

**POLICY BRIEF - MARCH 2017**

## **CLIMATE CHANGE LOSS AND DAMAGE**

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At the 2015 international climate talks in Paris, loss and damage constituted one of the most prominent – and divisive – issues for negotiators. The idea of loss and damage reflects a growing recognition that not all climate change impacts can or will be avoided through reductions of greenhouse gas emissions (mitigation) or adjustments to climatic changes (adaptation): Some adverse impacts are already 'locked in' as a result of past, current and projected future emissions.

Loss and damage is an ambiguous and multifaceted concept that involves difficult legal, political, scientific, and ethical questions. Although it has been a formal agenda item in UN climate negotiations since 2010, there is no international agreement on what exactly loss and damage is, let alone how it should be tackled. Developing countries, especially those disproportionately affected by climate change, have highlighted different historic responsibilities and the need for compensatory measures. In contrast, developed countries have sought to limit discussion of liability and compensation, framing loss and damage as a matter of adaptation and/or risk reduction and insurance.

The Paris Agreement was the first international climate treaty to dedicate an entire article to loss and damage. It also fully institutionalised the 2013 Warsaw International Mechanism for Loss and Damage (WIM), the main vehicle under the United Nations Framework Convention on Climate Change (UNFCCC) to address the residual impacts of climate change. However, any discussion on liability and compensation for loss and damage remains a 'red line' for industrialised countries and, so far, the WIM has made only modest progress in terms of building concrete support mechanisms for vulnerable countries.

How have discussions on loss and damage evolved over time? What headway has been made during recent climate negotiations in Paris and Marrakech? And what are the future prospects for tackling the issue both within and outside the UNFCCC? To respond to these questions, this policy brief unpacks the competing interpretations that have been attached to the concept of loss and damage and explores alternative framings, opportunities for compromise and practical ways forward.

Understanding the potential scale of loss and damage and how and at what level (local, national, regional, or international) it might be addressed, is critical if affected communities are not to be left unsupported. As loss and damage now forms a key part of climate negotiations, it is also important for policymakers and other stakeholders to be familiar with the issues involved and to understand and anticipate what sort of action and obligations states may be under in this policy field.

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## KEY INSIGHTS

- **What is it?** There is growing recognition that mitigation and adaptation efforts are insufficient to prevent or alleviate all climate change impacts. The term loss and damage usually refers to these 'residual' impacts. Loss and damage can be the result of severe weather events or slow onset events such as sea level rise or desertification. Because the impact of these events is not always quantifiable, a distinction has been made between economic and non-economic loss and damage.
- **Definitions and framing:** There is no official definition of loss and damage. Instead a range of 'framings' have emerged, each suggesting a different policy response (Boyd et al 2016; Vanhala and Hestbaek 2016). Developing countries have pushed for loss and damage to be treated as an independent policy track within the UNFCCC, separate from adaptation. They have also highlighted the need for financial support and compensation and the historic responsibility of developed countries. The latter, however, have strongly opposed framing loss and damage in terms of liability and compensation.
- **The global politics of loss and damage:** Small Island Developing States (SIDS) have been actively promoting loss and damage since the very beginning of UNFCCC negotiations. However, it took more than a 15 years for the issue to gain traction within the UNFCCC and more than two decades before a dedicated mechanism on loss and damage was established – the 2013 Warsaw Mechanism on Loss and Damage (WIM). The 2015 Paris Agreement represents another major breakthrough. By dedicating an entire article to impacts associated with the adverse effects of climate change, the Agreement established loss and damage (at least implicitly) as a third pillar of the international climate regime. However, the accompanying Paris Decision explicitly states that this does not provide any basis for liability and compensation. The 2016 climate change negotiations in Marrakech conducted a first review of the WIM and adopted a new workplan for the WIM's Executive Committee. However, it delivered little in terms of substantive progress, including on the most urgent issue for vulnerable countries: where will finance for loss and damage come from?
- **Loss and damage in the (I)NDCs:** The fact that loss and damage has emerged as a major concern for state parties is also reflected in the national climate pledges – (Intended) Nationally Determined Contributions or (I)NDCs – made under the Paris Agreement. Over a quarter of the (I)NDCs make explicit reference to loss and damage, often emphasising that climate impacts are already underway. The (I)NDCs also clearly reflect the divide between developed countries and those most vulnerable: While 44% of the SIDS and 34% of the Least Developed Countries (LDCs) refer to loss and damage in their (I)NDCs, none of the industrialised countries do.
- **Climate risk management:** Going forward, comprehensive climate risk management (CRM) – combining sophisticated risk analysis with adaptation, risk reduction and risk transfer strategies – can provide a practical framework for action on loss and damage. Such a framework also needs to take into account curative measures (e.g. forced migration) to address unavoidable or unavoids impacts and transformative measures (e.g. voluntary resettlement or the development of alternative livelihoods) to address intolerable risks (Mechler and Schinko 2016). Without appropriate international support, however, comprehensive CRM will remain an empty policy prescription for most vulnerable countries.
- **The ethics of loss and damage:** The issue of loss and damage invites a range of ethical questions. Relatively accepted is the need for fair burden-sharing and technical and financial support (distributive justice). In contrast, corrective justice – i.e. compensation – will remain a taboo topic for many developed states. Litigation might provide a feasible avenue to achieve corrective justice despite the lack of international agreement. Yet, states have so far been reluctant to litigate against each other on climate change and private actors have had only mixed success in litigating against governments or major polluters.

- **Innovative finance mechanisms** could provide a viable way to mobilise predictable funding for loss and damage. The idea of a global carbon tax, a financial transaction tax, an international airline passenger levy or a fossil fuel extraction levy have received particular attention. On a global level, however, these mechanisms remain largely untested so far. Inevitably, they will also raise questions about how finance should be distributed.
- **National loss and damage measures:** In the absence of international solutions, many governments in vulnerable countries have started developing their own mechanisms for loss and damage. Bangladesh, for example, is already setting aside contingency funds for climate-related disasters and is now considering the development of a dedicated loss and damage mechanism. Other countries have developed regional risk pooling solutions – such as the Caribbean Catastrophe Risk Insurance Facility (CCRIF) – or national insurance mechanisms. Most importantly, these mechanisms need to be able to reach those most in need of support: poor households with a high dependency on natural resources for their livelihoods.



An abandoned house on the Marshall Islands. Source: ["Rising sea levels" \(CC BY 2.0\)](#) by [DFAT photo library](#)

## WHAT IS LOSS AND DAMAGE?

*Although loss and damage has emerged as a key issue of concern at international climate negotiations, Vanhala and Hestbaek (2016) show why it remains a complex, blurry and contested concept. Loss and damage is often understood to refer to adverse climate change impacts that are 'beyond adaptation'. However, there is a spectrum of views and positions on whether loss and damage presents an intolerable threat or a manageable risk, whether it should be treated as a distinct policy track, and – most of all – whether it should be framed as an issue of liability and compensation.*

