PART VII:
CLIMATE CHANGE AND THE LOSS AND DAMAGE DEBATE

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Framing the Loss and Damage Debate: A Thought Starter by the Loss and Damage in Vulnerable Countries Initiative*

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Abstract

Loss and damage refers to the negative effects of climate variability and climate change that people have not been able to cope with or adapt to. Loss and damage is already a significant – and in some places growing – consequence of an inadequate ability to adapt to changes in climate patterns across the world. Potential future loss and damage depends on emissions, vulnerability, and exposure variables of the impacted human (or natural) system. Today, loss and damage arising from climate change impacts is mostly a local problem, with changes in extreme weather events and slow-onset impacts. Future loss and damage is potentially of inconceivable magnitude – especially considering non-economic values and the interconnectivity leading to cascading, transnational effects. Addressing loss and damage is important because it will affect how society manages the negative impacts of climate change while pursuing other goals, such as resilient and low-emission development. The potential impacts of unmitigated anthropogenic climate change have significant implications for the current social organisation. Future loss and damage can be limited through the mitigation and adaptation choices that are made today. Mitigation ambitions will largely influence the degree to which loss and damage is averted, particularly from around 2030

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onwards. Until 2030, decisions that affect the level, scale and efficacy of adaptation will affect the ability of societies to adjust to manifestations of climate change such as alterations in climatic variability (e.g. shifts in seasonality of rainfall, heat waves, and the magnitude and frequency of extreme weather events). An implicit decision not to take ambitious mitigation action on a global scale, and/or decisions not to invest in and actively drive adaptation, could lead to loss and damage which exceeds the ability of all levels of society to manage climate-change-induced phenomena.

Loss and damage discussions under the United Nations Framework Convention on Climate Change (UNFCCC) have emerged as a distinct thematic area since the Cancun Agreements at the Sixteenth Conference of the Parties (COP16) in Mexico in 2010, and today decision-makers are grappling with both the current and future policy steps that need to be taken in order to understand and address loss and damage. Immediate steps will include pursuing the Doha Climate Gateway package – born in the final hours of the COP18 climate negotiations – to establish institutional arrangements to address loss and damage associated with the impacts of climate change. This article outlines initial thoughts by the Loss and Damage in Vulnerable Countries Initiative[1] to provide some conceptual and framing input into the loss and damage negotiations[2] under the UNFCCC. Given both the early stage of these discussions and the complexity of the issues of loss and damage, a spectrum of relevant scientific and policy perspectives and areas of expertise are presented to inform ongoing dialogue.

A. Introduction: What is Loss and Damage Associated with Climate Change Impacts?

The authors view the phrase "loss and damage associated with the adverse effects of climate change" from the Cancun (COP16) Decision as the starting point for any definition of the theme. Paragraph 25 of 1/CP.16 states the following: "Recognises the need to strengthen international cooperation and expertise in order to understand and reduce loss and damage associated with the adverse effects of climate change, including impacts related to extreme

1 See www.lossanddamage.net, last accessed 13 April 2013.

2 COP16 launched a work programme to develop its recommendation entitled "Approaches to Address Loss and Damage Associated with Climate Change Impacts" for consideration at COP18 in 2012 in Doha.

weather events and slow onset events." *Slow-onset events* are further clarified by a footnote therein as "including sea level rise, increasing temperatures, ocean acidification, glacial retreat and related impacts, salinisation, land and forest degradation, loss of biodiversity and desertification."

Loss and damage includes the full range of climate-change-related impacts from (changes in) extreme events to slow-onset processes and combinations thereof. For example, the *process* of glacial melting can lead to the harmful *event* of glacier lake outburst floods. Addressing loss and damage requires an understanding of the kinds of events and processes that are associated with the adverse impacts of climate change.[3] Loss and damage impacts fall along a continuum, ranging from *events* associated with variability around current climatic norms (e.g. weather-related natural hazards) to *processes* associated with anticipated changes in climatic norms in different parts of the world. Loss and damage encompasses both incurred loss and damage, as well as future loss and damage.

B. Working Definition of Loss and Damage

Although the impacts of climate change have been discussed for at least two decades since the UNFCCC's adoption in 1992 – and in other arenas for an even longer period, widely agreed-upon definitions of loss and damage related to those climate change impacts do not yet exist. This section aims to address that gap by offering a working definition that is meant to support discussion and further conceptual framing.

