and mangroves in the last three decades. Along with Sea level Rise (SLR), salinisation is another problem faced by paddy farmers. According to a study published in ScienceDirect, this ecologically fragile area has lost 24.55 percent of mangroves (136.77 square km) due to erosion over the past three decades.

Bengaluru Floods

Known as India's IT hub, Bengaluru reportedly registered a loss of over Rs 225 crores due to the recent incessant rainfall episode. The city recorded 132 mm of rain in a span of 24 hours on September 5, which accounted for 10% of the seasonal rainfall. While changes in

[1] This "conservative" calculation assessed only the immediate damage from extreme weather events and does not cost in externalities for health, food security, and state capacity. A. Karim Ahmed and Jeffrey D. Tamucci, "What Is the Financial Cost of Loss and Damage from Climate Change?" Economic, Land & Climate Insight, June 12, 2022.

monsoon systems due to climate change led to torrential rains over the city, the situation worsened due to poor urban planning which did not let the water find its way out, eventually inundating it for days. With increasing frequency and intensity of extreme weather events, this can be more recurrent across Indian cities, impacting lives, livelihoods and GDP which is a form of an economic loss.

Himalayan region

Glacial retreat in the Himalayan regions poses a potential by affecting the availability of water for drinking, irrigation and the generation of hydropower, as well as economic activities that depend on stable water supplies. As the glaciers continue to recede, runoff will likely be concentrated in the wet season with little flow during the dry season. This will likely lead to more frequent droughts. The increased runoff also feeds glacier lakes which are at increasing risk of overflowing, threatening lives and livelihoods and causing potentially widespread displacement throughout the region.

Latest example of this can be seen in the increased events of landslides and mudslides in Himachal Pradesh and Uttarakhand in the last few years. In February 2021, flash floods triggered by glacial burst in Chamoli district of Uttarakhand swept away the state-run power giant NTPC's hydropower project that took away lives of about 170 people and damaged worth around ₹1,500 crore.

Similarly, the **Pakistan floods of 2022** are the latest example of loss and damage. Reportedly, economic damages were around $18 bn, wiping out more than 8 million acres of crops and displacing more than 33 mn people. Apart from contributing to GDP loss, glacial melting also forms part of non-economic loss and damage in the form of loss of culture and the social and psychological impacts of forced migration and relocation.

Chennai Floods

Chennai floods in November, 2015 were reportedly the largest disaster, causing estimated economic losses of USD 2.2 billion. Insured losses were estimated at around USD 755 million, making these floods the second costliest insurance event in India and a large part of the losses originated from commercial lines.

Mechanisms for Loss & Damage Finance

Table 1. Types of activities to fund when minimising, averting and addressing loss and damage

	Sudden-onset events	Slow-onset events
Averting loss and damage (addressed through mitigation finance)		
	Decarbonisation measures	Decarbonisation measures
	Reforestation and land use management	Reforestation and land use management
	Behaviour change	Behaviour change
Minimising loss and damage (addressed through adaptation finance)		
	Early warning systems triggering effective pre-event prevention and response actions	Forecasting and early warning triggering pre-event risk reduction
	Preventative building measures (retrofitting and new building codes to increase the resilience of infrastructure)	Physical risk reduction measures (e.g. dykes and sea walls)
	Contingency planning	Other risk reduction measures (e.g. climate-resilient agriculture)
	Vulnerability reduction and capacity-building	Vulnerability reduction and capacity-building
Addressing loss and damage (as yet unfunded through climate finance)		
Economic loss and damage	Compensation and other social protection measures	Planned relocation /assisted migration
	Short and long-term recovery and rehabilitation	Reskilling and alternative livelihoods provision
	Rebuilding damaged infrastructure	Compensation and other social protection measures
	Planned relocation / assisted migration	
	Support for rebuilding livelihoods	
	Insurance and risk transfer	
Non-economic loss and damage	Recognition and repair of loss (whether or not accompanied by financial payments)	Recognition and repair of loss (whether or not accompanied by financial payments)
	Enabling access / safe visits to abandoned sites	Enabling access / safe visits to abandoned sites
	Active remembrance (e.g. through museum exhibitions, school curricula)	Active remembrance (e.g. through museum exhibitions, school curricula)
	Counselling	Counselling
	Official apologies	Official apologies