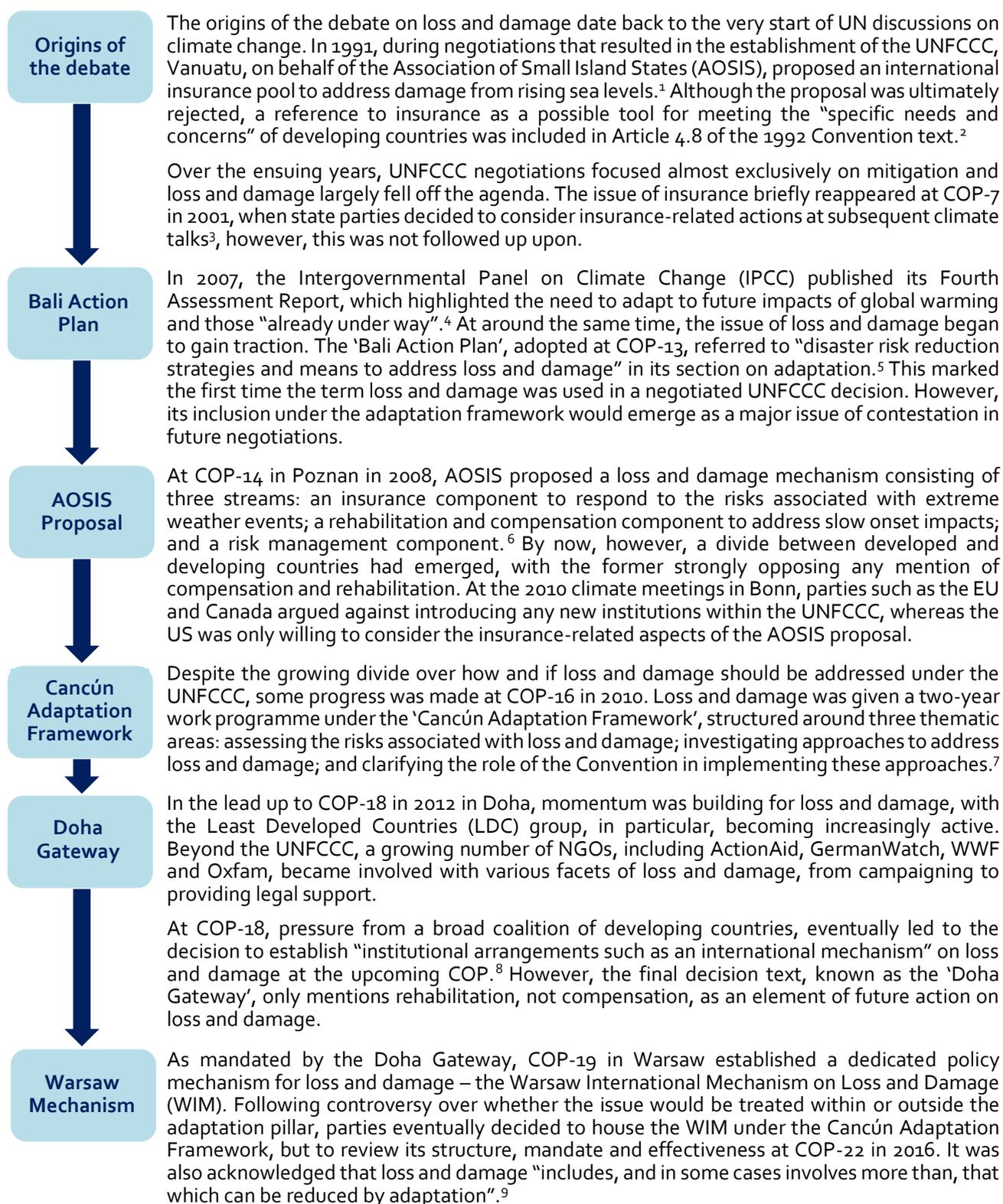
- **Defining loss and damage:** While there is no official definition, loss and damage usually refers to the 'residual effects' of climate change that cannot (or will not) be avoided through mitigation and adaptation. This includes impacts related to extreme weather events (such as flooding, droughts, or cyclones) and slow onset events (such as sea-level rise, desertification, or melting glaciers). Some of these impacts are purely economic in nature and easily quantifiable (such as damages to infrastructure), others cannot be expressed in monetary terms (such as loss of life, livelihood, biodiversity, cultural heritage or identity). Although the UNFCCC does not usually distinguish between the two terms, losses are generally understood to be irreversible while damages can be repaired or alleviated. Loss and damage is an issue of particular importance to developing countries as their geographical location, climatic conditions, and limited financial and institutional capacities make them more susceptible to climate change impacts. Small Island Developing States (SIDS), in particular, have pushed the agenda.
- **Addressing loss and damage:** Most of the controversy revolves around how loss and damage can and should be addressed. Some parties have long tried to subsume loss and damage under the adaptation framework, framing it as something that can be avoided or at least substantially alleviated through risk management or insurance mechanisms. In contrast, some developing countries have treated loss and damage as an issue of liability, implying that those states that have historically emitted most greenhouse gases have a moral and legal obligation to compensate poor and highly impacted states. They have also pushed for loss and damage to be treated as an independent pillar of the international climate regime, alongside mitigation and adaptation.
- **Framing loss and damage:** Given the lack of a generally accepted definition, a range of 'framings' on loss and damage have emerged, each with different legal, financial and ethical implications. Drawing on expert interviews and in-depth literature reviews, Boyd et al. (2016) have identified four distinct framings ranging from loss and damage as (1) essentially equivalent to adaptation, (2) a case for comprehensive risk management, (3) something beyond adaptation, to (4) an existential and irreversible threat. Even though not all of these framings are mutually exclusive, each suggests a different response to loss and damage: The closer to (1), the more prevention is emphasised and the more existing institutions for addressing mitigation and adaptation are seen as adequate to deal with of loss and damage. The closer to (4), the more emphasis is placed on international liability and compensation, irreversibility of ex-post loss, and the necessity of new institutional arrangements separate from adaptation and mitigation.

Is it impossible, maybe even counter-productive, to establish a precise definition of 'loss and damage'? In earlier international discussions, the ambiguity of the term might indeed have proven constructive. Tracing the use of different framings in UNFCCC negotiations over time, Vanhala & Hestbaek (2016) show how two competing framings – one calling for liability and compensation and the other emphasising risk management and insurance – were replaced by the broader term 'loss and damage'. The emergence of this overarching master frame allowed parties to attach different meanings to loss and damage and ultimately facilitated the adoption of the Warsaw Mechanism on Loss and Damage (WIM) in 2013. However, the underlying conflict between the two original framings has never been resolved and, going forward, the lack of an agreed definition of loss and damage could be seen as a hindrance to progress on the issue (Boyd et al. 2016).

# HISTORY OF LOSS AND DAMAGE

## 1991 – 2013: Loss and Damage Gains Momentum

*Loss and damage is not a new issue. Developing states and civil society groups have long advocated the need to address impacts of climate change that are beyond adaptation. However, international negotiations on the issue have historically progressed very slowly.*



## THE WARSAW INTERNATIONAL MECHANISM FOR LOSS AND DAMAGE (WIM)

Established at COP-19 in 2013, the Warsaw International Mechanism for Loss and Damage (WIM) is the main institution under the UNFCCC to “address loss and damage associated with the impacts of climate change, including extreme and slow onset events, in developing countries that are particularly vulnerable to the adverse impacts of climate change.”<sup>10</sup> The WIM has three key functions: (1) enhancing knowledge and understanding loss and damage and how to address it; (2) strengthen dialogue among relevant stakeholders; and (3) enhancing action and support on loss and damage, including in the areas of finance, technology and capacity building.

The implementation of these functions is led by an Executive Committee, under the guidance of the COP. At COP-20 in 2014, state parties approved an initial two-year work plan for the WIM, which set out nine ‘action areas’: (1) particularly vulnerable countries, (2) risk management, (3) slow onset events, (4) non-economic loss and damage, (5) resilience, (6) migration and displacement, (7) finance, (8) collaboration with other bodies, and (9) development of a five-year rolling work plan.<sup>11</sup> The implementation of these ‘action areas’, however, was substantially delayed due to disagreements over the composition of the Executive Committee.<sup>12</sup>

The Paris Agreement ensured the continuation of the WIM, and in 2016, at COP-22 in Marrakech, the framework for its five-year rolling workplan was approved. The plan, which is still in development, includes five indicative ‘strategic workstreams’ on (1) slow onset events, (2) non-economic losses, (3) comprehensive risk management approaches to build long-term resilience, (4) migration, and (5) finance-related issues.<sup>13</sup>

The WIM provides a unique platform to enhance understanding and awareness of loss and damage and promote collaboration and communication among key stakeholders. It also offers a potential avenue to find new ways of framing loss and damage in a less contentious manner. However, for vulnerable countries, the real yardstick of success will be whether the WIM delivers on its third key function – offering concrete support and mobilising resources for the most vulnerable.



Desertification in Mauritania. Source: "[Sahara 1 Aoujeft o](#)" (CC BY-NC 2.0) by [John Spooner](#)

## Loss and Damage at Paris: COP-21

Going into COP-21 in Paris in 2015, controversy over loss and damage was palpable. The negotiating text included one option from developing countries for liability and compensation for loss and damage, and another option from the US-led Umbrella Group to delete all references to loss and damage. In the final agreement, developing countries achieved their call for loss and damage to be treated as a distinct article (Article 8). However, the possibility of liability and compensation was explicitly ruled out in the accompanying decision.

- **A third pillar:** Article 8 gives breakthrough recognition to the “importance of averting, minimizing and addressing loss and damage.”<sup>14</sup> This has been widely celebrated as enshrining loss and damage as a distinct ‘third pillar’ under the UNFCCC, alongside mitigation and adaptation. Article 8 was indeed a major negotiation success for developing countries and it implies an acknowledgement by all state parties that loss and damage cannot simply be subsumed under adaptation.
- **The red line – liability and compensation:** Paragraph 52 of the Paris Decision text explicitly states that Article 8 “does not involve or provide a basis for any liability or compensation”.<sup>15</sup> This had been a key demand of developed countries, in particular the US: In the run-up to COP-21, then Secretary of State John Kerry had declared that framing loss and damage as an issue of compensation would “kill the deal”.<sup>16</sup> Developing countries only accepted this caveat in return for the inclusion of an aspirational target of limiting global temperature increases to 1.5°C above pre-industrial levels in the Paris Agreement. Although the language used in Paragraph 52 is unambiguous, its inclusion in the Paris Decision – not the Agreement – means that it does not have the same binding effect and it could theoretically be challenged in future negotiations. In addition, Paragraph 52 does not exclude compensation in a context beyond Article 8 (e.g. litigation in a national court).
- **Continuation of the WIM:** Finally, state parties also negotiated the continuation of the WIM and tasked its Executive Committee with creating a taskforce on displacement and a clearinghouse on risk transfer. The Paris Agreement states that the WIM may be “further enhanced and strengthened”, providing a dynamic avenue for the mechanism to evolve beyond its current role. It also identifies a number of potential areas of ‘cooperation and support’ that parties may engage in. The list partially overlaps with the action areas under the initial two-year work plan for the WIM and includes: (1) early warning systems, (2) emergency preparedness, (3) slow onset events, (4) irreversible and permanent loss and damage, (5) risk assessment and management, (6) insurance, (7) non-economic losses, and (8) resilience.