3 Although the terms *extreme weather events* (usually discrete temporal events) and *slow-onset climatic processes* (non-discrete continuous processes) are used throughout this article, the literature review also acknowledges that, for practitioners, this distinction is not as clear-cut. The climate stimuli above interact with each other in complex ways, and also interact with human systems in ways that drive loss and damage.

Working Definition of Loss and Damage

Loss and damage represents the actual and/or potential manifestations of climate impacts that negatively affect human and natural systems.

Damage could be seen as negative impacts that can be repaired or restored (such as windstorm damage to the roof of a building, or damage to a coastal mangrove forest from coastal surges which affect villages).

Loss could be characterised as negative impacts that cannot be repaired or restored (such as loss of geologic freshwater sources related to glacial melt or desertification, or loss of culture or heritage associated with potential population redistribution away from areas that become less habitable over time with climate change).

This broad working definition includes some further caveats:

- **Multiple temporal and spatial scales:** Loss and damage encapsulates historic and present (occurring and observed) manifestations of climate impacts as well as those that will occur in the future. Potential future loss and damage, by definition, relies on assumptions regarding parameters such as emissions, vulnerability, and exposure variables of the impacted human (or natural) system. Today, loss and damage arising from climate change impacts is mostly a local problem, with changes in extreme events and slow-onset impacts. Future loss and damage is potentially of inconceivable magnitude – especially considering non-economic values, and the interconnectivity leading to cascading, transnational effects. The concept of tipping points in climate, natural and societal systems – a moment where profound and potentially irreversible system changes occurs – is an important factor in weighing potential loss and damage.
- **Human and natural systems:** Loss and damage refers to the negative impacts of climate change on human systems, which are, in turn, often affected by impacts on natural systems. For example, sea-level rise and glacial melt result from climate change stimuli, and these shifts in natural systems in turn result in loss and damage to human systems such as habitable land or fresh water. Additionally, characteristics of human systems, such as development policies and poverty, affect the dependency of human systems on natural systems. Yet this connectedness does not change the fact that climate change impacts drive loss and damage, which occurs through the 'path' of natural system shifts and their effects on human systems.

- **Negative impacts:** Loss and damage is an undesirable phenomenon associated with climate change impacts, and does not include the impacts from managing climate change itself; the latter is discussed within the rubric of the UNFCCC under the policy forum of response measures.

C. Addressing Loss and Damage: Why it Matters Now

Due to the uncertainty and volatility associated with them, extreme weather events already impose loss and damage which is difficult to deal with by the most vulnerable communities. In the future, even greater loss and damage is expected from the impacts of changing norms of extreme weather, distinct slow-onset climatic processes, and interaction between the two.

Addressing loss and damage is important because it will affect how society manages the negative impacts of climate change while pursuing other goals, such as resilient and low-emission development. Geologic records indicate that profound shifts in earth systems and life forms have accompanied climatic changes in the past. In what has relatively recently come to be termed the *Anthropocene*,[4] human interaction with our natural environment has led to patterns of loss and damage that are relevant for society. The potential impacts of unmitigated anthropogenic climate change have significant implications for the current organisation of society. For example, sea-level rise could redefine the borders of some countries; desertification and glacial melt could shape the habitability of large areas of the world where people rely on arable land and fresh water for survival; and temperature change could affect plant fertility and biodiversity. Failure to address loss and damage in a timely way could leave humankind unprepared to manage and adjust to these negative climate change impacts.

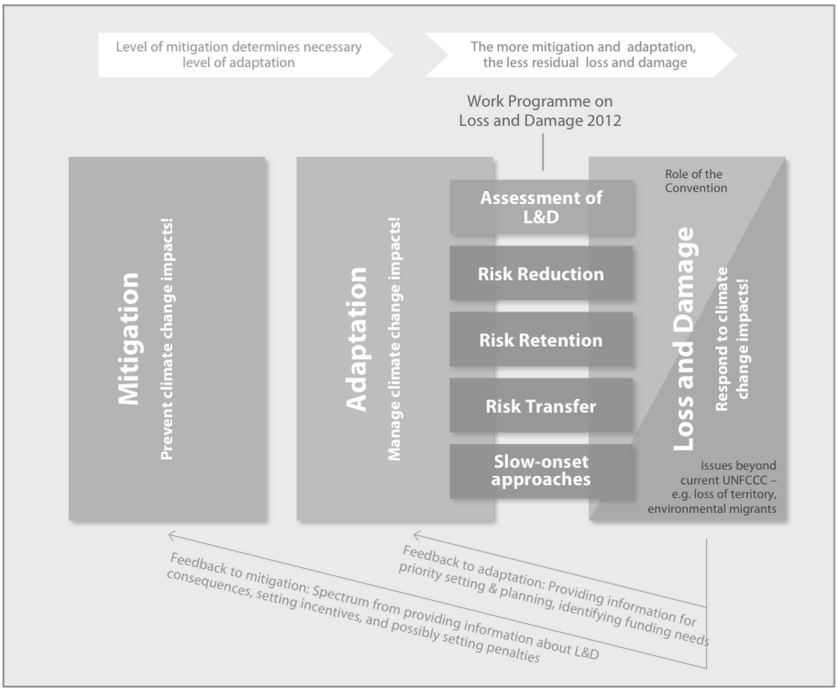
Success in addressing loss and damage would mean that the impacts of climate change could be somewhat contained or reduced while shifting gradually to new forms of organisation that will enable humans to continue living in balance with new states of climate in the future.

