



Tackling the Limits to Adaptation:

An International Framework to
Address 'Loss And Damage' from
Climate Change Impacts

NOVEMBER 2012

act:onaid





"[O]ur best estimate is that the A1FI¹ emissions scenario would lead to a warming of 4°C relative to pre-industrial during the 2070s." ²

"In ... a 4°C world, the limits for human adaptation are likely to be exceeded in many parts of the world, while the limits for adaptation for natural systems would largely be exceeded throughout the world." ³

"In some cases, such as farming in sub-Saharan Africa, a +4°C warming could result in the collapse of systems or require transformational adaptation out of systems, as we understand them today."⁴

1. A1FI is an IPCC (Intergovernmental Panel on Climate Change) emissions scenario assuming a future world of very rapid economic growth, global population that peaks in mid-century and declines thereafter, and the rapid introduction of new and more efficient technologies, with an emphasis on fossil-intensive (FI) technologies. <http://www.ipcc.ch/ipccreports/tar/wg1/029.htm#storya1>
2. Betts R A et al. 2011. When could global warming reach 4°C? *Philosophical Transactions of the Royal Society A* 369: 67-84.
3. Warren R 2011. The role of interactions in a world implementing adaptation and mitigation solutions to climate change. *Philosophical Transactions of the Royal Society A* 369: 217-241.
4. New M et al. 2011. Four degrees and beyond: the potential for a global temperature increase of four degrees and its implications. *Philosophical Transactions of the Royal Society A* 369: 6-19.

Contents

Acronyms	4
Executive summary	5
1. Introduction	8
2. Loss and damage: historical and scientific contexts	10
Adaptation and its limits	13
The impossibility of adapting to slow-onset disasters	14
3. Loss and damage: legal and moral contexts	15
General obligations under international law	15
Legal obligations under the UNFCCC	16
Obligation to provide compensation	16
4. A comprehensive framework to address loss and damage	18
Institutional support for the prevention of loss and damage	21
Institutional leadership and global co-ordination	21
International Mechanism on Compensation and Rehabilitation	21
5. Recommendations for COP18 and beyond	24
Design stages for the International Mechanism	24
Questions for the work programme	24
Further work to enhance the comprehensive framework on loss and damage	25
6. Conclusion	27
Annex I: Legal obligations under the UNFCCC	28
Annex II: Recommendations for decision text in Doha	29

Front cover photo:

A girl walks through the flooded streets of her neighbourhood. Heavy rains overnight on Thursday 09, 2012 in Haiti's northern city of Cap Haitien left streets, homes and fields flooded and hundreds of people homeless and up to 15 people dead.

(Credit: UN Photo/Logan Abassi).

Inside cover photo:

Heavy rains overnight on Thursday 09, 2012 in Haiti's northern city of Cap Haitien left streets, homes and fields flooded and hundreds of people homeless and up to 15 people dead.

(Credit: UN Photo/Logan Abassi).

Acronyms

ADP	Ad hoc Working Group on the Durban Platform
AOSIS	Alliance of Small Island States
CCRIF	Caribbean Catastrophe Risk Insurance Facility
COP	Conference of the Parties
IOM	International Organization of Migration
IPCC	Intergovernmental Panel on Climate Change
SBI	Subsidiary Body for Implementation
SBSTA	Subsidiary Body for Scientific and Technological Advice
SIDS	Small Island Developing States
UNFCCC	United Nations Framework Convention on Climate Change
UNISDR	United Nations International Strategy for Disaster Reduction
UN OCHA	United Nations Office for Coordination of Humanitarian Affairs

Executive summary

Almost daily reminders by the scientific community of the impending dangers posed by climate change have yet to penetrate the consciousness of our political leaders. Despite the fact that climate impacts are now unfolding much faster than previously modelled, governments are failing to act with sufficient mitigation ambition.

The current and future scale of climate change implies serious loss and damage, especially to the lives and livelihoods of those who are poor, most vulnerable and least to blame. Thus we urgently need a means to respond.

The era of loss and damage

Because of past inaction and the sheer severity of the problem, the response must now be not only to immediately and drastically cut emissions, support countries most affected to build their resilience and adapt, but also to address and redress the permanent loss and damage from climate change that is resulting from insufficient mitigation ambition to comprehensively tackle the problem.

When global emission reductions – mitigation – are insufficient to prevent dangerous interference with the global climate, then countries are forced to increase their disaster risk reduction capacity and bear the cost of loss and damage when their capacity is exceeded. **When mitigation on the part of those responsible is insufficient and limits to adaptation in impacted countries are breached, the result is permanent loss and damage** from the adverse effects of climate change that we cannot prevent or avoid. Moreover, the amount of loss and damage experienced globally will continue to increase unabated if drastic mitigation efforts are not immediately undertaken. Precisely because of inaction by wealthy countries, we have transcended the era of mitigation and adaptation – this is now the new era of loss and damage.

Climate injustice

The increased severity and frequency of extreme events from climate change overwhelms infrastructure, support

systems and capacity to respond. Yet loss and damage does not affect all countries equally. Indeed, poor countries and communities least responsible for the global climate crisis are in most instances the most vulnerable to its impacts, presenting potential for the perpetration of the biggest social injustice of our time.

Moreover, many developing countries are seriously threatened by climate change **slow-onset processes** – sea-level rise, increasing temperatures, ocean acidification, glacial retreat and related impacts, land and forest degradation, loss of biodiversity, salinization and desertification. These processes are exacerbating threats already posed by extreme events and seriously undermine prospects for achieving sustainable development. Permanent loss and damage from slow-onset disasters will go far beyond economic losses⁵ alone – livelihoods will be lost, nation states and their territory will have to be abandoned and migrants from climate impacted lands will lose their homes, culture and community.⁶

Legal and moral obligations

International law imposes legal obligations on nation states to act to prevent climate change and to address its adverse effects. These obligations are clearly contained in the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol, and can also be derived from international human rights law and the no-harm rule contained in customary law. Yet it is primarily developed countries that continue to exceed

5. Financial loss to a business or person resulting from death, injury, disability, property damage or destruction caused by the negligent acts of a third party. <http://www.businessdictionary.com/definition/economic-loss.html#ixzz2C12uGn9a>

6. See Boxes 2 and 5 in the main text for definitions of loss and damage and non-economic losses.

7. See Box 5 in the main text for an explanation of economic and non-economic losses.

and disregard these obligations, imperilling the very well-being of other nation states who have often contributed so little to the problem of climate change.

The UNFCCC has established clear obligations for developed countries, both to lead on efforts to reduce global emissions and to provide support to developing countries for both mitigation and adaptation – including finance, capacity-building and the transfer of technologies. These obligations are based on their historical responsibility for causing the problem and on the principle of common but differentiated responsibilities with regard to addressing climate change.

The wealthy countries of the world, however, are spectacularly failing to fulfil their legal and moral obligations. They are continuing to contribute to severe climate change damage. At the same time they are also failing to support those countries most affected to build their resilience and adapt to spiralling climate change impacts. The result is that loss and damage that could potentially be avoided in some of the most vulnerable countries is not happening. **To rectify and redress this situation, developed countries have an urgent legal and moral obligation to undertake urgent and dramatic mitigation action. They must also provide enhanced support for the prevention and avoidance of loss and damage, as well as compensation and rehabilitation for loss and damage caused by both their actions and their inaction.**

The role of the UNFCCC and its Parties in addressing loss and damage

New institutional arrangements are needed under the UNFCCC to address loss and damage. Extreme events and slow-onset impacts are already surpassing the capacities of countries to prevent loss and damage through risk reduction and adaptation. These associated losses and damage now require new approaches on finance, compensation and rehabilitation. New approaches must also consider the challenge of addressing **non-economic losses**.⁷ Finance alone cannot adequately compensate people for the loss of family, territory, culture or livelihoods that will result from radical changes in climate, whether at local, regional or global level. New approaches are also necessary to address the adverse effects of slow-onset disasters that lead to migration, displacement and planned relocation.