COP-21 Protest. Source: "[COP21 loss and damage climate protest4](#)" (CC BY-NC-ND 2.0) by [Friends of the Earth](#)

## **TASKFORCE ON DISPLACEMENT**

Issues of displacement and human migration due to climate change are likely to feature strongly in future climate talks. Increasingly, migration is not just considered within the context of adaptation but also as a source of and/or a response to loss and damage. This was reflected in the COP-22 decision to task the WIM Executive Committee with setting up a taskforce on displacement.

COP-21, by its decision 1/CP.21, requested the WIM Executive Committee “to establish, according to its procedures and mandate, a task force to complement, draw upon the work of and involve, as appropriate, existing bodies and expert groups under the Convention including the Adaptation Committee and the Least Developed Countries Expert Group, as well as relevant organizations and expert bodies outside the Convention, to develop recommendations for integrated approaches to avert, minimize and address displacement related to the adverse impacts of climate change”.<sup>17</sup>

Implementation of the decision began with a technical meeting, organised by the International Organisation for Migration (IOM) in July 2016, which brought together members of the WIM Executive Committee and a number of experts on human mobility and climate change.<sup>18</sup> In September 2016, at the fourth meeting of the WIM Executive Committee, the terms of reference for the taskforce were adopted and it was decided that the taskforce is to deliver recommendations by COP-24 in 2018.<sup>19</sup>

Considering human mobility in the context of loss and damage is a complicated and sensitive task. As with loss and damage itself, there are different ways to frame the issue, each implying a certain policy response. Mayer (2016) has identified three such framings: (1) migration as a way of reducing loss and damage, (2) migration as a source of loss and damage for the migrants, and (3) migration as a source of loss and damage for host communities. Finding a careful balance between these framings will be key given the politicisation of the issue, in particular with regard to possible future obligations to provide asylum to climate “refugees” (not currently an official category under the UN Refugee Convention).

## **CLEARINGHOUSE ON RISK TRANSFER**

COP-21 also tasked the WIM Executive Committee with setting up a clearinghouse for risk transfer – an online platform that will present accessible, demand-driven information on insurance and other risk transfers strategies. Vulnerable countries often struggle to access appropriate and cost-effective mechanisms to manage and reduce climate change related risks. Insurance can be a viable tool to alleviate the impact of sudden, high-impact events. However, it is only of limited use in the context of slow onset impacts or extreme weather events that occur with high frequency.

COP-21, by its decision 1/CP.21, requested the WIM Executive Committee “to establish a clearinghouse for risk transfer that serves as a repository for information on insurance and risk transfer, in order to facilitate the efforts of Parties to develop and implement comprehensive risk management strategies”.<sup>20</sup>

In February 2016, an informal ‘champions group’ of Executive Committee members was set up to work on a roadmap for the clearinghouse. The group developed a draft concept paper, which suggests that the three main objectives of the clearinghouse should be to enhance understanding of insurance and risk transfer, improve policy coherence, and enhance action and support on risk transfer solutions. The type of information the clearinghouse will offer include (1) information on how to set up climate risk insurance schemes, (2) an overview of existing insurance arrangements, (3) information on how climate risk insurance can address rehabilitation and permanent losses and damages, (4) risk information, (5) a list of institutions working on the topic, and (6) types of funding.<sup>21</sup>

## Loss and Damage at Marrakech: COP-22

*The recent COP-22 in Marrakech – hailed beforehand as the "COP of action"<sup>22</sup> – was expected to take the debate on loss and damage to a new level. A first review of the WIM was concluded and a five-year cycle for further review was established. State parties also adopted the WIM Executive Committee's indicative five-year workplan. Overall, however, negotiation outcomes were procedural rather than substantive and little progress was made on the most contentious question: Where will finance for loss and damage come from?*

- **First review of the WIM and adoption of the indicative workplan:** COP-22 was due to conduct the first review of the "structure, mandate and effectiveness" of the WIM. However, progress was slow during the first week of negotiations. While countries such as the EU, Switzerland, Australia and New Zealand were pushing for the review to be completed in Marrakech, the G77 advocated for a delayed but more in-depth assessment in 2017. Conducting a robust review of the WIM was indeed a challenging task, given that it had only been fully operational for little more than a year. Hence, the draft decision that was finally adopted (FCCC/SB/2016/L.9) focused mainly on future procedures: It was decided that the next review will take place in 2019, with further reviews to happen no more than five years apart. These reviews will not just gauge the progress made on the Executive Committee's workplan but also consider the "long-term vision that guides ways in which the Warsaw International Mechanism may be enhanced and strengthened."<sup>23</sup> In a less controversial decision (FCCC/SB/2016/L.8) state parties welcomed and approved the WIM Executive Committee's report and its indicative framework of the next five-year rolling workplan.<sup>24</sup>
- **No concrete outcomes on loss and damage finance:** At Marrakech, finance for loss and damage was a much discussed topic, however, this did not result in any concrete commitments. Although there were several calls to provide the WIM with more resources, this issue was essentially postponed: A technical paper will be prepared by the secretariat as an input to the upcoming review of the WIM in 2019 to elaborate "the sources of financial support" (draft decision FCCC/SB/2016/L.9). In addition, draft decision FCCC/SB/2016/L.8 highlights the need for the Executive Committee to include in its five-year workplan a strategic workstream dedicated to enhancing action and support, including finance, technology and capacity building. At the time of negotiations, the indicative five-year workplan contained only a placeholder for the finance-related workstream.



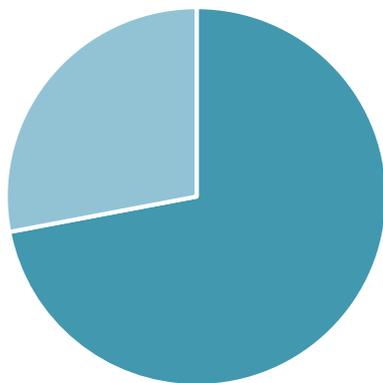
UN Secretary-General Ban Ki-moon addresses delegates at COP-22 in Marrakech. Source: "[COP22 UN climate change conference](#)" (CC BY-NC-ND 2.0) by [BC Gov Photos](#)

## WHERE IS LOSS AND DAMAGE IN THE (I)NDCS?

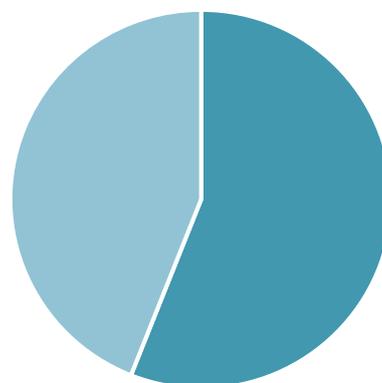
Unlike its predecessor, the Kyoto Protocol, the Paris Agreement does not stipulate individual mitigation targets for specific countries. Instead, state parties submit their own climate pledges – (Intended) Nationally Determined Contributions or (I)NDCs<sup>1</sup> – on the basis of national circumstances and capabilities. This 'bottom-up' approach has made the target-setting process more inclusive, with both developed and developing countries committing to make ambitious efforts to combat climate change for the first time. Although the (I)NDCs focus primarily on mitigation and adaptation measures, many developing countries also refer to loss and damage as a priority concern, often highlighting that they are already suffering from the adverse impacts of climate change.

- **Loss and damage in the (I)NDCs:** We undertook original research on mentions of loss and damage in the (I)NDCs. Of the 162 (I)NDCs that were reviewed, over a quarter (28%) make reference to loss and damage. In addition, a number of states, although not *explicitly* referring to loss and damage, acknowledge that climate change will almost certainly have harmful effects, some of which might be irreversible. Unsurprisingly, no Annex I country refers to loss and damage. In fact, most (I)NDCs of industrialised countries cover almost exclusively the mitigation aspects of climate change without referring to adaptation needs and the potential consequences of climate change. A notable exception is Switzerland which notes that “[c]limate change has already left many marks in Switzerland” and that “[h]otter than usual summers have already led to higher mortalities.” Small Island Developing States (SIDS), which historically have promoted loss and damage most actively, are also most likely to refer to the concept in their (I)NDCs (44%). Within the Least Developed Country (LDC) group, 34% make a direct reference to loss and damage.

28% of the submitted (I)NDCs make explicit reference to loss and damage



44% of (I)NDCs by Small Island Developing States (SIDS) refer to loss and damage



- **Loss and damage as a separate level of response?** The discussion about whether loss and damage should be addressed as part of the adaptation framework or as a separate level of response is also reflected in the (I)NDCs. Most (I)NDCs do not explicitly call for it to be viewed as a separate policy track, in fact, loss and damage is most often referred to in the section on adaptation. For example, Kyrgyzstan's (I)NDC lists as one of its adaptation targets “[t]o prevent the climate change related damage and losses” and Sri Lanka's (I)NDC states that “[p]roper adaptation can prevent losses and damages.” Only Nauru and Niue make a strong case for loss and damage to be considered as a third level of response, “an element that should be distinct from adaptation” (Niue). Other states make this case less explicitly by including loss and damage as a distinct section, separate from adaptation.