Sources: Linnerooth-Bayer and Hochrainer-Stigler (2015), Gewirtzman et al. (2018), Roberts and Pelling (2018), Wallimann-Helmer et al. (2019), and Pandit Chhetri et al. (2021).

Developing countries have been asking for L&D support since the beginning of the UN Framework Convention on Climate Change (UNFCCC), which was signed in 1992. The Vanuatu Draft (on behalf of the Alliance of Small Island States, AOSIS) called for "the financial burden of loss and damage suffered by the most vulnerable small island and low-lying countries… [to] be distributed in an equitable manner amongst the industrialized countries." The proposal even included creating an insurance scheme to provide financial resources to countries impacted by sea level rise to which each country would contribute

based on their relative contribution to global emissions and their share of the global gross national product.

Most of these discussions around L&D pivot around money without which, other action to address L&D is extremely limited. G77 and the AOSIS have repeatedly emphasized the importance of L&D at the annual conference of the parties to the UNFCCC (COP). These efforts have often faced resistance from the "Annex II" countries under the UNFCCC—members of the Organisation for Economic Co-operation and Development (OECD) in 1992—which include most of the world's largest current and historical emitters, but eventually yielded some concrete results, including the recognition of L&D in Article 8 of the 2015 Paris Agreement. Yet despite the recognition, countries' NDCs and pressure from climate activists this stays a standing agenda item, and no COP has adopted it, which has left the developing countries increasingly dissatisfied.

Under the Paris Climate Agreement, countries recognized the importance of "averting, minimizing and addressing" loss and damage. Loss and damage can be "averted" and "minimized" by curbing greenhouse gas emissions (mitigation) and taking preemptive action to protect communities from the consequences of climate change (adaptation). "Addressing" loss and damage is the crucial third pillar of climate action: helping people after they have experienced climate-related impacts. At COP26, a large coalition of climate-vulnerable countries advocated for creating a new finance facility or fund dedicated to loss and damage. These countries established a two-year Glasgow Dialogue to discuss possible arrangements for loss and damage funding and agreed to operationalize and fund the Santiago Network on Loss and Damage (SNLD), which aims to provide developing countries with technical assistance to address loss and damage. Following the overall lack of progress at Bonn UN negotiations, loss and damage will again take center stage at COP27.

Therefore, the negotiations around **L&D financial mechanism will need to consider four key questions**: (1) Where will a financial mechanism be located? (2) Who will pay for it? (3) Who will control it? and (4) What will it do?

1. **Location:** The L&D mechanism could be located either within a climate regime (a new entity under COP's Financial Mechanism) or outside the climate regime including another UN agency, IMF, or World Bank, the G7 or G20, or a new UN trust fund.

2. **Funding:** There are two broad options for funding: public contributions from donors (e.g., developed and developing countries, philanthropies, sovereign wealth funds, and the IMF and World Bank) or impose new taxes (e.g., levies on airline travel, bunker fuel, fossil fuel extraction, greenhouse gas emissions, and financial transactions). An L&D financial mechanism could adopt both approaches, though some taxes could negatively impact some of the very countries advocating for L&D.

3. **Governance:** The governance mechanisms would depend on mechanism's funders and activities; any facility should be guided by the principle of Common But Differentiated Responsibility (CBDR) and should be new and additional; needs-based, adequate and predictable; public and grant-based; guided by vulnerability criteria; and locally driven.

4. **Actions:** The fund should make clear how L&D is both distinct from and linked to mitigation and adaptation and should take special care to address critical gaps in financing for slow-onset and noneconomic losses.