To systematically address permanent loss and damage through the new approaches indicated above, Parties to the UNFCCC should establish **a comprehensive framework on loss and damage** with two objectives:

- to facilitate risk reduction and other risk management measures that can **prevent and avoid** loss and damage
- to **provide for redress** in the case of loss and damage. The framework must also provide for **co-ordination** between its various elements, at both regional and global levels.

A comprehensive framework under the UNFCCC would therefore ensure and provide coherence between three necessary functions of Convention bodies related to loss and damage:

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

International Mechanism on Compensation and Rehabilitation

The central element of any comprehensive framework on loss and damage is the establishment of an **International Mechanism on Compensation and Rehabilitation**. The Mechanism should be designed to address four distinct types of permanent loss and damage:

- loss and damage that can be addressed through insurance or other risk-transfer mechanisms
- economic loss and damage from extreme events and slow-onset processes not covered through risk-transfer mechanisms
- economic loss that is difficult to quantify,
- non-economic losses such as loss of ecosystems, cultural heritage, values, and local and indigenous knowledge.

The Mechanism would be situated under the umbrella of the Convention and housed within the UNFCCC Secretariat, where administrative support could be provided, with the support and guidance of a Board constituted by Party members and with the involvement of stakeholders.

7. See Box 5 in the main text for an explanation of economic and non-economic loss.

Moving forward

In summary, a comprehensive framework to address loss and damage under the UNFCCC would include:

- an **International Mechanism on Compensation and Rehabilitation**, established under the guidance of the Conference of the Parties
- **global leadership and co-ordination** carried out through the Adaptation Committee
- the continuing **work programme on loss and damage** under the Subsidiary Body for Implementation (SBI) with active co-ordination and collaboration with the Adaptation Committee and the Subsidiary Body for Scientific and Technological Advice (SBSTA).

Therefore, to respond to the realities of severe climate change damage and current insufficient action on mitigation, COP18 must:

- reaffirm previous commitments, based on the principles of equity and common but differentiated responsibilities, to take the lead in combating climate change and its adverse effects, including through mitigation action and the provision of new, additional and predictable financial resources, capacity, and technology transfer
- establish an International Mechanism on Compensation and Rehabilitation for loss and damage
- agree a process to elaborate the procedures and

modalities of the International Mechanism, under the guidance of the COP, to become operational by decision of COP20

- elaborate a second phase of the loss and damage work programme under the SBI to define the remaining elements of the comprehensive framework on loss and damage.

Goal and structure of the report

The aim of this report is to highlight the pressing issue of climate change loss and damage and the urgent action required of the UNFCCC and its Parties to addressing it. Section 2 outlines the historical and scientific contexts of loss and damage, and Section 3 situates loss and damage in its legal and moral contexts. In Section 4, an outline of a comprehensive framework on loss and damage is elaborated, including the role of an International Mechanism on Compensation and Rehabilitation within the framework. The report ends with recommendations for actions that COP18 must take to establish the framework (Section 5), including the design of an International Mechanism on Compensation and Rehabilitation and further work needed under the Adaptation Committee and the Subsidiary Body. The report also provides recommended decision text to be adopted at COP18 (Annex II).



Bangladesh
(Credit: © 2007 Sandra Bulling /CARE).

1. Introduction

“The pace of climate change is increasing, as is the frequency of extreme weather events. These events already impose loss and damage which is difficult to deal with by policy and decision makers at multiple levels and by the vulnerable communities they represent due to uncertainty and volatility associated with the increasing pace of such change. In the future, increasing impacts from combinations of extreme weather and slow onset events are expected to induce more loss and damage.”

UNFCCC, *Background paper on a range of approaches to address loss and damage*. October 2012⁸

In May 2012, recognising the dire problems of climate change, and as a first contribution to negotiations on loss and damage, a number of organisations published *Into Unknown Territory*.⁹ The report highlighted the limits to adaptation and the reality of loss and damage from climate impacts. The report highlights “that even with effective action to mitigate climate change and adapt to its impacts, some countries will experience irreversible losses. Land, property, ecosystems and communities will be affected to such an extent that a return to normal life will not be possible. In extreme cases, countries will permanently lose territory to climatic disasters and rising sea levels.” The authors joined many, many other voices in alarm, noting that “Currently the planet is not on track to limit dangerous climate change; in fact it’s rapidly heading towards a world 4 to 6°C warmer by the end of this century compared to pre-industrial levels.”

This report continues to raise the alarm, and also suggests solutions. We cannot sit idly by and watch as the world moves closer to a world where we fear for our children’s futures, a 4°C world that “is incompatible with any reasonable characterization of an organized, equitable and civilized global community ... beyond what many people think we can reasonably adapt to ... devastating for many if not the majority of ecosystems.”¹⁰

If developed countries continue failing to make drastic emission reductions, loss and damage in developing countries will continue unabated. It is precisely because of inaction by wealthy countries that time for mitigation

and adaptation has passed: we are now in the era of loss and damage. In response, this report proposes a comprehensive framework on loss and damage under the UNFCCC, including an International Mechanism on Compensation and Rehabilitation.

This report is aimed first and foremost at UNFCCC negotiators and at the politicians and policymakers who will determine negotiating positions for their countries. However, the report will also be very useful for other actors and agencies working on and around the issue of climate change and who are concerned about our common future.

The aim of this report is to highlight the pressing issue of climate change loss and damage and the urgent action required of the UNFCCC and its Parties to address it. Section 2 outlines the historical and scientific contexts of loss and damage, and Section 3 situates loss and damage in its legal and moral contexts. In Section 4, an outline of a comprehensive framework on loss and damage is elaborated, including the role of an International Mechanism on Compensation and Rehabilitation within the framework. The report ends with recommendations for actions that COP18 must take to establish the framework (Section 5), including the design of an International Mechanism on Compensation and Rehabilitation and further work needed under the Adaptation Committee and the Subsidiary Body. The report also provides recommended decision text to be adopted at COP18 (Annex II).

-
8. UNFCCC. 2012. Background paper to the expert meeting on: A range of approaches to address loss and damage associated with the adverse effects of climate change, including impacts related to extreme weather events and slow-onset processes. Bridgetown, Barbados, 9-11 October.
 9. ActionAid, CARE International, Germanwatch and WWF. 2012. *Into unknown territory: the limits to adaptation and reality of loss and damage from climate impacts*.
 10. Anderson K. 2012. Climate change going beyond dangerous – brutal numbers and tenuous hope. In *What Next Volume III: Climate and Equity. Development Dialogue* (September): 16-40. Kevin Anderson is the deputy director of the Tyndall Centre for Climate Change Research at the University of Manchester, UK.



A coastal town is flooded. Hurricane Sandy passed to the west of Haiti October 25, 2012 causing heavy rains and winds, flooding homes and overflowing rivers. (Credit: UN Photo/ Logan Abassi).

A view of the flooding in the Province of Punjab, near the city of Multan. (Credit: UN Photo/Evan Schneider).



2. Loss and damage: historical and scientific contexts

The work programme on loss and damage, under the Subsidiary Body for Implementation of the United Nations Framework Convention on Climate Change (UNFCCC), was established in 2010 in decision 1/CP.16:

“in order to consider ... approaches to address loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change.”