<sup>1</sup> Initially submitted as “Intended Nationally Determined Contributions” (INDCs), national pledges become “Nationally Determined Contributions” (NDCs) for countries that have ratified the Paris Agreement. As of February 2016, 163 countries have submitted their (I)NDCs, 162 of which were reviewed for this policy brief.

- **Loss and damage is already occurring:** The (I)NDCs do not just refer to future loss and damage. They also provide examples of impacts that have already occurred, usually resulting from extreme weather events. A number of countries include a monetary assessment of these damages. For instance, Antigua and Barbuda estimates that *"between 1995 and 2010, six hurricanes resulted in economic losses and damages on the twin island state totaling US \$335 million"*, Moldova notes that *"the total damage and losses produced by [the] 2010 floods were estimated at approximately US\$4.2 million"*, and Colombia claims to have suffered from damages and losses as a result of the "La Niña" phenomenon amounting to USD 6 billion. However, it is not always clear what kind of impacts have been counted as loss and damage and how total costs have been calculated. Where it is made more explicit, loss and damage refers mainly to economic losses and/or damages to infrastructure. However, a number of (I)NDCs also refer to the loss of lives and livelihoods or the loss of biodiversity.
- **Tackling loss and damage:** Suggestions on how to address loss and damage are equally ambiguous. Three countries (China, Nauru and Sri Lanka) refer to the WIM in their (I)NDCs. Many of the most affected countries emphasise that their own contribution to global emissions is minimal and highlight the need for international assistance – but in most cases this is not made with a direct reference to loss and damage. Only three countries explicitly talk about liability and compensation: Suriname's (I)NDC lists *"[c]ompensation for loss and damage"* as one of four *"critical elements necessary for international collaboration"* while Venezuela's (I)NDC suggests that losses and damages caused by climate change should be calculated and added to the *"ecological debt"* of *"irresponsible"* industrialised nations. Cuba's (I)NDC states that *"access to finance and technology on preferential terms"* is of particular importance for SIDS and LDCs not just to meet adaptation challenges but also to address the *"coverage of loss and damage."* The need for insurance is also mentioned in a number of (I)NDCs though it is not always clear if reference is made to domestic or international mechanisms.



An aerial view of hurricane devastation in Port de Paix, Haiti. Source: "[o80908-N-9774H-506](#)" (CC BY-SA 2.0) by [Marion Doss](#)

## LOSS AND DAMAGE GOING FORWARD

### Comprehensive Climate Risk Management

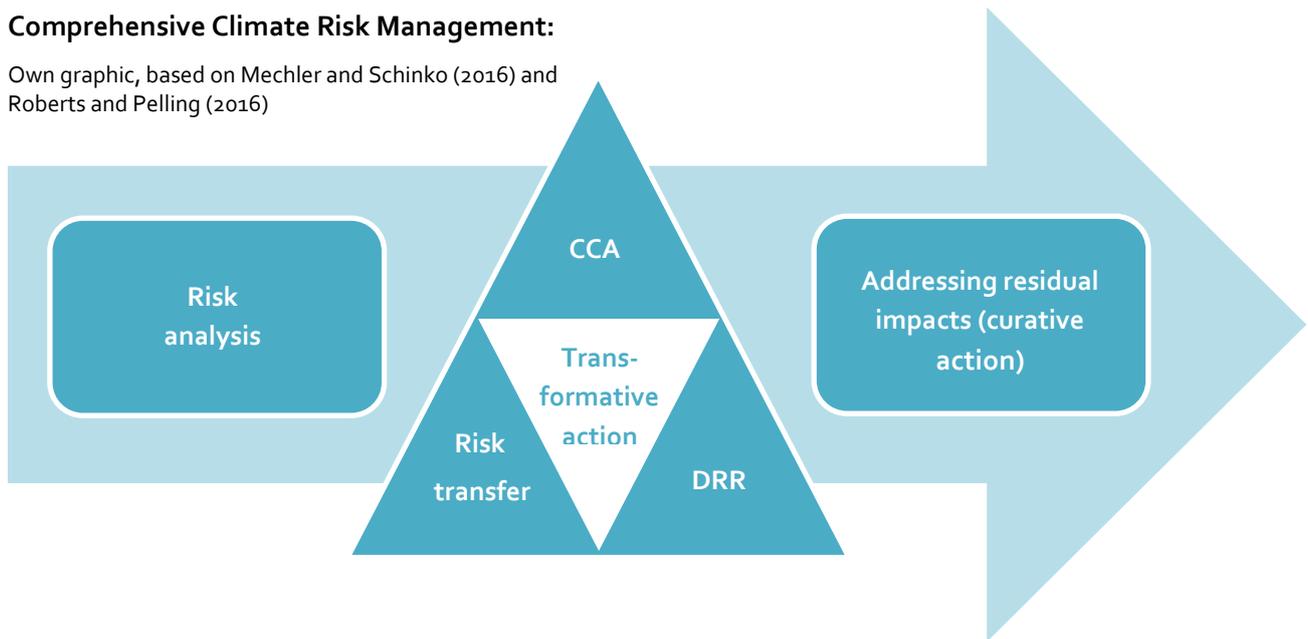
*Although the controversy surrounding liability and compensation has received much attention, it forms just one aspect of the debate on loss and damage. New advances in risk science might help working towards consensus by focusing on the practical aspects of implementing loss and damage mechanisms on the ground. Sophisticated Climate Risk Management (CRM) combines different mechanisms to addressing climate change impacts, taking into account risk preferences as well as options for international support. Rather than the invention of completely new tools, CRM encourages the integration of existing, complementary approaches such as Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR).*

The notion of loss and damage as 'beyond adaptation' suggests that there is no space for preventive measures. However, most policy makers and practitioners recognise that only some of the impacts referred to as loss and damage are indeed beyond the physical limits of adaptation. Others can be avoided through available measures, or they *could* be avoided if there was adequate financial and technical support and sufficient political will. A distinction has therefore been made between avoided, unavoided and unavoidable climate change impacts (Verheyen 2012). Framing loss and damage in this way opens up policy space for comprehensive CRM approaches that combine CCA, DRR and risk transfer mechanisms, as well as curative and transformative measures to address residual risks (Mechler and Schinko 2016, Roberts and Pelling 2016).

- **Risk analysis:** Climate risk science has developed analytical tools to segregate risks according to their potential severity and frequency, allowing policy makers to develop more sophisticated responses to loss and damage. Risk analysis does not just take into account the occurrence of hazards, such as extreme weather events, but also the exposure of a particular country or community, its vulnerability, adaptive capacities and socially-determined risk preferences. Mechler and Schinko (2016) classify possible risk levels as acceptable, tolerable or intolerable. If risks are acceptable, no further measures are required beyond those already implemented. Tolerable risks can be addressed through measures such as CCA or DRR, however, capacity restraints will result in gaps between what is socially desirable and what is technically and financially feasible, highlighting the necessity of additional 'curative' measures to absorb remaining impacts. As risks become increasingly intolerable, more far-reaching 'transformative' measures may become necessary, such as voluntary migration or the development of new livelihoods.
- **Linking CCA and DRR:** CCA refers to adjustments in "physical, ecological and human systems" in response to climate related extreme weather events or slow onset impacts.<sup>25</sup> DRR, in contrast, focuses primarily on minimising risks from sudden-onset hazards, be they climate-induced or not. Consequently, the two approaches operate on slightly different time scales, with CCA addressing more long-term impacts and DRR focusing on impacts that are felt rather in the short-term. Despite these differences, CCA and DRR basically work towards the same objective: reducing the vulnerability of communities and building resilience. Both are therefore "essential elements of climate risk management and sustainable development"<sup>26</sup> and there is a strong case for further integrating the two approaches to minimise the risk of loss and damage. On the operational level, however, CCA and DRR communities have only recently started to cooperate in a more systematic manner. This is due to a variety of reasons, including the fact that CCA and DRR have different funding streams and policy frameworks.
- **Risk transfer:** Tools such as insurance, micro-insurance and risk pooling, can offer effective protection for households against some of the risks associated with loss and damage. They also provide opportunities for private sector engagement. A notable example is the Munich Climate Insurance Initiative, established in 2005 by Munich Re, which brings together actors from the insurance industry, policy makers, researchers and NGOs to foster innovation in insurance and risk transfer in the context of climate change.<sup>27</sup> However, the application of insurance solutions is focused largely on addressing extreme weather events that occur infrequently. When it comes to slow onset events, such as sea level rise, or disasters that occur very frequently, insurance is of limited use. In addition, subsidies might be necessary to make premiums affordable for vulnerable households. Results UK (2016) has published a list of recommendations in terms of ensuring climate risk insurance works for the poor.<sup>28</sup>

## Comprehensive Climate Risk Management:

Own graphic, based on Mechler and Schinko (2016) and Roberts and Pelling (2016)



### ETHICAL CONSIDERATIONS

An excessive focus on 'technocratic' policy solutions such as risk reduction and risk transfer can obscure questions of justice and responsibility. Mace and Schaeffer (2012) posit that highlighting the links between loss and damage and existing disaster risk reduction institutions, is a deliberate strategy by developed states to "[sever] the causal link between emissions and impacts" and "[place] responsibility on countries to find ways to reduce their own vulnerabilities, using their own resources." Comprehensive CRM, therefore, can only provide a basis for compromise if it incorporates principles of both distributive and corrective justice.