4 Popularised by the atmospheric chemist and Nobel laureate Paul Crutzen in 2000; see http://www.smithsonianmag.com/science-nature/What-is-the-Anthropocene-and-Are-We-in-It-183828201.html, last accessed 29 March 2013.

D. Decision Pathways and Consequences of Loss and Damage

Fully addressing loss and damage involves two components. Firstly, potential future loss and damage could be avoided through appropriate mitigation and adaptation activities. The second component entails tackling loss and damage when it occurs, both today and in the future, through a range of mechanisms. Figure 1 helps illustrate this idea.

Figure 1: Conceptual Framing for the Loss and Damage Debate



The frontiers of future loss and damage can be limited through the mitigation and adaptation choices that are made today. Climate change impacts are driven by the level of greenhouse gases (GHGs) in the atmosphere. Negative climate change impacts that lead to loss and damage also influence the ability of human systems to adapt to changes in climate. Present choices about mitigation and adaptation determine not only current, but also, and especially, future loss and damage potential – while acknowledging significant uncertainty in the decision-making context.

Mitigation ambitions will have the greatest influence on the degree to which loss and damage is avoided, particularly from around 2030 onwards. Until 2030, decisions that affect the level, scale and efficacy of adaptation will also affect the ability of societies to adjust to manifestations of climate change, including alterations in climatic variability such as shifts in seasonality of rainfall, heat waves, and the magnitude and frequency of extreme weather events. The most effective approach towards addressing loss and damage in the long term – in respect of avoiding future loss and damage, and minimising impacts in the short and medium terms – is to enhance both mitigation and adaptation measures.

An implicit decision not to take ambitious mitigation action on a global scale and/or make decisions not to invest in and actively drive adaptation could lead to loss and damage which exceeds the ability of all levels of society to manage climate-change-induced phenomena. The global community – or, more specifically, governments of more than 190 countries that are states parties to the UNFCCC – have agreed on the objective to limit the increase in global warming to below 2°C above pre-industrial levels.[5] Warming above this level can, therefore, be regarded as "dangerous climate change", which Article 2 of the UNFCCC expressly seeks to avoid. Should mitigation efforts fail to keep GHG concentrations below the equivalent of a '2°C world', the implications for loss and damage could be profound in terms of the availability of resources on which humankind depends, i.e. water, food, shelter, livelihoods, etc.

E. Loss and Damage as an Equity and Climate Justice Issue

As noted previously, the magnitude of 'residual' loss and damage – negative climate change impacts that remain and demand to be addressed – depends on how effective mitigation and adaptation efforts are. However, as a result of both historical and current GHG emissions, some degree of climate change impacts is already 'locked in'. Thus, even after the best possible mitigation and adaptation action, societies worldwide will still face some residual loss and damage.

5 The majority of UNFCCC states parties even endorsed a global temperature goal of below 1.5°C. Parties therefore agreed that the review decided in Cancun should periodically revisit the adequacy of the goal in light of achieving the UNFCCC's ultimate objective.

Addressing loss and damage is not only of common concern for humankind,[6] but also an issue of climate justice. The element of (in)justice has a spatial and temporal dimension. The potential spatial distribution of negative consequences related to loss and damage –particularly in respect of intangible elements which currently elude quantification, such as social, cultural and psychological loss and damage – will burden those countries which have historically contributed least to global GHG emissions and which have the most limited capacities to deal with the consequences of loss and damage. Without adequate action, communities in these countries will experience loss and damage with significant consequences – both nationally and globally. The temporal dimension of loss and damage lies in the fact that future generations could be left with significantly different and possibly constrained opportunities if we collectively fail to raise ambition around mitigation and adaptation today, and miss the opportunity to design approaches to address loss and damage in the long term.