Decision 7/CP.17 (2011) recognised “the need to explore a range of possible approaches and potential mechanisms, including an international mechanism, to address loss and damage”. Parties are expected to make recommendations on loss and damage to COP18 (in December 2012), including elaborating the following possible elements of the work programme:

- “possible development of a climate risk insurance facility to address impacts associated with severe weather events;
- options for risk management and reduction, risk sharing and transfer mechanisms, such as insurance, and resilience-building, including through economic diversification;
- approaches for addressing rehabilitation measures associated with slow onset events;

- engagement of stakeholders with relevant specialized expertise.”¹¹

The issue of how to address loss and damage has been on the negotiating table since 1991 (see Box 1), when during negotiations towards the UNFCCC, the Alliance of Small Island States (AOSIS) put forward the idea for an International Insurance Pool and an International Climate Fund. AOSIS member countries clearly saw that in the absence of sufficient mitigation effort by those most responsible for anthropogenic greenhouse gas emissions, slow-onset temperature rise and sea level rise associated with that temperature rise would lead to permanent loss and damage that could not be prevented or otherwise avoided by disaster risk reduction or adaptation. Sadly, due to inaction by big emitters this dire future prediction is now coming true.

Ethiopia
(Credit: © Stuart
Dunn/CARE).



11. Decision 1/CP.16.

Box 1: A brief history of loss and damage in the UNFCCC

1991. Vanuatu tables a proposal that asks for insurance of island states that compensates against sea-level rise. The rationale was also that putting costs on climate impacts would drive down mitigation ambition. Watered down by industrialised countries, Vanuatu's proposal survives as the word 'insurance' in the UNFCCC.

2007. The Bali Action Plan agreed at COP13 mandates Parties to explore "means to address loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change".

2008. Alliance of Small Island States (AOSIS) tables a proposal for a multi-window mechanism for international loss and damage mechanism at the climate summit in Poznan (COP14).

2010. The Cancun climate conference (COP16) establishes a "work programme in order to consider approaches to address loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change".

2011. In Durban, at COP17, Parties agree to structure the organisation of the work programme into three thematic areas:

1. Assessing the risk of loss and damage associated with the adverse effects of climate change and the current knowledge on the same
2. A range of approaches to address loss and damage associated with the adverse effects of climate change, including impacts related to extreme weather events and slow-onset events, taking into consideration experience at all levels
3. The role of the Convention in enhancing the implementation of approaches to address loss and damage associated with the adverse effects of climate change.

2012. Subsidiary Body for Implementation is due to make recommendations on loss and damage at the climate summit in Doha (COP18).

Source: *Into Unknown Territory*. ActionAid, CARE International, Germanwatch and WWF. 2012.

Since 1991, the loss and damage issue has only become more urgent. Annex I Parties,¹² those most responsible for current warming and the expected warming of the next decades, have consistently failed to significantly reduce their emissions – shirking historical responsibility for the problem they caused and avoiding their legal obligations under the Convention, including under Article 3.1:

"The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. **Accordingly the developed country Parties should take the lead in combating climate change and**

the adverse effects thereof."

As mitigation efforts have been severely inadequate and slow to be made, changes in the climate system because of anthropogenic greenhouse gas emissions have been more severe and frequent. Indeed, adverse effects of climate change are occurring much more rapidly than scientists predicted.

The global average surface temperature has risen 0.74°C in the past century.¹³ Depending on choices taken in the next few years, the additional temperature rise predicted for the next century (relative to the 1960-1979 average) is predicted to be between 1.1 and 6.5°C.¹⁴

12. Annex I Parties are developed countries and countries undergoing the process of transition to a market economy, as defined in Annex I to the UNFCCC. Annex II Parties are developed countries. Each group of countries has specific obligations defined by the Convention. Annex I Parties have specific commitments related to emission reductions established under Article 4.2. On top of these commitments, Annex II Parties have commitments related to finance and technology transfer as articulated in Articles 4.3, 4.4 and 4.5. More detail on the financial commitments of Annex II Parties is contained in a later section of the report.

13. Intergovernmental Panel on Climate Change (IPCC). 2007. Summary for policymakers. In: *Climate Change 2007: The physical science basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Solomon et al (eds)]. Cambridge, UK: Cambridge University Press.

14. National Research Council. 2010. *Advancing the science of climate change*. Washington, DC: The National Academies Press.

The global rise in temperature and associated climate impacts are already leading to changes in precipitation patterns and more intense heat waves. In many regions, storms have increased in severity and frequency. Devastating torrential floods have decimated crops, caused landslides, and destroyed livelihoods and lives across Asia and South America.¹⁵ Rising sea levels coupled with storm surges have increased salinization of land and aquifers in low-lying countries such as Bangladesh, leading to migration from now non-productive coastal areas.¹⁶ Severe droughts have affected east and west Africa, Australia, and the United States.¹⁷ As this report is being finalised, the east coast of the United States has

been hit by hurricane Sandy and its associated storm surge exacerbated by rising sea levels, with costs of loss and damage from this single event estimated to be at least US\$50 billion.¹⁸

These are impacts being felt now, with a mere 0.74°C temperature rise. Kevin Anderson, Deputy Director of the Tyndall Centre for Climate Change Research, argues that we must now begin to call 2°C the threshold between 'dangerous' and 'extremely dangerous' climate change, as dangerous impacts and higher temperatures previously predicted to occur in much later times are appearing very much earlier.

Box 2: Defining loss and damage

The UNFCCC background paper prepared for the recent round of expert meetings under the work programme defines loss and damage as “the actual and/or potential manifestation of impacts associated with climate change in developing countries that negatively affect human and natural systems”.

The paper provides further clarification on what constitutes loss (“negative impacts which cannot be repaired or restored like loss of freshwater sources”) and damage (“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”).¹⁹

Other observers consider loss and damage as ‘beyond adaptation’.²⁰ That is, loss and damage are the adverse effects of climate change that result in developing countries from insufficient mitigation action and failed efforts at disaster risk reduction and adaptation. A ‘beyond adaptation’ framing also encompasses those adverse effects of climate change to which adaptation is impossible – for example, slow-onset processes such as sea-level rise and desertification.

The UNFCCC background paper on the range of approaches considers the future magnitude of potential loss and damage, taking into consideration impacts of slow-onset climatic processes:

“Future loss and damage is potentially of unimaginable magnitude – especially considering non-economic

values, and the interconnectivity leading to cascading, transnational effects. Atmospheric hazards such as heat waves could become more prevalent as long term ‘process’ climate change such as increasing temperatures) (sic) takes place. The concept of tipping elements in climate, natural and societal systems is an important consideration in addressing potential loss and damage.”²¹