A distributive justice approach recognises the need for international financial and technical support for CCA, DRR, risk transfer and other activities in vulnerable countries. This is reflected in the Paris Agreement which states that parties should "enhance understanding, action and support" on different loss and damage related action areas. There are already a number of burden-sharing mechanisms, such as the Adaptation Fund, the Green Climate Fund or the Global Facility for Disaster Reduction and Recovery (GFDRR). While the notion of distributive justice calls for a fair distribution of responsibilities it is not directly connected to liability.

Beyond burden-sharing, however, there is a need for further remedies to address residual impacts, some of which are already 'locked-in' by historical emissions. Given the unequal distribution of responsibilities, there is a strong case for corrective justice, which seeks to rectify wrongdoings through compensation. The application of corrective justice in the context of climate change, however, is not just contentious, it also poses scientific challenges as it requires attribution of climate impacts to specific anthropogenic drivers. In addition, it raises the question of who exactly should be liable: Is loss and damage a matter of collective national responsibility of developed states or should only major polluters be held responsible?

## Legal Avenues to Address Loss and Damage

*Paragraph 52 of the Paris Decision shut the door to liability and compensation on the basis of Article 8 of the Paris Agreement. Nevertheless, there are still a number of possible legal avenues to pursue corrective justice and hold governments or major polluters accountable. These legal cases may, however have to rely on solid attribution science which can link extreme weather events and slow onset impacts to specific anthropogenic climate drivers (though creative lawyers are finding ways around this need at times).*

- **Interstate litigation:** Under international customary law, the main norms applicable to addressing climate change impacts, are the 'no harm' rule, which obligates states to prevent and reduce the risk of environmental harm to other states, and the 'polluter pays' principle. Both norms are reflected in the 1992 Rio Declaration on Environment and Development, which asserts that states have a "responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States" (Principle 2) and reaffirms the "approach that the polluter should, in principle, bear the cost of pollution" (Principle 16).<sup>29</sup> Theoretically, these principles provide a basis for claiming compensation for loss and damage. However, there are no precedents for this kind of international interstate climate change litigation and there are significant challenges involved in proving negligence on the part of the offending state and a direct connection between specific loss and damage and emissions of the offending state.
- **Beyond interstate litigation:** Even though states have hesitated to litigate against each other on climate change related issues, recent years have seen a growing number of individual citizens and civil society organisations taking up legal action against their governments and major corporates. A prominent example is the *Urgenda* case, in which plaintiffs successfully argued that, by failing to sufficiently reduce greenhouse gas (GHG) emissions, the Dutch government had committed the tort of negligence against its own citizens.<sup>30</sup> In another recent case, which feeds more directly into the discussion on loss and damage, a Peruvian farmer filed a claim for compensation from German energy company RWE, arguing that RWE is partly responsible for climate change-induced glacial retreat threatening his home town. However, the regional court in Essen, Germany, dismissed the case in December 2016, arguing that legally no direct causal link could be established between RWE's emissions and the melting glaciers in Peru.<sup>31</sup> Another unsuccessful legal case was launched by a Kiribati national in 2013 seeking to be recognised as a climate refugee in New Zealand.<sup>32</sup> Whether successful or not, litigation can help raise awareness of loss and damage and put additional pressure on governments and major polluters to act on climate change. It can also shape new framings of loss and damage as a matter of intergenerational justice, public trust protection, or human rights. For example, in 2015, the Commission on Human Rights of the Philippines launched a landmark inquiry into the role of 47 'carbon majors' in human rights violations resulting from the impacts of climate change.<sup>33</sup>
- **Significant caveats:** In the absence of international solutions on loss and damage, litigation can be a practical means to seek justice. However, it does not appear to be a sustainable solution in the short and medium term for developing countries and vulnerable communities to obtain the support and finances they need. Establishing liability will necessarily involve very complex questions of attribution. Although climate science is now able to link anthropogenic climate change to some extreme weather events<sup>34</sup>, it is still extremely complex to make concrete causal connections, not least as risks from climate-related events are shaped by many factors, including climate variability, exposure of people and assets, as well as socio-economic vulnerability. The success of climate change litigation will also vary depending on jurisdiction. For example, in Australian common law, a claim can be based on increasing the risk of harm rather than actual harm, and also contribution to harm rather than sole harm. This would make it easier to litigate on climate change damages where there are multiple causal factors and it can be difficult to isolate anthropogenic from natural causes.

## INNOVATE FINANCE

Recent work on innovative finance mechanisms suggest that there may be more acceptable and, potentially, more effective ways to gather funds for loss and damage. For example, a global fossil fuel extraction levy to be imposed on major oil, gas and coal producers has been proposed by the Climate Justice Program (CJP).<sup>35</sup> The money, as suggested by CJP, could be directly channelled towards a loss and damage mechanism to support the poorest and most vulnerable communities. An advantage of this concept is its direct link to corrective justice as it targets those most responsible for GHG emissions. It could also provide additional incentives to phase out fossil fuels (although this would, in turn, reduce the income stream for the loss and damage mechanism). Similar suggestions include an international airline passenger levy, a bunker fuels levy, a financial transaction tax or a global carbon tax. Climate or catastrophe bonds could help raise additional funds for particular investments.

While some of these mechanisms have already been implemented on the national or regional level, establishing true global coverage of, for example, carbon pricing instruments, is likely to encounter significant political resistance. If not carefully designed, innovative finance mechanisms can also have adverse effects: For instance, many SIDS and LDCs are heavily reliant on air travel and their economies could be disproportionately affected by an international airline passenger levy. In the near future, the establishment of a single, stable source of finance for loss and damage is unlikely, highlighting the “the need to combine and layer different sources of funding and utilizing insurance mechanisms and bonds to accomplish the goals of buffering losses in the most vulnerable nations” (Durand et al. 2016).



Calving front of the Upsala Glacier (Argentina). Source: "[Glaciers and Sea Level Rise](#)" (CC BY 2.0) by [NASA Goddard Photo and Video](#)

## Existing Mechanisms to Address Loss and Damage

*Loss and damage is already a reality in many vulnerable countries, disproportionately affecting poor agriculture-dependent households and communities. In the absence of international action and support, some governments are putting resources towards loss and damage on the national level. In addition, there is a growing number of regional- and local-level initiatives that – although not always explicitly designed as loss and damage solutions – can help minimise or alleviate the risks associated with climate change impacts.*

- **National action:** Bangladesh, one of the most disaster-prone countries in the world, has been especially active in developing national-level strategies to address the adverse impacts of climate change. Under the Bangladesh Climate Change and Strategy and Action Plan (BCCSAP), the country has established two funds to finance a variety of climate change related activities. Over the past eight years, Bangladesh has put more than half a billion USD into these funds, with a substantial share of the money reserved for emergency disaster relief.<sup>36</sup> Bangladesh is now considering using these reserve funds to establish a dedicated national mechanism on loss and damage, emphasising that international funding will be needed in addition to national financing.<sup>37</sup> Other vulnerable countries have also adopted strategies to better deal with climate change impacts, for example by further integrating DRR and CCA on the national level. Given the increasingly intolerable risks associated with rising sea levels, some low-lying island states have started to make concrete plans for relocating its population. Kiribati, for example, began negotiations with New Zealand in 2008 to relocate some of its population there<sup>38</sup>, and in 2012 and 2014 purchased land in Fiji as a potential resettlement location for displaced Kiribatians.<sup>39 40</sup>
- **Intergovernmental action:** There is a growing number of regional-level mechanisms to respond to climate change induced disasters. The Pacific has recently launched the first integrated regional framework to address disaster and climate change related risks – the Framework for Resilient Development in the Pacific (FRDP) – which seeks to build resilience in a way that also contributes to sustainable development.<sup>41</sup> In addition, a number of regional risk pooling mechanisms have been established to allow countries to respond more effectively in the wake of a climatic event, for instance, the Caribbean Catastrophe Risk Insurance Facility (CCRIF), the African Risk Capacity (ARC) or the Pacific Catastrophe Risk Insurance Pilot. Intergovernmental action outside the UNFCCC, however, is not necessarily regional. An example is the G7 'InsuResilience' initiative, launched in 2015, which seeks to increase the number of particularly vulnerable people holding climate risk insurance from 100 to 500 million by 2020.<sup>42</sup> Another state-led initiative, focusing specifically on disaster- and climate change induced migration, is the Platform on Disaster Displacement, established in 2016 by Germany and Bangladesh.<sup>43</sup>
- **Local action:** Ultimately, loss and damage mechanisms will only be successful if they are able to reach and support the most vulnerable communities. Natural disasters and climate-induced extreme weather events have their greatest impact at the local level and disproportionately affect rural households dependent on agriculture and other natural resources for their livelihoods. A number of countries have developed or are experimenting with subsidised agricultural insurance programmes to respond to the risks associated with the effects of climate change. There are also examples of community-level initiatives such as the R4 Rural Resilience Initiative, launched by the World Food Programme in partnership with Oxfam America, which promotes a comprehensive risk management approach by combining strategies such as improved resource management, insurance, livelihoods diversification and microcredit, and savings.<sup>44</sup>