F. What Needs to be Done Next to Address Loss and Damage and Move the Discussions Forward?

The impacts of loss and damage associated with climate-related stressors such as weather extremes and long-term climatological shifts can impair socio-economic development and reinforce cycles of poverty across the globe. Planning 'only' for the extreme climate-related events of today due to a static understanding of climate change impacts could leave countries without enough resources tomorrow. By contrast, planning for approaches to address loss and damage associated with both current climate variability and long-term shifts in climate patterns are needed. This holistic approach will help smooth development pathways as well as cushion the expected negative impacts of loss and damage in the future.

In today's world, there are challenges associated with creating strategies to address loss and damage. Faced with financial crises, political strife, population growth and a multitude of other challenges, decision-makers may be tempted to postpone considering approaches to address loss and damage related to climate change impacts. Sceptics (see text box) question the evidence on linkages between loss and damage (from disasters) and climate

6 Article 2, UNFCCC.

change, and implicitly suggest waiting to address the issue until more evidence is available.

However, in spite of these challenges, international and national policy forums as well as communities of policy, science and practice have many tools to help them begin to address loss and damage. Tapping into and jumpstarting action of these different communities and processes should be an essential next step for the UNFCCC process, as the discussion on loss and damage becomes more mature and probably more institutionalised.

Sceptics claim loss and damage related to extreme events cannot yet be attributed to climate change. Would it be prudent to postpone the discussion until more conclusive evidence is found?

The findings of the Intergovernmental Panel on Climate Change (IPCC)[7] have suggested uncertainty today about the relationship between climate change and long-term trends in normalised losses from weather-related extreme events. These findings have led some critics to focus on the current inability of science to definitively address the attribution of loss and damage from weather extremes to climate change; however, this critique is misleading. The IPCC findings reflect a lack of longer-term evidence and gaps in research rather than conclusive, positive evidence that there is no link between extreme weather events and loss and damage.

Furthermore, the inconclusive IPCC findings, related to the attribution of disaster losses to climate change, highlight the potential pitfalls of focusing only on extreme events to inform decision-making about the wider spectrum of policy that may be needed to address current and future negative climate change impacts. In time, science may develop to the state where the consequences of various manifestations of climate change may be attributable to anthropogenic activities. Yet, it is likely that, by the time science can conclusively establish those relationships, loss and damage related to those impacts will already have occurred. At that point, a number of the windows of opportunity for shaping policies to anticipate, reduce, plan for, and manage negative climate change impacts (ranging from extreme weather events to slow-onset changes like sea-level rise) will have closed.

Attribution is a difficult issue. Article 1 of the UNFCCC defines *climate* change as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and

7 IPCC (2012).

which is in addition to natural climate variability observed over comparable time periods."

Following this definition, approaches to address loss and damage only deal with the anthropogenic component of changing climate norms. However, extreme events are often the starting point for actions by governments and communities. It is often not feasible to conduct activities that distinguish the climate change component of an extreme event from existing weather variability. Therefore, the authors agree with the path of the UNFCCC work programme on approaches to address loss and damage. The first step is to engage in an option-based approach that includes risk reduction, risk retention and risk transfer, and which starts from existing experience – especially as regards managing loss and damage around existing climate variability – and, from that, derive the action necessary at UNFCCC level. At the same time, slow-onset processes – an area were experience is still sparse but growing – should always feature specifically in the discussion to avoid a 'status quo bias'.

Policy discussions on loss and damage are important today because a 'science and evidence only' approach will not sufficiently anticipate and inform society about decision pathways and consequences related to the negative impacts of climate change. Relying solely on questions of attribution truncates discussions and prevents full consideration of a range of options to address loss and damage today.

G. The COP18 Outcome on Loss and Damage

In the climate change negotiations at COP18 in Doha in December 2012, the Subsidiary Body for Implementation (SBI)[8] considered progress made on the implementation of the work programme on loss and damage,[9] and noted the achievements in respect of understanding loss and damage as well as the gaps in such understanding. In the final hours of COP18, governments reached a decision – incorporated as part of the Doha Climate Gateway package – to establish institutional arrangements to address loss and damage

8 The SBI supports the work of the COP and the CMP through the assessment and review of the effective implementation of the Convention and its Kyoto Protocol; see http://unfccc.int/bodies/body/6406.php, last accessed 11 May 2013.