-
15. Lacey S. 2012. Drought, flooding and ‘multiple, combined outbreaks’ of pests threaten to reduce Asian agricultural output 50%. Retrieved from ThinkProgress: <http://thinkprogress.org/climate/2012/04/16/463231/drought-flooding-and-outbreaks-of-pests-threaten-to-reduce-asian-agricultural-output-50/>; Gaultier, S. 2012. Flooding across South America. Retrieved from Al Jazeera: <http://www.aljazeera.com/weather/2012/02/201222210142118241.html>
 16. Hossain M. 2010. Global warming induced sea level rise on soil, land and crop production. Farmgate, Bangladesh: Soil Resource Development Institute, Bangladesh Ministry of Agriculture.
 17. Haddad M and A Essa. 2012. Interactive: Mapping the Sahel drought. Retrieved from Al Jazeera: <http://www.aljazeera.com/indepth/interactive/2012/06/2012618145252317756.html>; Tisdall, S. 2012. East Africa’s drought: the avoidable disaster. Retrieved from The Guardian: <http://www.guardian.co.uk/world/2012/jan/18/east-africa-drought-disaster-report>; Lister, T. 2012. The driest season: Global drought causes major worries. Retrieved from CNN World: <http://www.cnn.com/2012/09/07/world/drought-around-world/index.html>; Hambling, D. 2012. Weather watch: Australia ‘big drought’ officially over after a decade. Retrieved from The Guardian: <http://www.guardian.co.uk/news/2012/may/11/weatherwatch-drought-australia-floods>
 18. “Superstorm Sandy caused as much as \$50 billion in economic damage, with about \$10 billion to \$20 billion of insured losses, more than double previous estimates.” Gittelsohn J. 2012. Sandy estimate raised to as much as \$50 billion. Bloomberg.com. 1 November. <http://www.bloomberg.com/news/2012-11-01/sandy-damage-estimate-raised-to-as-much-as-50-billion.html>
 19. UNFCCC, 2012. Background paper on a range of approaches.
 20. Saleemul Huq, Executive Director of the International Centre for Climate Change and Development. Comment made during the UNFCCC expert meeting on a range of approaches to address loss and damage associated with the adverse effects of climate change, including impacts related to extreme weather events and slow-onset events. Bangkok, Thailand. 27 August 2012.
 21. UNFCCC. 2012. Background paper on a range of approaches.



In advance of expected rains, Fatima Adam plants millet seed in a field at the edge of Torgo village, Chad. Planting early is a gamble. It must rain within 15 days or the millet will not grow, Fatima says. The Sahel fringe of Chad is in the grip of a food crisis. Chronic poverty combined with failed crops in 2011 have left people vulnerable to hunger and malnutrition. Many families have been forced to sell livestock to buy food. Women and children are walking increasingly further in search of water. Men have left with livestock in search of pasture in the country's south. (Credit: © Brendan Bannon/CARE).

Adaptation and its limits

When mitigation of greenhouse gas emissions by responsible countries is insufficient to “prevent dangerous anthropogenic interference with the climate system”,²² countries are forced to undertake disaster risk reduction and adaptation measures to prevent permanent loss and damage. There are, however, limits to how far disaster risk reduction and adaptation can reduce loss and damage.

In the case of disaster risk reduction, some types of disasters will increase in frequency and severity (see Box 1 on the latest Intergovernmental Panel on Climate Change (IPCC) findings regarding extreme events), overwhelming both risk reduction measures and generally the ability of most developing countries to cope with the impacts of those disasters. Moreover, loss and damage from extreme events extend beyond immediate losses of property and life. In St Lucia, damage from hurricane Tomas was estimated at about 34% of total GDP.²³ Such devastating impact has a serious effect on long-term prospects for sustainable development.²⁴

Adaptation to 2°C of warming will be more difficult than for 1.5°C. Adapting to 4°C or 6°C of warming may be impossible. Moreover, given the changing nature of the global climate, adaptation will always be insufficient, requiring a continuous learning process towards a constantly moving boundary. The greater the warming, the more loss and damage that can be anticipated from the adverse effects of climate change. Similarly, the less support for adaptation in terms of finance, technology and capacity, the more loss and damage will result. A country's level of development will also affect how its population experiences loss and damage, as poverty and related socio-economic and infrastructure weaknesses exacerbate the impacts and adverse effects of climate change. But a country's lack of development or status of development is not an excuse for inaction by the global community to help them respond to severe climate loss and damage.

22. UNFCCC. Article 2.

23. International Monetary Fund. 2011. St Lucia request for disbursement under the Rapid Credit Facility and Emergency Natural Disaster Assistance. <http://www.imf.org/external/pubs/ft/scr/2011/cr11278.pdf>

24. The UNFCCC background paper on a range of approaches (UNFCCC, 2012) notes that “The impacts of loss and damage related to climate-related stressors and longer-term climatological shifts can set back socio-economic development and reinforce cycles of poverty across the world. ... Some of these impacts will involve loss and damage to life, property and other assets important for the sustainable development of those countries which need these resources most, including impacts that contribute to constraints on economic production and non-economic losses.”

The impossibility of adapting to slow-onset disasters²⁵

There are very real limits to how far human systems and ecosystems can adapt to most of the slow-onset processes identified in UNFCCC decision 1/CP.16. This is true particularly for rises in temperature and sea levels, ocean acidification, loss of biodiversity, salinization and desertification. Because such processes progress and increase their impact over time – and often at large scale, adaptation gradually becomes less possible. As temperatures and sea levels rise, territory will become uninhabitable and unproductive. Soil moisture levels

will decrease to the point that cultivation of crops is no longer viable in entire regions. Groundwater sources in coastal areas will become too saline to be used as drinking water. Adaptation will become impossible on low-lying islands, in settlements close to sea level, and in the most arid regions. This will lead to permanent loss of lands, livelihoods and cultural resources.²⁶

Permanent loss and damage from slow-onset disasters will go far beyond economic loss – livelihoods will be lost, territory will have to be abandoned, and migrants from non-productive lands will lose their homes, culture and community.

Box 3: Extreme events and the IPCC SREX report²⁷

The most recent report from the Intergovernmental Panel on Climate Change (IPCC), *Managing the risks of extreme events and disasters to advance climate change adaptation* (also referred to as the SREX report), provides a summary of recent climate predictions that is useful in the context of loss and damage. Below are a few of the report's most relevant conclusions, calculated with the usual IPCC conservative restraint, about future impacts of climate change [emphasis added]:

- Models project substantial warming in **temperature extremes** by the end of the 21st century. It is virtually certain that increases in the frequency and magnitude of warm daily temperature extremes and decreases in cold extremes will occur in the 21st century at the global scale. It is very likely that the length, frequency, and/or intensity of warm spells or heat waves will increase over most land areas.
- It is likely that the **frequency of heavy precipitation** or the proportion of total rainfall from heavy falls will increase in the 21st century over many areas of the globe. Heavy rainfalls associated with tropical cyclones are likely to increase with continued warming. There is medium confidence that, in some regions, increases in heavy precipitation will occur despite projected decreases in total precipitation in those regions.
- Average tropical cyclone **maximum wind speed** is likely to increase.
- There is medium confidence that **droughts will intensify** in the 21st century in some seasons and areas, due to reduced precipitation and/or increased evapotranspiration. This applies to regions including southern Europe and the Mediterranean region, central Europe, central North America, Central America and Mexico, northeast Brazil, and southern Africa.
- It is very likely that mean sea level rise will contribute to upward trends in **extreme coastal high water levels** in the future. There is high confidence that locations currently experiencing adverse impacts such as coastal erosion and inundation will continue to do so in the future due to increasing sea levels, all other contributing factors being equal. The very likely contribution of mean sea level rise to increased extreme coastal high water levels, coupled with the likely increase in tropical cyclone maximum wind speed, is a specific issue for tropical small island states.
- There is high confidence that changes in **heat waves, glacial retreat, and/or permafrost degradation** will affect high mountain phenomena such as slope instabilities, movements of mass, and glacial lake outburst floods. There is also high confidence that changes in **heavy precipitation** will affect landslides in some regions.

25. UNFCCC decision 1/CP.16: "Slow onset events are defined as including sea level rise, increasing temperatures, ocean acidification, glacial retreat and related impacts, salinization, land and forest degradation, loss of biodiversity and desertification."

26. Hoffmaister J P and D Stabinsky. 2012. Loss and damage: some key issues and considerations for SIDS expert meeting. Third World Network Briefing Paper on Loss and Damage 4. Penang: Third World Network.

27. IPCC. 2012. Special Report on managing the risks of extreme events and disasters to advance climate change adaptation. Geneva: IPCC.