## CONCLUSION

The discussion on loss and damage is here to stay: the urgency of the issue for developing states will rise in inverse proportion to how much action is undertaken to mitigate and adapt to climate change. It is difficult to estimate the exact amount of funds needed to address loss and damage but it is clear that even under ambitious mitigation and adaptation scenarios, the financial costs associated with loss and damage will be substantial. Hope (2009) suggests that even in a best case scenario – i.e. after considerable mitigation and adaptation efforts – the mean cumulative global costs of impacts will be USD 275 trillion over the period 2000–2200. In addition, climate change will result in irreversible losses that are hard to quantify economically, such as loss of life, culture or biodiversity.

Given the complexity and contested nature of loss and damage, there is not one single solution. Instead, a range of established and innovative approaches and financial mechanisms exist that can be combined and implemented on different levels both within and outside of the UNFCCC. Loss and damage will continue to play a prominent role at upcoming climate negotiations, including COP-23 which will be held in Bonn in November 2017 under the presidency of Fiji. As loss and damage is now a firmly established agenda item, future COPs could provide more clarity on what loss and damage means (and what it does not). It is unclear, however, if greater clarity will promote or inhibit concrete action on loss and damage.

For researchers, a wide array of avenues exist for future analysis on loss and damage. Policy-oriented research will be influenced by signals from the Executive Committee of the WIM, other bodies under the UNFCCC, national governments and civil society organisations. Innovative financing and interrogation of existing financing tools could be useful for a more practical understanding of possible pathways of dealing with loss and damage. Legal and political perspectives are also needed on the issue of climate related migration and displacement and how it can or should be dealt with. Finally, the debate over the use and ethics of attribution science is one of several topic areas that would benefit from interdisciplinary analysis to ensure that research feeds into feasible policy recommendations from legal, political, social and scientific perspectives.



Drought in Mongolia. Source: "[Mongolia climate change and adaptation](#)" (CC BY-NC-ND 2.0) by [Asian Development Bank](#)

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## SUMMARY TABLE: REFERENCES TO LOSS AND DAMAGE IN THE (I)NDCS

Country	Reference to Loss and Damage in (Intended) Nationally Determined Contributions
Antigua and Barbuda	"Over 15 years, between 1995 and 2010, six hurricanes resulted in economic <b>losses and damages</b> on the twin island state totaling US \$335 million." / "Physical adaptation measures will not always be enough to prevent significant <b>loss and damage</b> to the infrastructure and economy of Antigua and Barbuda.(...) A <b>loss and damage</b> mechanism is integral to building resilience to climate change in Antigua and Barbuda. By 2030, an affordable insurance scheme will be available for farmers, fishers, and residential and business owners to cope with losses resulting from climate variability."
Barbados	"Sea level rise, storm surges and inundation, in addition to the increased frequency in tropical storms, will present direct challenges to the coastal zone, in particular to the tourism sector in terms of potential <b>loss and damage</b> to key infrastructure."
Cambodia	"An assessment indicated that the <b>damage and loss</b> caused by the 2013 floods was 356 million US\$, of which 153 million US\$ was the estimated value of the destruction of physical assets (damage) in the affected areas, and 203 million US\$ the estimated losses in production and economic flows." / "The main CCCSP strategic objectives are to: (...) Promote adaptive social protection and participatory approaches in reducing <b>loss and damage</b> due to climate change"
China	"The Warsaw International Mechanism on <b>Loss and Damage</b> shall also be strengthened."
Colombia	"The "La Niña" phenomenon, which took place in 2010-2011 evidenced the impacts derived from climate change and variability on the country's development. <b>Damage and losses</b> were estimated in USD\$ 6 billion (...)" / "(...) taking into account the <b>damages and losses</b> caused by La Niña phenomena in 2010-2011." / "Mitigation actions reduce the risk of <b>loss and damage</b> as well as future adaption costs (...)"
Cook Islands	"Note that <b>Loss and Damage</b> is not factored into the policy and planning processes outlined above."
Costa Rica	"The adaptation goals proposed in this National Contribution try to confront the challenge of recurrent <b>loss and damage</b> due to extreme hydro-meteorological events." / "Record on <b>loss and damage</b> due to extreme weather event show that public infrastructure is the sector that is most affected (...)"
Côte d'Ivoire	" <b>Pertes et dommages:</b> Pertes humaines (...) Pertes liées à l'érosion côtière (...) Pertes productions agricoles (...) Pertes en infrastructures (habitations, routes, etc.)."
Cuba	"Un área de particular interés para los países en desarrollo, sobre todo los menos adelantados y los pequeños Estados insulares, es el acceso a financiamiento y tecnologías en condiciones preferenciales para enfrentar los enormes retos de la adaptación al cambio climático, así como la cobertura de las <b>pérdidas y daños.</b> "
Dominica	"Dominica continues to suffer considerable economic, social and environmental <b>loss and damage</b> due to impacts from climate change." / "Dominica cannot afford to continue financing the <b>loss and damage</b> resulting from global climate change."
Dominican Republic	" <b>Loss and Damage:</b> As a small island developing state, and being located in an area of intense hurricane activity, the Dominican Republic is threatened constantly by hydro-meteorological events such as tropical storms, droughts and hurricanes affecting human settlements and productive activities. Damage associated with hydro-meteorological events over the years has left a trail of effects demanded beyond considerable efforts. In 1998, Hurricane Georges caused <b>losses and damages</b> equivalent to 14% of Gross Domestic Product (GDP) in 1997. The tropical storms Olga and Noel in 2007 forced the government to adjust its priorities and the economy, causing <b>losses and damages</b> of 1.2% of GDP and 5.3% of the national budget. Additionally, the damage caused by many other disasters including floods, landslides and droughts have not been quantified. The impacts of some extreme events have meant economic losses in the order of USD 9,470 million, and the most affected sectors have been: agriculture, transportation, energy, housing, education, industry and trade, sanitation, drainage, health and environment. These statistics refer to major events that cause disasters, but smaller and recurrent events can cause major damage to property, livelihoods and crops. However, certain gaps in the historical record of medium and small events persist, and the amount is estimated to be equal to half of the <b>loss and damage</b> of the biggest events."
El Salvador	"Estos altos niveles de exposición física ante fenómenos climatológicos, en poblaciones altamente vulnerables repercuten en el ámbito económico y social generando <b>daños y pérdidas</b> que se elevan a varios cientos de millones de dólares, estos recursos desplazan a la inversión pública y privada y reducen el stock de capital en detrimento del crecimiento económico territorial y generan un fuerte impacto en la esperanza y calidad de vida de la población." / " <b>Daños y Pérdidas:</b> Los impactos y afectación generados por fenómenos asociados al cambio climático en el país son tan severos que comprometen la viabilidad inmediata y futura del desarrollo del país, el Fondo Monetario Internacional, en el informe de su Misión de Consulta al país, marzo de 2013, concluyó que 'Tras la crisis de 2008 – 2009, la economía salvadoreña ha crecido lentamente como resultado de la baja inversión doméstica y, el impacto de choques