So far, a handful of developed countries have signalled some level of support for loss and damage financing including Canada, Denmark, Germany, New Zealand, Scotland and the Belgian province of Wallonia.

Table 2. Financing instruments for addressing loss and damage

Type of funding	Funding source
International / public finance	International climate finance (bilateral or multilateral)
	International disaster funds (humanitarian aid, emergency services or assistance loans)
	Philanthropic or solidarity funds
	Contingency loans
National finance	National disaster funds
	Self-funding from population
	Social protection schemes (social funds and reserve funds from national budget)
'Innovative' finance	Air passenger levy
	Carbon tax on fossil fuels
	Debt swaps / debt relief / debt cancellation
	Shifting fossil fuel subsidies
	Litigation
Insurance and risk transfer	Insurance and micro-insurance (setting premiums to reflect risk)
	Catastrophe bonds / resilience bonds
	Risk pooling

Sources: Linnerooth-Bayer and Hochrainer-Stigler (2015), Gewirtzman et al. (2018), Roberts and Pelling (2018), Wallimann-Helmer et al. (2019), and Schaefer, Jorks and Seck (2021).

Addressing loss and damage could span a range of activities and should be shaped by the communities that are experiencing them. It could also entail providing immediate humanitarian assistance after an extreme weather event, offering relief and rehabilitation to victims through provision of basic amenities, enabling social protection systems to provide emergency cash transfer to the poor, and enhancing microcredit institutions to provide financing for livelihood restoration. Such funding could also be used to help people rebuild when their homes are destroyed. For example, while early warning systems in Bangladesh have helped radically reduce fatalities from extreme weather events, people leave the storm shelters to find their homes and livelihoods destroyed, and have thus unquestionably

experienced loss and damage. Finally, when necessary, funding for loss and damage can assist with migration and relocation of people who are permanently displaced and or help diversify skills if their original livelihoods are no longer available.

It is extremely important that developed countries use this UN climate summit, hosted in Africa by Egypt, to show solidarity with vulnerable countries by rallying behind them with more financial support to both adapt to climate impacts to lessen their severity and finally help manage the devastating losses and damages that they are experiencing already — both of which are essential to building resilience to climate change impacts that will continue to worsen.

Expert Speak

Ulka Kelkar, Director, Climate Change programme, WRI suggests to focus on 3 important things with regards to L&D ahead of COP 27 (*Excerpts taken from her talk at a recent Climate Trends webinar on India's Long Term Strategy, recording can be accessed here - Passcode: Jh.d!r0C)*

"One is to operationalise the Santiago Network for Loss & Damage which was created. There is a coalition of vulnerable countries which was formed called the ACT2025 and they have proposed a formal structure with experts and resources for the SNLD.

Secondly, L&D needs to become a formal permanent agenda item in the COP, especially in the subsidiary bodies, only then it will get this formal recognition so every time we don't have to fight for it to be on the agenda.

Third, set up the actual funding and the flow of the funding to the developing countries or projects where L&D actions need to be implemented. An example of this is the V20 nations which set up a joint multi-donor trust fund dedicated with a window for L&D, so if someone wants to donate money they know where to put that money and how it will flow. The Bangladesh Climate Change Trust Fund is also a good example of how countries can put forward their domestic resources in addition to international ones, and implement these actions in partnership with longstanding local community based NGOs."