3. Loss and damage: the legal and moral contexts

This section considers the **legal and moral contexts** for action under the UNFCCC.²⁸ The ultimate objective of the Convention is the:

“stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.”²⁹

We may already be past the point at which we can prevent dangerous interference with the climate system;³⁰ food production and ecosystems are already being affected and are further threatened. Moreover, due to the failure to reach the Convention’s objective, climate change is already threatening internationally recognised human rights, including the right to development. This is particularly so in those many countries whose economies rely on climate-sensitive sectors, for example agriculture and fisheries, and the very economic and ecological systems upon which the poor and vulnerable most depend.³¹

International human rights law contains perhaps the strongest legal foundation for the moral duty of developed states to put dangerous climate change to a halt and enable injured states to mitigate the threat to the rights of their citizens. The UN Human Rights Council and other human rights bodies have repeatedly recognised that climate change poses a threat to the fulfilment of human rights, including the rights to life, food and the highest attainable standard of health. These inalienable rights are protected in numerous treaties that have been ratified by virtually every state in the world.³² States are bound by those treaty obligations to refrain from interfering with, and to take positive measures to protect, human rights.

General obligations under international law

International law imposes legal obligations on states to act to prevent climate change and to address its adverse effects. These obligations are clearly contained in the UNFCCC and the Kyoto Protocol, and can also be derived from international human rights law and the no-harm rule contained in customary international law.

A developed state’s failure to meet its UNFCCC mitigation obligations could constitute a human rights violation, based on the foreseeable consequences of this failure on the human rights the state must protect. Thus, international responsibility for climate change damage could arise contemporaneously under the UNFCCC and under international human rights law.³³

28. The author gratefully acknowledges the assistance of Margreet Wewerinke in the development of this section.

29. UNFCCC, Article 2.

30. Anderson K and A Bows. 2011. Beyond ‘dangerous’ climate change: emission scenarios for a new world. *Philosophical Transactions of the Royal Society A* 369: 20-44; PricewaterhouseCoopers. 2012. Too late for two degrees? http://www.pwc.com/en_GX/gx/low-carbon-economy-index/assets/pwc-low-carbon-economy-index-2012.pdf

31. Hoffmaister and Stabinsky. 2012.

32. Although human rights obligations are different for every state, virtually every State has ratified at least some treaties. For example, while the United States has not ratified some conventions – most famously it has not ratified the Convention on the Rights of the Child, which every other state in the world except Somalia has ratified – it has ratified other core treaties, such as the International Covenant on Civil and Political Rights.

33. Rajamani L. 2010. Rights-based perspectives in the international negotiations on climate change. *Journal of Environmental Law* 22(3): 391-429; Wewerinke M and C F J Doebbler. 2011. Exploring the legal basis of a human rights approach to climate change. *Chinese Journal of International Law* 10: 141.

Customary international law provides an additional legal basis for states' obligations to act to prevent dangerous climate change. In accordance with the no-harm rule, states have a duty to "ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control".³⁴ Verheyen and Roderick explain that this duty arises where a state is able to prevent the occurrence of transboundary environmental harm, or minimise the risk thereof, and foresees or knows that a certain activity could lead to transboundary damage.³⁵ That state must then take preventive measures proportionate to the risk.³⁶ In relation to climate change damage, the rule would likely require measures that are transformative in nature and scale, based on the massive threat caused by climate change to the environment in other states.

If a state breaches the no-harm rule, or any other rule, it incurs international responsibility for that breach. The law of state responsibility obliges the state to cease the internationally wrongful act and address the damage or harm caused by the breach. In the words of the International Law Commission, "once a breach has been established, the offending state must cease the act and make 'full reparation' for injury caused, including for 'any damage, whether material or moral'. Full reparation 'shall take the form of restitution, compensation and satisfaction, either singly or in combination'."³⁷

Legal obligations under the UNFCCC

To ensure achievement of its objective, cited above, the Convention establishes a number of important principles, as well as further obligations on Parties, regarding adaptation and support to developing countries.³⁸ Articles 3.1 and 3.2 frame the discussion regarding responsibility and the need to give full consideration to the needs of developing countries that are particularly vulnerable to the adverse effects of climate change.

Article 3.1 establishes the principle that:

"Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof."

Article 3.2 further states:

"The specific needs and special circumstances of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change, and of those Parties, especially developing country Parties, that would have to bear a disproportionate or abnormal burden under the Convention, should be given full consideration."

Obligations regarding adaptation and the provision of means to implement adaptation action – finance, technology and capacity-building – are set out in Articles 4.1(b), 4.3, 4.4, 4.5 and 12.1. Avoidable loss and damage results from a failure of Annex I and Annex II Parties to fulfil these Convention obligations.

Obligation to provide compensation

Climate change is causing serious harm and creating the potential for future harm to countries and their citizens.

Developed countries have obligations to act to prevent adverse effects of climate change in other states, including through their own mitigation actions. Countries that do not comply with these obligations are responsible for providing compensation for loss and damage caused by their actions or their inaction through redress³⁹ or reparations.⁴⁰

34. 1996 ICJ Advisory Opinion in the Legality of the Threat or Use of Nuclear Weapons, as cited in Verheyen R and P Roderick. 2008. Beyond Adaptation. WWF-UK.

35. Verheyen and Roderick. 2008. Beyond Adaptation. WWF-UK.

36. Verheyen and Roderick. 2008. Beyond Adaptation. WWF-UK.

37. Verheyen and Roderick. 2008. Beyond Adaptation. WWF-UK., citing the International Law Commission.

38. The texts are cited in full in Annex I. Several provisions are cited in full below.

39. Redress is compensation paid for economic harm, whether in the form of a monetary remedy (eg a voluntary payment, damages, restitution, or other monetary relief) or a conduct remedy with a restorative element (eg an exchange of a good or service, specific performance or rescission of a contract). Organization for Economic Cooperation and Development (OECD). 2007. Recommendation of the Council on Consumer Dispute Resolution and Redress. 12 July - C(2007)74.

40. University of Hawai'i law professor Maxine Burkett adds an important contribution to thinking about redress and compensation in a recent article on climate reparations (see footnote 42 below for citation). According to Burkett, "reparation, broadly defined, describes programs that are justified by past harms and are also designed to assess and correct the harm and improve the lives of the victims into the future." She goes on to state that "the ability of reparations to express moral force is what makes reparations so compelling in the climate change context".

There are also moral obligations to address loss and damage caused by climate change: the actions of the world's 'haves' will directly, and in many cases significantly, affect the lives, livelihoods and welfare of the 'have-nots'. Those who have been least responsible for climate change will be most affected by the impacts of actions taken by others, as well as by their inaction. The need to act is clear and compelling: urgent action to redress this situation is the only reasonable response.

A collective scheme for redress and reparation should be sought under the UNFCCC. Verheyen and Roderick caution against "a raft of complex, uncoordinated and cumbersome individual legal cases by States".⁴¹ Burkett adds that the "threat of lawsuits ... will not lead to a remedy that is forward-looking and holistic".⁴² Lefeber argues that "states even have a legal duty to provide negotiated solutions where environmental damage is expected to occur."⁴³ However, countries and regions have solid ground for legal action, and if an International Mechanism on Compensation and Rehabilitation is not established, there may well be in the coming years a proliferation of cases for redress and reparation for the adverse effects of climate change.