	<i>climáticos'. En este sentido, la CPND prioriza el apoyo a las políticas fiscales, de protección social, sectoriales y territoriales. El Salvador, por tanto, considera necesario el desarrollo de mecanismos para enfrentar <b>pérdidas y daños</b> recurrentes por el cambio climático, de acuerdo a lo previsto para esta materia dentro del Plan Nacional de Cambio Climático y adoptando el marco de trabajo que en esta materia se establezca en los acuerdos bajo la Convención."/ "No se presente en el país en los próximos años un evento climático extremo asociado al cambio climático que provoque <b>perdidas y daños</b> y obligue a orientar recursos financieros para la atención del mismo y que a la vez, limiten la disponibilidad de recursos propios para apoyar las CPND."/ "Las <b>perdidas y daños</b> experimentados en los últimos años resaltan, además, la necesidad en invertir en una infraestructura resiliente a los impactos del cambio climático, para salvar vidas y proteger el capital de la nación."</i>
Equatorial Guinea	<i>"Grado de vulnerabilidad, <b>pérdidas y daños</b>: (...) Se considera como sectores más vulnerables a los efectos del cambio climático: la agricultura, pesca, energía, vivienda, educación, saneamiento, drenajes, salud y medio ambiente. Las pérdidas derivadas de estos daños a pesar de ser muy considerables, actualmente son difíciles de cuantificar económicamente a falta de registros estadísticos."</i>
Fiji	<i>"Proposed Way Forward, Actions and Time bound Indicators: (...) Develop a comprehensive assessment framework, including adoption of the <b>damage and loss</b> assessment methodology by 2015"</i>
Gambia	<i>"The planning, development and implementation of an effective disaster preparedness and response strategy in support of climate change adaptation and <b>loss and damage</b> is a critical activity to develop and implement. Critical gaps and constraints exist in terms of human capacity, low awareness of the economic benefits of disaster risk reduction, low resilience of infrastructure and facilities, inadequate slum upgrade, lack of appropriate building codes and land use planning, and inadequate funding to enable the utilization of disaster preparedness and risk reduction in support of climate change adaptation and future <b>loss and damage</b>."</i>
Guatemala	<i>"Las <b>pérdidas y daños</b> acumulados ascienden a más de US\$ 3,5 mil millones de dólares, distribuidos principalmente en los sectores afectados de infraestructura, agricultura y salud."</i>
Haiti	<i>"Il en résulte que la priorité d'Haïti est l'adaptation aux changements climatiques et la réponse aux <b>pertes et dommages</b>." / "Haïti entend (...) répondre aux <b>pertes et dommages</b> causés par les phénomènes climatiques extrêmes (...)" / "Pour la mise en œuvre de sa CPDN, le pays entend définir au cours de la période 2016-2020: (...) Son Plan de réponse aux <b>pertes et dommages</b> climatiques"</i>
Honduras	<i>"<b>Pérdidas y daños</b>: (...) El impacto devastador del Huracán y Tormenta Tropical Mitch en el mes de octubre de 1998, implicó la pérdida de más de 14,000 vidas, más de medio millón de damnificados, la pérdida de 20 años de inversiones en materia de infraestructura vial e hidráulica, 3,800 millones de dólares (equivalente al 70% del PIB de ese mismo año) y la caída del aparato productivo del país, sumiendo a la Republica de Honduras en una crisis cuyas secuelas persisten hasta la actualidad. Pese a que los fenómenos extremos como Mitch y el Huracán Fifi en el año 1974, constituyen los referentes de la vulnerabilidad física, ambiental, económica y social del país, no debe perderse de vista la elevada incidencia de fenómenos recurrentes que, año con año, provocan la pérdida de vidas, viviendas, infraestructura y medios de producción. Estos fenómenos recurrentes afectan de forma dramática el desarrollo del país y crean eternos círculos de "inversión-reconstrucción" que se constituyen en un permanente desgaste de la economía estatal y de la iniciativa privada. El cambio climático tiende a exacerbar la incidencia, magnitud y frecuencia de eventos hidrometeorológicos extremos y sus efectos adversos, provocando mayores presiones sobre los sistemas naturales y humanos existentes. Honduras enfrenta los efectos adversos del Cambio Climático que se han manifestado en la forma de una mayor incidencia de huracanes, lluvias torrenciales e inundaciones, sequías olas de calor, ascenso de la temperatura, disminución de precipitación, agotamiento del agua, pérdida de productividad de la tierra y de cultivos, incremento del nivel del mar, aumento de enfermedades tropicales. Asimismo, la mayor frecuencia y magnitud de los fenómenos de la variabilidad climática como "El Niño" y "La Niña", aspectos relevantes que se anticipa, impactarán con mayor intensidad en las próximas décadas. (...)"</i>
India	<i>"The link between Adaptation, Disaster Risk Reduction and <b>Loss and Damage</b> is important. (...) There is an urgent need for finance to undertake activities for early warning system, disaster risk reduction, <b>loss and damage</b> and Capacity building at all levels." / "The report also projects the economic <b>damage and losses</b> in India from climate change to be around 1.8% of its GDP annually by 2050."</i>
Jamaica	<i>"Jamaica will also focus in the UNFCCC negotiations on approaches to address <b>loss and damage</b> associated with the adverse effects of climate change, including impacts related to extreme weather events and slow onset events, as where there are constraints and limitations to adaptation, then other means of addressing economic <b>loss and damage</b> from climate change impacts will have to be found." / "These events resulted in combined <b>loss and damage</b> amounting to approximately J\$128.54 billion."</i>
Kiribati	<i>"<b>Damage to and loss of homes and critical infrastructure</b>"</i>
Kyrgyzstan	<i>"Adaptation target: To prevent the climate change related <b>damage and losses</b> in the country."</i>

Madagascar	"During the last five years, <b>losses and damages</b> associated with floods and cyclone events are estimated about 470-940 million of US dollar per year."
Malawi	"The total cost of <b>loss and damage</b> that the Government of Malawi incurred during these severe floods was estimated to be US\$335 million."
Mozambique	"[Gaps and Barriers:] Weak capacity to determine the cost of the <b>losses and damages</b> caused by the impacts and of the measures to adapt to climate change and few research and investigation actions addressing climate change (...)"
Myanmar	"The estimated total cost of <b>loss and damage</b> due to Nargis to the national economy is estimated to be over USD4bn." / "This results in significant <b>loss and damage</b> , hampering the process of national development." / "Myanmar's population recurrently suffers from <b>loss of life and damage</b> to infrastructure as a result of climate related disasters." / "(...) Myanmar, after cyclone Nargis in 2008, has consistently invested in improving national capacity to respond to and recover from such disasters by reconstructing in a sustainable manner which will mitigate future <b>loss and damage</b> ."
Nauru	"The issue of <b>loss and damage</b> is important to Nauru, particularly when considering the current low level of mitigation ambition internationally and the science is telling us that there will be limits to adaptation. For our very survival it is fundamental that <b>loss and damage</b> must be considered as a separate and distinct element from adaptation in the 2015 COP21 agreement." / " <b>Loss and Damage</b> from Climate Change: <b>Loss and damage</b> is a significant issue for Nauru. The inclusion of <b>loss and damage</b> in the INDC is twofold. First, its purpose is to highlight the significance of the issue for Nauru and second, to present our views on <b>loss and damage</b> in the 2015 climate agreement. The prospect for <b>loss and damage</b> associated with climate change for Nauru and SIDS are real. The IPCC findings in both the Fourth and Fifth Assessment Report from Working Group II show that there are substantial limits and barriers to adaptation. In Warsaw, Parties also acknowledged that loss and damage associated with the adverse effects of climate change involves more than that which can be reduced by adaptation. The climate change projection for Nauru is expected to increase sea surface temperatures, rise in sea levels, ocean acidification and changes in ocean currents. These will in turn, impact on the whole of Nauru. (...) Nauru calls for <b>loss and damage</b> to be included as a separate element of the 2015 agreement, one that is separate and distinct from adaptation. <b>Loss and damage</b> must be addressed in a robust, consistent and sustained manner. This can only be accomplished through a <b>loss and damage</b> mechanism that is anchored in the 2015 agreement. Anchoring the mechanism in the 2015 agreement will ensure that it is permanent. Defining the relationship between mitigation, adaptation and <b>loss and damage</b> needs to be considered and reflected in the 2015 agreement, including a clearly defined relationship between mitigation ambition, adaptation costs as well as <b>loss and damage</b> , particularly when mitigation ambitions are currently grossly inadequate and adaptation measures are not sufficient to address climate impacts. There is also an urgent need for technical work to be undertaken and should include an assessment of impacts and risks at different levels of CO <sub>2</sub> concentration and warming, including 1.5 °C, especially the risks of ocean acidification, global and regional sea level rise and irreversible changes in the physical, ecological and human systems, including for specific regions and key sectors and systems. Observations and projections relevant to local and regional circumstances should cover exposure and vulnerability to climate change, the resulting impacts, adaptation options and <b>loss and damage</b> . Nauru acknowledges that there is on-going work under the Warsaw International Mechanism on <b>Loss and Damage</b> , including a 2016 Review, and expects that the results of this on-going work be integrated into the mechanism that is anchored in the 2015 agreement. Immediate and adequate financial, technical and capacity building support for <b>loss and damage</b> is needed and to be provided on a timely basis for Nauru and other SIDS to address <b>loss and damage</b> . It is beyond our current national means to address <b>loss and damage</b> from climate change and financial flows from developed countries for addressing <b>loss and damage</b> in Nauru and other vulnerable developing countries should be new and additional to financing for those for mitigation and adaptation."
Nepal	"Nepal will study and understand further <b>loss and damage</b> associated with climate change impacts with the support from scientific and academic communities." / "Conduct research and studies on <b>loss and damage</b> associated with climate change impacts, and develop and implement measures to reduce climate vulnerabilities"
Niger	" <b>Losses and damage</b> : Average losses due to drought: more than US \$70 million; Damage to the economy from floods for the 2000's: US \$18 million."
Niue	"Niue believes that <b>loss and damage</b> must be addressed in a sustainable and consistent manner to highlight its significance and relevance in climate change, especially in developing countries. It is beyond Niue's national measures to address <b>loss and damage</b> alone from climate change. Building on the Alliance of Small Island States (AOSIS) position, Niue is calling for <b>loss and damage</b> to be included as a separate element of the 2015 Paris Agreement, an element that should be distinct from adaptation."