She also added, "*The Pakistan floods are on top of everyone's minds in the climate negotiations. Two points of an argument for L&D finance gets built from the situation of the Pak floods, firstly that private sector insurance completely breaks down during the scale of such a disaster. In the past people have talked about setting up climate disaster insurance mechanisms with a layer of public finance, but when faced with a disaster of this magnitude, these mechanisms completely break down. Also for countries like these or in the Caribbean etc, when facing such disasters, they fall deeper into climate debt. So the question is about where the additional money for loss & damage will come from. The COP26 Glasgow*

discussions happened before the Ukraine war broke out, when they said not to expect the USD 100 bn per year at least till 2023, now to talk about additional finance for L&D sounds even more tough. However, there are some good solutions, like Rachel Kyte in a recent op-ed talked about a windfall tax on fossil fuels companies, fee on voluntary carbon market transactions for buyers, a tax on business class travellers, and a debt for climate swaps. But more than the finance it is the issue of liability which deters developed nations from talking about Loss & Damage. An electric utility company in California, PG&E, was the first company in the world to file for climate change bankruptcy. And right now, if we acknowledge L&D then there is no stopping, for example, a child growing up in a developing country to sue a developed nation for the loss of quality of life, or their home or their future."

Kelkar further added, *"There have been some positives too and all is not just lost when we talk about developed countries doing their role. Denmark announced 13mn USD specifically for L&D.*

Vanuatu in its NDC update has mentioned that they will build climate resilient infrastructure, augment their health care systems, relocate vulnerable communities, and this will cost USD 178 million by 2030 which they need from donors. So it's a very important first step as very often donors ask what exactly will this fund be, what is the loss & damage and how much do you need. The Bangladesh Climate Change Trust Fund is also a good example of how countries can put forward their domestic resources in addition to international ones, and implement these actions in partnership with longstanding local community based NGOs. In the ongoing UNGA, the Human Rights Special Rapporteur has been inviting comments from people and put a special chapter on L&D. So in addition to the COP, this is also in focus at the UN."

***"**On L&D finance, India should express solidarity with the least developed and most vulnerable countries. But one of the very interesting pieces in the US is the rebate given to consumers for purchase of EVs, but provided the car is manufactured in North America and minerals are mined in North America. So what happened on the outside negotiations will be as important as what happens at the COP negotiations."*

<u>Climate Insurance and L&D</u>

Climate change and responses to it will introduce new risks on both the asset and liability sides of an insurance company's balance sheet. On the liability side, increasing frequency and severity of severe weather events, like extreme rain, and secondary impacts, like flooding and locust outbreaks, can reduce an insurer's ability to absorb and manage risk, while exposing them to unexpected rises in claims from catastrophic perils.

Insurance has played a central role in discussions on adapting to the impacts of climate change, dating back to the early 1990s, when the Alliance of Small Island States (AOSIS) proposed a global insurance fund to compensate small islands for sea-level rise. The Warsaw International Mechanism (WIM) Executive Committee (2016) emphasises the role of insurance in furthering climate risk management, or more specifically its role in proactively reducing and transferring risks.

Munichre, India's largest reinsurer, agrees that storms, flooding and drought are the key weather risks for the Indian region. Since they are unpredictable and extreme, these weather events are driving greater volatility in company losses, which makes structuring insurance solutions all the more challenging. In general, insurers have long relied on 'catastrophic models', which use historical loss data to price future risks. However, unprecedented climate conditions have made modelling future losses more difficult than ever before. The potential for major events to overwhelm an insurer's capacity to absorb climate-related losses is very real. Insurance solutions can help bolster early action in the face of a disaster, and speed up recovery to restore livelihoods and rebuild critical infrastructure so that people, communities and economies can rebound.

Indian insurers are lagging behind the progress of their global peers in disclosing the financial impacts of climate change for businesses. The public statements of the leading insurance providers in the country currently contain no disclosure on climate risk and management of weather related catastrophes. With losses mounting, Indian insurers can no longer avoid addressing the impact of climate change on their underwriting, pricing and investment decisions.

How do climate risks impact the insurance industry?

Climate risks are commonly categorised as either physical risks or transition risks. Both can impact the insurance industry's balance sheet.