There are models for collective compensation and redress in other environmental treaties. Two examples are the International Oil Pollution Compensation Fund and the International Oil Pollution Compensation Supplementary Fund established in 1992 under the Fund Convention and the Hazardous and Noxious Substances Fund established under the Hazardous and Noxious Substance Convention.⁴⁴

However, as discussed earlier, both economic and non-economic losses must be taken into consideration when designing approaches to addressing loss and damage. As is the case with insurance and other risk-transfer mechanisms, supplementary compensation schemes will only address a subset of losses incurred. A comprehensive approach that addresses both economic and non-economic losses – including loss of culture, territory and livelihoods – must be put in place. In this context, the proposal by Burkett on climate reparations merits further consideration:

"The [UNFCCC], as the policy-relevant forum, must drive discussions on possible measures to assist countries in coping with loss and damage."⁴⁵



A woman sells produce at a flooded market place. Hurricane Sandy passed to the west of Haiti on October 25, 2012 causing heavy rains and winds, flooding homes and overflowing rivers. (Credit: UN Photo/ Logan Abassi).

41. Verheyen and Roderick. 2008. Beyond Adaptation. WWF-UK.

42. Burkett M. 2009. Climate reparations. Melbourne Journal of International Law 10: 509.

43. As cited in Verheyen and Roderick. 2008. Beyond Adaptation. WWF-UK.

44. For more detail see Verheyen and Roderick, 2008, Beyond Adaptation. WWF-UK. and Nijar G S. 2000. Developing a liability and redress regime under the Cartagena Protocol on Biosafety. Minneapolis, MN: Institute for Agriculture and Trade Policy.

45. Hoffmaister J P and D Stabinsky. 2012. Loss and damage: some key issues and considerations for SIDS expert meeting. Third World Network Briefing Paper on Loss and Damage 4. Penang: Third World Network.

4. A comprehensive framework to address loss and damage

Climate change is already causing significant loss and damage – one only needs to consider the estimated costs of Hurricane Sandy in the countries affected, including Haiti, Cuba and the United States, to understand the scale of the effort that is required now. In the coming decades, climate change impacts will bring about **even further** significant loss and damage in developing countries that are particularly vulnerable to the adverse effects of climate change. The spiralling impacts of slow-onset disasters will further threaten vulnerable countries, and undermine human rights and the right to development.

Mitigation efforts by those countries most responsible for anthropogenic emissions leading to climate change have been woefully insufficient. The level of warming currently committed, due to emissions already in the atmosphere, will push the planet towards 1.5°C of warming in the next decades.⁴⁶ Funding for adaptation efforts has been inadequate to address even current levels of committed

warming, let alone the further challenges faced beyond 1.5°C.

The UNFCCC is the most appropriate forum for addressing the challenges of loss and damage. Countries' obligations should be acted upon systematically, within a comprehensive framework.

Figure 1: The continuum for addressing loss and damage



46. The IPCC concluded in 2007 that “for the next two decades a warming of about 0.2°C per decade is projected for a range of SRES emissions scenarios”. IPCC. 2007. *Climate Change 2007: Synthesis Report*. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Geneva, Switzerland: IPCC.

A comprehensive framework should broadly accomplish two objectives:

- facilitate risk reduction and other risk management measures that can **prevent and avoid** loss and damage
- **provide for redress** in the case of loss and damage that is not prevented or is unavoidable.

A third objective, **co-ordination** between the various components, would be necessary at regional and global levels.

A comprehensive framework under the UNFCCC would provide coherence between these three necessary functions of Convention bodies related to loss and damage:

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

Examples of efforts related to each of these functions are given in Box 4.

Box 4: Elements of a comprehensive framework to address loss and damage

For prevention and avoidance of loss and damage:

- Disaster **risk reduction, climate change adaptation and risk management frameworks** to prevent or reduce loss and damage ex ante.
- **Research and systematic observation** to understand the scope, magnitude and character of climate change risks. Research on slow-onset events and tipping elements will be increasingly valuable in the context of predicting and addressing loss and damage.
- **Scientific and technological advice** on disaster risk reduction and adaptation measures.
- **Mobilisation of sufficient new and additional resources to support disaster risk reduction and adaptation measures**, recognising the stark inadequacies of current financial support. Most disaster aid comes in the form of ex post and ad hoc humanitarian aid. Resources forthcoming through the UNFCCC process, such as through the Adaptation Fund and fast-start financing, have been trivial compared to the scale of the need, and an essential element of efforts to prevent loss and damage must be to increase resources.

For compensation and rehabilitation of loss and damage, including economic and non-economic losses:

- **Regional and/or global catastrophe risk-transfer facilities.**
- **Debt relief and other financial measures** to lessen external financial obligations when countries are faced with catastrophic shocks.
- **A financial mechanism for redress, including for compensation and rehabilitation** of unavoided and unavoidable loss and damage that cannot be compensated through traditional risk transfer facilities, such as for slow-onset events and transformational changes in state.
- **Means to assess and address less directly measurable economic losses** such as lost sustainable development opportunities and impacts on economic growth.
- **Means to assess and address non-economic losses (see Box 5).**

For co-ordination:

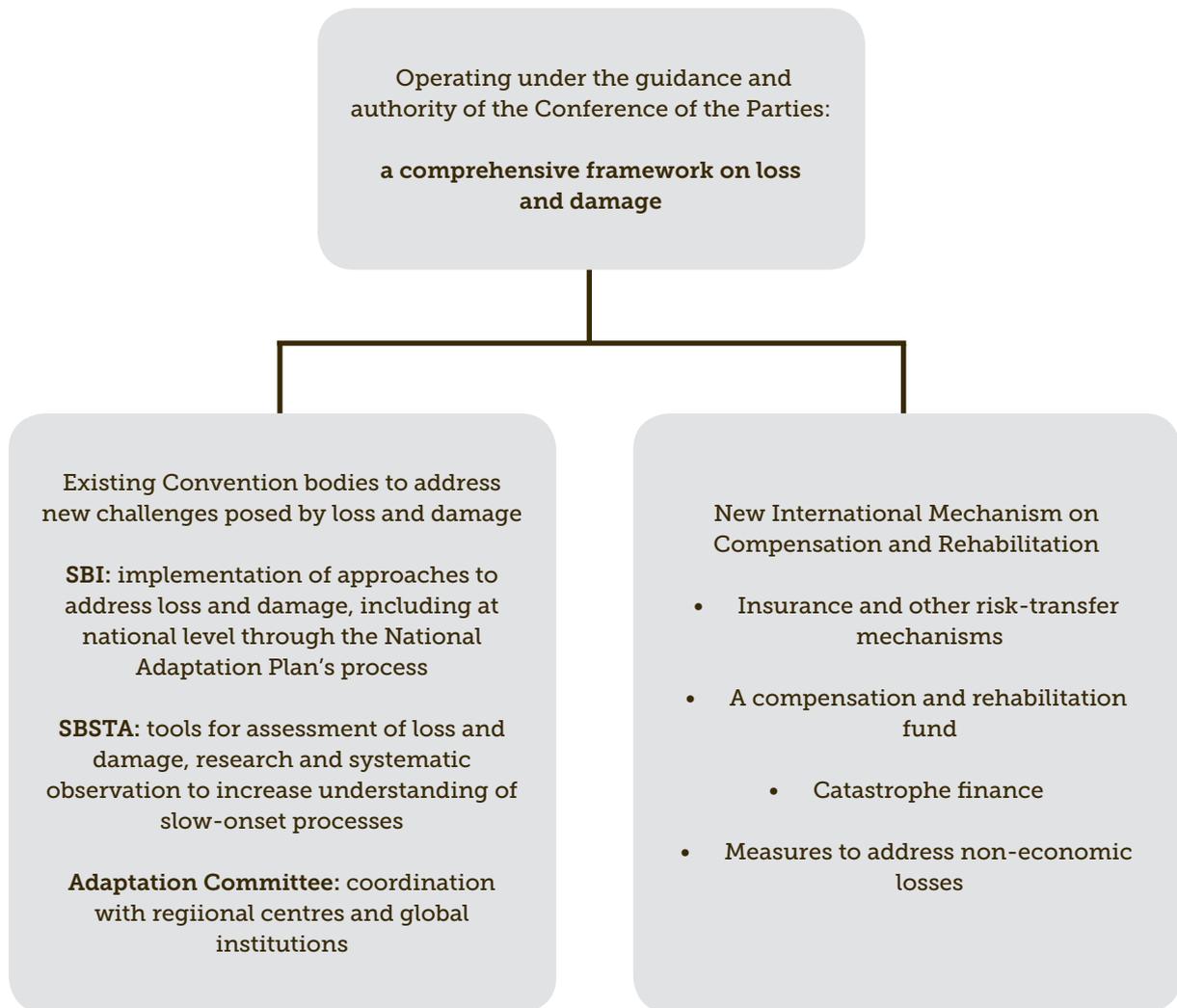
- **Regional and global co-operation to strengthen coherence and co-operation** and to ensure global reach of efforts and prevent piecemeal approaches to a systemic set of needs.
- **Co-ordination with global and regional institutions to address displacement, migration and planned relocation** efforts arising from the loss of productive lands and livelihoods associated with impacts of climate change.