Philippines	"The discussion on adaptation and <b>loss-and-damage</b> is intended to provide part of the critical context of the mitigation proposal in this INDC." / "Assumptions Used: <b>Loss-and-Damages</b> from climate change and extreme events will not require substantial diversion of resources for rehabilitation and reconstruction thereby affecting development targets as well as mitigation commitments under this INDC." / " <b>Loss and Damage</b> : The basic foundation for prioritizing adaptation measures is to ensure that <b>loss and damage</b> from climate change and extreme events are minimized to ensure achievement of national development targets through building capacities and enhancing resilience to avoid and mitigate losses in a sustainable manner. The Philippine INDC assumes that <b>Loss-and-Damages</b> from climate change and extreme events will not require diversion of substantial resources for rehabilitation and reconstruction thereby adversely affecting the country's capacity to meet national development targets as well as mitigation commitments under this INDC." / "Technology transfers and innovations are needed to support adaptation and minimization of <b>loss-and-damages</b> as well as enhanced capacity for mitigation."
Republic of Moldova	"The 2007 and 2012 droughts alone caused losses estimated at about US\$ 1.0 and 0.4 billion, respectively. The 2008 floods cost the country about US\$120 million, and the total <b>damage and losses</b> produced by 2010 floods were estimated at approximately US\$42 million."
Saint Lucia	"In addition, Saint Lucia like other SIDS, faces the prospect of irreversible and permanent <b>loss and damage</b> resulting from human-induced climate change, despite best efforts at adaptation and mitigation."
Saint Vincent and the Grenadines	"With climate-related events already causing <b>damage and loss</b> , these projections have dire implications for agriculture, water availability, and the protection of public and tourism infrastructure if no meaningful action is taken."
Sierra Leone	"The INDC of Sierra Leone has three components, one for Mitigation, one related to Adaptation and the third for <b>Loss and Damage</b> ." / "The <b>Loss and Damage</b> Component of the INDC: These priority actions include: 1. Adopt the current Disaster risks reduction Policy into a comprehensive Climate Policy; 2. Establish the enabling legislative framework to implement the DMD policy and action plan; 3. Establish and/or strengthen the high-level National DMD Council (NCCC), in the Office of the Vice President; and 4. Establish a National DMD agency as the primary national government agency for climate change response. Jointly implemented, these actions constitute a comprehensive package that facilitates preparedness and response to disasters and effective INDC implementation."
South Sudan	"South Sudan is vulnerable to climate change and associated socio-economic <b>losses and damages</b> due to the dependence of its population on climate-sensitive natural resources for their livelihoods."
Sri Lanka	" <b>Loss and Damage</b> - In order to contribute to the Warsaw International Mechanism for <b>Loss and Damage</b> a local mechanism will be developed." / "Sri Lanka puts forward fair and ambitious mitigation strategies through, while facing the challenges of progressively increasing adaptation demands, and climate induced <b>loss and damages</b> ." / "Proper adaptation can prevent <b>losses and damages</b> while creating a conducive environment for low carbon development." / " <b>Loss and Damage</b> : Sri Lanka is largely affected with climate induced extreme weather events and slow onset disasters. During these situations Sri Lankan government bears the responsibility of taking care of disaster victims, providing food and other necessary relief services and other supporting to recover early. <b>Losses and damages</b> (L&D) due to these disaster events are heavy creating a huge pressure on the economy and public spending. According to the National Disaster Relief Centre the total relief expenditure for the period of 2007-2011 was SLR1786 million (US\$129.4million) and that money borne by the government funds. Nevertheless, this calculation has been done with-out considering of infrastructure and other physical damages. According to the 'An Integrated post flood Assessment-May 2010', Disaster Management Centre, Ministry of Disaster Management Sri Lanka, carried out after the floods in the Western and Southern provinces, the total flood <b>damages and losses</b> amounted over US\$ 38.46 million. This means the Government of Sri Lanka is currently handling the <b>losses and damages</b> unconditionally. Sri Lanka intends to join hands to develop a fully-fledged Warsaw International Mechanism on <b>Loss and Damage</b> to address the <b>loss and damage</b> issues and in parallel develop an appropriate local mechanism." / "This will ensure higher degree of deviation from the BAU emission projections while resilience that will reduce <b>loss and damage</b> ."
Suriname	"Suriname has already suffered extensive <b>losses and damages</b> from the effects of climate change." / "Based on current trends, climate departure for Suriname will take place in 2028 at which point the country will experience, inevitably, huge <b>losses and irreversible damage</b> . (...) Thus far, Suriname has had to deal with the <b>losses and damages</b> , undertake adaptation interventions and build climate resilience mainly from its small national budget." / " In this regard, there are four critical elements necessary for international collaboration: (...) (ii) Compensation for <b>loss and damage</b> "

<b>Tonga</b>	<i>"Irreversible <b>loss and damage</b> from extreme weather events and coastal erosions are critical areas whereby national response are limited influencing the designed national contributions through reducing emission and also on creative smart resilience investments."</i>
<b>Uruguay</b>	<i>"Development and implementation of national, regional and sector-specific participatory climate change and variability adaptation plans, and incorporation of monitoring and reporting systems on adaptation and <b>loss and damage</b>." / "Articulate and develop new integrated climate services and information systems, for continuous monitoring, risk mapping and <b>loss and damage</b> evaluation, by strengthening academic, monitoring and observation institutions, such as The Uruguayan Institute of Meteorology and the National Water Management Service."</i>
<b>Vanuatu</b>	<i>"The National Climate Change and Disaster Risk Reduction Policy identifies five key adaptation strategic priorities and associated actions to further enhance the national adaptation efforts and build resilience across sectors which include the need for (...) <b>Loss and damage</b> and Ecosystem based approaches." / "These strategic priorities from 2015 to 2020 include the need for: (...) <b>Loss and damage</b>."</i>
<b>Venezuela</b>	<i>"A pesar de que Venezuela no es un país con responsabilidades históricas en Cambio Climático, ha emprendido una ambiciosa serie de acciones financiadas nacionalmente con gran incidencia en reparación de <b>pérdidas y daños</b>, adaptación y mitigación." / "Esta misión significa una respuesta a <b>pérdidas y daños</b> por lluvias extremas para cerca de 150 mil personas afectadas y una reducción de vulnerabilidad frente a los efectos de Cambio Climático para más de 12 millones de personas." / "Calcular los costos derivados de las <b>pérdidas y daños</b> resultantes de situaciones extremas climáticas, incluyendo seguros y reaseguros para sectores sensibles específicos (como la agricultura), las cuales deberán sumarse a la deuda ecológica de los países industrializados."</i>
<b>Vietnam</b>	<i>"Viet Nam is facing <b>losses and damages</b>, which are beyond its resilience and capacity, even after thorough application of climate change adaptation measures and mitigation of GHG emissions. Sharing and managing risks of <b>loss and damage</b> must be considered at both the national and international levels."</i>
<b>Yemen</b>	<i>"However, due to the current situation in Yemen, further studies will be conducted in the future to determine the projected <b>loss and damage</b> of climate induced disaster risks scenarios as well as various adaptation and mitigation measures which require international support to accelerate the implementation of Yemen's INDC." / "Shore coral reefs, already prone to damage by the intense wave activity of storms in the Red Sea and Gulf of Aden, may see an increase in intense wave activity and plausibly more frequent and severe storms which have drastic <b>loss and damage</b> costs. Cyclone Chapala is an example of climate induced disaster risks scenarios which Yemen is projected to face more frequently over the coming decades where international support will be required to help the country manage and reduce potential <b>loss and damages</b> involved besides building the necessary mechanisms for long-term and sustainable recovery processes." / "The flooding resulted in estimated <b>damage and losses</b> of \$1.64 billion." / "Cyclone Chapala of this year is another recent example of climate induced disaster risks scenarios which have significant <b>loss and damage</b> costs in Yemen." / "The involved loss and damage of such extreme weather events are significant but further studies will be conducted in the future to determine the estimated costs associated with the climate induced disaster risks scenarios." / "Therefore, more studies will be conducted under the NAP process which will provide up-to-date analysis with economy-wide adaptation needs including on costing of investments covering the various medium- and long-term adaptation measures, as well as <b>loss and damage</b> associated with climate induced disaster risk scenarios." / "Additional support will also be needed on issues relating to Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) as well as Ecosystem-Based Adaptation (EBA) including on sustainable management of natural resource, and disaster risk management (DRM) to help the country reduce potential <b>loss and damages</b> associated with climate induced disaster risk scenarios such as the already occurring extreme hydrological weather events including more frequent and severe droughts and floods."</i>
<b>Zambia</b>	<i>"Co-benefits [of the development of an insurance market against climate change induced risks related to agriculture and infrastructure]: Reduced <b>loss and damage</b>."</i>