9 In accordance with Decision 1/CP.16 at COP16 and Decision 7/CP.17 at COP17.

associated with the impacts of climate change.[10] The decision acknowledged that further work was needed to advance understanding on the topic, including how loss and damage affected vulnerable segments of the population and how the implementation of approaches could benefit vulnerable people,[11] and how to develop appropriate approaches like risk reduction, risk sharing and risk transfer tools.[12]

The key points of the decision on loss and damage are as follows:

- Paragraph 5: An explication of the role of the UNFCCC in an institutional arrangement
- Paragraph 9: To establish institutional arrangements to address loss and damage by COP19, and
- Paragraphs 7 and 10: To define elements of the work by COP19 to help define the functions and modalities of an institutional arrangement to address loss and damage.

Paragraph 5 discusses the UNFCCC's role in implementing approaches to address loss and damage associated with the adverse effects of climate change. The implications of paragraph 5 are that a decision at COP19 and further related decisions should consider the UNFCCC's role in designing options (functions and modalities). According to the Doha Gateway Decision text, the UNFCCC could enhance knowledge and understanding of comprehensive risk management approaches; strengthen dialogue, coordination, coherence, and synergies; and enhance action and financial, technological and capacity-building support.

Paragraph 7 issues an invitation to pursue additional work to enhance understanding. These areas are also referred to for work in 2013, and may be undertaken voluntarily in addition to the work mandated to the Secretariat. They are as follows:

10 Paragraph 9 of the Doha Draft Decision reads as follows: "[d]ecides to establish, at its nineteenth session, institutional arrangements, such as an international mechanism, including functions and modalities, elaborated in accordance with the role of the Convention as defined in paragraph 5 above, to address loss and damage associated with the impacts of climate change in developing countries that are particularly vulnerable to the adverse effects of climate change".

11 Decision 3/CP.18 (2012:para. 7iii).

12 (ibid.:para. 7iv).

- Enhancing understanding of slow-onset events, non-economic losses, impacts on particularly vulnerable groups, impacts on climate-resilient development, and impacts on human mobility
- Strengthening the collection and management of relevant data for assessing loss and damage
- Enhancing coordination, synergies and linkages among organisations to enable development and support of approaches to address loss and damage
- Strengthening regional collaboration, centres and networks
- Enhancing capacity-building at national and regional levels, and
- Strengthening institutional arrangements at national regional and international levels.

For COP19 scheduled for December 2013, paragraph 9 lays out a "decision to establish institutional arrangements, such as an international mechanism, including functions and modalities, elaborated in accordance with the role of the Convention to address loss and damage."

Thus, key work needs to involve exploring the functions and modalities of different options for institutional arrangements to address loss and damage. These ideas should consider the role of the UNFCCC, as elaborated in paragraph 5.

Paragraph 10 requests the Secretariat to carry out the following interim activities under the SBI Work Programme on Loss and Damage prior to COP19. The Secretariat is mandated to carry out three activities in 2013 (before COP19), namely –

- hold and prepare a report on an experts meeting to consider future needs, including capacity needs associated with possible approaches to address slow onset
- prepare a technical paper on non-economic losses, and
- prepare a technical paper on gaps in existing institutional arrangements in and outside the UNFCCC to address loss and damage, including slow onset.

The SBI Work Programme on Loss and Damage is requested –

- to consider the gaps analysis technical paper[13] in developing institutional arrangements, and

13 Decision 3/CP.18, para. 10(c).

- according to paragraph 7, to prepare a technical paper to suggest further activities by the June SBs in Bonn.

H. Future Potential Directions for Loss and Damage Policy

The UNFCCC mandate to pursue further work on loss and damage[14] and the decision to establish institutional arrangements suggest a longer-term commitment towards understanding and addressing the expected loss and damage related to climate change. While the UNFCCC is a key policy forum on these topics, other opportunities arise in the context of different policy processes that will mark major milestones in 2015, namely –

- target for the next international climate agreement (UNFCCC)
- renewal of the Hyogo Framework for Action on disaster risk reduction, and
- reports on achievements of the United Nations Millennium Development (and Sustainable Development) Goals.

Furthermore, embedding considerations of loss and damage in these and other processes will be vital in determining how those climate change consequences which cannot or cannot feasibly be dealt with at different levels are addressed beyond the 2015–2020 period. The ultimate objective for the loss and damage discussions will be to anchor a consolidated response to loss and damage in the post-2015 development and climate context in order to contribute to an accelerated paradigm change towards climate-resilient development.

Reference

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14 From 1/CP.16.