Work towards a comprehensive framework under the UNFCCC to systematically and effectively address loss and damage in developing countries must move forward along three axes:

- co-ordination, coherence and enhancement of ongoing institutional support under the SBI and SBSTA to **prevent and avoid** loss and damage

- development of the **global co-ordination** function of the Adaptation Committee to provide coherence with other regional and global efforts on loss and damage
- development of an **International Mechanism on Compensation and Rehabilitation**.

Figure 2: A comprehensive framework on loss and damage under the UNFCCC



Institutional support for the prevention of loss and damage

Co-ordinated support is needed to prevent as much loss and damage as possible, in particular to ensure that risk management remains a priority, including with respect to provision of adequate and predictable finance. This is a role that should be taken on by the Adaptation Committee, in consultation with the other relevant bodies of the Convention.

Relevant efforts already underway under the Convention, such as work under SBSTA in the Nairobi work programme, and research and observation in the context of Article 5, could be more specifically focused on preventing loss and damage. For example, the SBSTA could be tasked with providing further support for development of appropriate risk assessment and risk management tools for slow-onset processes. In co-ordination with the United Nations International Strategy for Disaster Reduction (UNISDR), the SBSTA could also provide technical support for reducing risks associated with extreme weather events.

Scientific understanding of risks is key to designing approaches to prevent or minimise them. Through its work under Article 5, SBSTA could undertake studies designed to increase understanding of slow-onset processes and the measures available to manage and reduce slow-onset risks.

Institutional leadership and global co-ordination

There is a need to involve other regional and international organisations in work on issues such as migration, displacement and planned relocation, disaster risk reduction, and conflict. But it is important that these efforts are effectively co-ordinated with loss and damage work under the UNFCCC. The Adaptation Committee should play a central coordinating role under the comprehensive framework on loss and damage.

Regional and international organisations to be involved should include:

- regional centres for adaptation⁴⁷
- international organisations with a role in addressing displacement, migration, and planned relocation because of climate change impacts – for example the **International Organization of Migration (IOM)** and the **United Nations Office for Co-ordination of Humanitarian Affairs (UN OCHA)**
- the **United Nations International Strategy for Disaster Reduction (UNISDR)**. Although it has a broad mandate related to all natural disasters, UNISDR is important in assisting countries with disaster risk reduction related to extreme events. Co-ordination and co-operation between UNISDR, and its Hyogo Framework for Action and the upcoming post-2015 Disaster Risk Reduction framework, should continue under the UNFCCC.

International Mechanism on Compensation and Rehabilitation

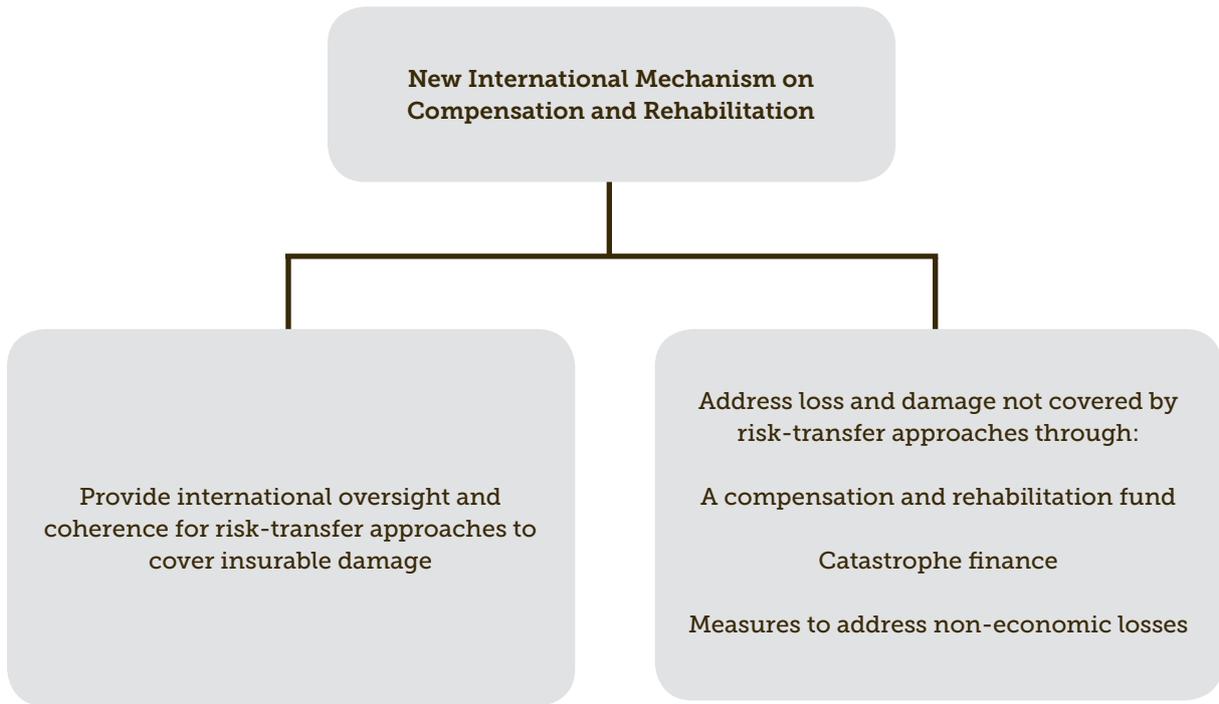
Current approaches to prevent and avoid loss and damage are insufficient. This is clear from the increasing and significant adverse effects being seen in vulnerable countries – including loss of lives, livelihoods, culture and territory. Therefore, an International Mechanism on Compensation and Rehabilitation is an indispensable element of a comprehensive framework on loss and damage.



Ethiopia
(Credit: ©Stuart Dunn/CARE).

47. Decision 1/CP.16 “Invites Parties to strengthen and, where necessary, establish regional centres and networks, in particular in developing countries, with support from developed country Parties and relevant organizations, as appropriate, and to facilitate and enhance national and regional adaptation actions, in a manner that is country-driven, encourages cooperation and coordination between regional stakeholders and improves the flow of information between the Convention process and national and regional activities.”