For life insurers, there are important risks associated with chronic physical risks, such as unprecedented average temperature increases, in combination with corresponding increases in the range and transmission rates of infectious diseases that have unexpected mortality and morbidity impacts. It is important to note that the ongoing COVID-19 pandemic, which is directly affecting insurers' balance sheets, has been linked to the decline in biodiversity and climate change.

For non-life insurers, primary insurance business in property and casualty (P&C) - which makes up approximately 73% of the non-life insurance market - is likely to see the highest direct impact from both acute and chronic climate events. At the same time, chronic and slow-onset climate events, such as drought and sea level rise, also expose P&C insurers to

more frequent claims from storm surges and coastal flooding. For example, a 2019 climate risk management framework for India identified salt water intrusion to be hugely impactful for coastal farmers. However, it is important to note that currently, the penetration of non-life insurance in India remains low, at 0.9%. The future risks of climate change and its impact on insurers will likely reflect only the tip of the iceberg, as citizens and businesses face increasing rates of uninsured losses.

A report by Climate Trends stated "In 2020-21, the maximum number of insurance claims out of the total in India were due to damages caused by Cyclone Amphan, which caused immense damage in Eastern India including West Bengal. Yet India has the lowest rate of insurance penetration across Asia. Insurance sector is evidently ill-prepared for short-term and immediate climate related risks, while we're not even discussing how to deal with multi-decadal changes like sea-level rise, heat mapping, drought which is no longer a distant risk, but staring at us within 3-8 decades. The agricultural insurance model has also proven how volatile the conditions in India are for the insurance sector to succeed. Last year, a climate risk assessment survey across small, large & medium industries in Maharashtra, including the insurance sector, revealed that nearly half feel the need to re-assess business models and planning, while more than a third blame climate for capital destruction. Six out of every ten want to de-risk from climate change, and develop successful risk-transfer mechanisms and pricing which adapt to the external environment."

There is empirical evidence that the economy recovers much more quickly in countries with functioning insurance systems than in those that lack such systems. However, this is still a new approach in developing countries and emerging economies. According to figures from Munich Re, the proportion of insured losses in these countries is well below 10 per cent, not counting the indirect economic consequences of (climate) disasters. In industrialised countries, by contrast, an estimated 50 per cent of losses are covered by relevant insurance.

Insurance , whether for health, unemployment or climate-related disasters, is a central feature of most wealthy countries; yet, institutional arrangements can differ significantly depending particularly on the degree of private-market responsibility. Private-market insurers underwrite the risks, and clients are asked to pay their full or close-to-full risk -based premium, albeit often with cross-subsidies from low-risk to high-risk clients that keep the premiums affordable (e.g., flood insurance in Germany, Norway and the U.K.). At the other end of the spectrum is public assistance, which can take the form of a catastrophe reserve fund financed from general taxes (e.g., in Austria) from which loss reimbursement can be legally binding (e.g., earthquake relief in Italy) or non-legally binding and ad hoc (e.g., in Hungary). In between these two ends of the spectrum are many public-private arrangements. Public institutions are active, for instance, in underwriting insurance (e.g., the US National Flood Insurance Program), providing subsidies and other support to private insurance programs

(e.g., the Austrian crop insurance system), or supporting commercial insurers with reinsurance arrangements (e.g., the French all-hazard insurance system).

The Climate Trends report also highlighted, “Insurance companies from Australia, Canada, Germany, Japan and the United States were the leading performers in terms of quality of disclosures, scoring between 50 per cent and 60 per cent. While, countries like India, Colombia, Kazakhstan, New Zealand, Russia, Saudi Arabia were amongst the worst performers scoring below 10 percent for the quality of their disclosures.” Thus, developing countries have a long way to go when it comes to securing insurance in regards to L&D.

Just ahead of COP27, the primary challenge would be to secure commitments to new and additional dedicated loss and damage financing. While finance mobilisation is the first key step, how the money will flow to those that need it most is also the area to focus on. Besides, we need to infer whether the existing delivery mechanisms are solving the purpose.

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