Figure 3: International Mechanism on Compensation and Rehabilitation



An International Mechanism on Compensation and Rehabilitation for loss and damage would address four distinct types of permanent loss and damage:

- loss and damage that can be addressed through insurance or other risk-transfer mechanisms
- economic loss and damage from extreme events and slow-onset processes not covered through risk-transfer mechanisms
- economic losses that are difficult to quantify, such as lost opportunities for sustainable development
- non-economic losses.

Box 5: Economic and non-economic losses⁴⁸

A standard definition of economic loss in the context of loss and damage is “financial loss to a business or person resulting from death, injury, disability, property damage or destruction caused by the negligent acts of a third party.”⁴⁹

At the recent SBI session in Bonn, Germany in May 2012, developing countries stated their understanding of what constitutes non-economic losses. In their closing statements at the meeting, Bolivia on behalf of the G77 and China and Timor-Leste on behalf of Least Developed Countries listed: territory, ecosystems, cultural heritage, values, livelihoods, local and indigenous knowledge, water availability, displacement, and other socio-economic losses.

48. Stabinsky D. 2012. Need for international mechanism on loss and damage, say developing countries. TWN Bonn News Update 27. 28 May.

49. <http://www.businessdictionary.com/definition/economic-loss.html#ixzz2C12uGn9a>

An International Mechanism on Compensation and Rehabilitation would address insurable loss and damage through existing or to-be-developed risk-transfer mechanisms. One role for the risk-transfer component of the International Mechanism would be the evaluation of existing risk-transfer approaches, including regional mechanisms: that is, are they providing adequate compensation for insurable loss and damage? It would also monitor the scope of risk-transfer approaches, as increases in severity and frequency of extreme events will test the ability of risk-transfer institutions to cover resulting loss and damage. Work under this component would support the expansion of successful efforts to other regions. The Mechanism would also explore the possibility of creating a risk-pooling mechanism, such as the International Insurance Pool proposed by AOSIS.

- Regional risk-transfer facilities, such as the Caribbean Catastrophe Risk Insurance Facility (CCRIF), have been highlighted in the work of regional meetings as institutions that address loss and damage. Further analysis is necessary to determine whether such facilities could be replicated in other regions. A serious assessment needs to be undertaken of the ability of risk-transfer mechanisms to address loss and damage caused by extreme climate events as they continue to increase in frequency and magnitude.
- AOSIS has proposed the establishment of an International Insurance Pool. "Some regions have limited access to commercial risk sharing and risk transfer products, and where there is insurance they are not affordable. [An] international mechanism that pools the risks from all vulnerable countries will bring benefits to all and must be coordinated at the international level."⁵⁰

An International Mechanism on Compensation and Rehabilitation would address uninsurable⁵¹ loss and damage in three ways:

- establishment of an international fund for compensation and rehabilitation. "[An international fund for rehabilitation and compensation is] needed to address the progressive negative impacts of climate

change, such as sea level rise, ocean acidification, increase sea and land temperature. Even with a range of new and innovative risk transfer mechanisms, loss and damage will remain and in many cases will be inevitable."⁵² The fund would be designed to compensate loss and damage from unavoidable adverse effects that cannot be covered by a risk transfer facility, including both extreme events that overwhelm the capacity of existing risk transfer facilities and slow-onset events that cannot be covered through risk transfer mechanisms.

Under some international environmental liability regimes, collective compensation arrangements, such as an international fund, have been created to provide alternative or supplementary compensation for victims.⁵³ Collective compensation arrangements are, to a large extent, the result of efforts made over time to overcome the limitations of insurance as a means of compensation payment guarantee.

- development and promotion of measures to address non-economic loss⁵⁴ and damage and lost sustainable development opportunities – for example, enhanced international financial support for social protection measures in developing countries that are particularly vulnerable to the adverse effects of climate change. This component addresses the deepest moral challenge of climate change and its disproportionate impact on the most vulnerable.
- development and promotion of financial measures that can be used in cases of catastrophic shocks to economies. This component will be designed to pro-actively co-ordinate debt relief, contributions to emergency trust funds, and other possible financial measures to assist states to deal with situations of catastrophic shock. One option may be to create a climate-disaster specific debt relief fund.

The International Mechanism on Compensation and Rehabilitation would be situated under the umbrella of the Convention and housed within the UNFCCC Secretariat, where administrative support could be provided, with support and guidance of a Board constituted by Party members and with involvement of stakeholders.⁵⁵

50. AOSIS. 2012. AOSIS views on loss and damage. Presentation to the SIDS expert meeting on loss and damage. 9 October. Bridgetown, Barbados.

51. The UNFCCC background paper (UNFCCC, 2012) provides some introduction to the limits of insurability, both with regard to slow-onset events and extreme events. "Traditional risk transfer approaches like loss-based insurance payouts may be unsuitable for longer-term foreseeable climate stressors like sea level rise and desertification. Two preconditions for insurability of disasters are the unpredictability of a specific event, which means that losses occur suddenly and cannot be foreseen; and the ability to spread the risk over time, regions and between individuals/entities. For two of the already ongoing changes caused by global warming, that is, sea-level rise and desertification, the 'insurability criteria' cannot be fulfilled."

52. AOSIS. 2012.

53. Convention on Biological Diversity, Executive Secretary. 2007. Supplementary collective compensation arrangements in international environment-related liability instruments. UNEP/CBD/BS/WG-L&R/4/INF/3. www.cbd.int/doc/meetings/bs/bswglr-04/information/bswglr-04-inf-03-en.pdf

54. The Barbados expert meeting concluded that more work is needed to identify non-economic loss and damage. Questions identified included: how to address loss of livelihoods and cultural values; how to preserve culture of relocated communities; how to "prepare with dignity"; what social protection measures must be developed and supported; what will happen to country sovereignty; how will definition of economic zone change?

55. Hoffmaister J P and D Stabinsky. 2012. Loss and damage: some key issues and considerations for SIDS expert meeting. Third World Network Briefing Paper on Loss and Damage 4. Penang: Third World Network.

5. Recommendations for COP18 and beyond

A comprehensive framework to **address loss and damage** under the UNFCCC would include:

- an International Mechanism on Compensation and Rehabilitation, established under the guidance of the Conference of the Parties
- global leadership and co-ordination carried out through the Adaptation Committee
- a continuing work programme on loss and damage under the SBI with active co-ordination and collaboration with the Adaptation Committee and the SBSTA.

Therefore, COP18 must:

- agree to establish an International Mechanism on Compensation and Rehabilitation for unavoided and unavoidable loss and damage
- agree a process to elaborate the modalities and procedures of the Mechanism, under the guidance of the COP, to become operational by COP20
- launch a second phase of the work programme on loss and damage under the SBI to elaborate the remaining elements of the comprehensive framework on loss and damage.

Design stages for the International Mechanism

The COP should establish a two-year work programme to design the modalities and procedures of the International Mechanism under the guidance and authority of the Conference of the Parties.

The first year of work would revolve around addressing a series of questions, facilitated by submissions from Parties and with technical papers prepared by the Secretariat. There would also be a series of workshops to review the technical papers and submissions and provide recommendations on each of the elements.

The body implementing the programme of work would then report to COP19. There, progress on defining the

essential elements of the Mechanism would be reviewed. COP19 would also elaborate the work needed to develop modalities and procedures so that the Mechanism could be operationalised by a COP20 decision.

There are at least three institutional bodies that could carry out a work programme to develop modalities and procedures for the International Mechanism:

- A work programme could be constituted directly under the COP. This was the approach chosen by COP17 for addressing long-term finance. The President of the Conference of the Parties would appoint two co-chairs to carry forward the work. This is the preferred option.
- The Adaptation Committee could be tasked with developing modalities and procedures and provide the results of its work as recommendations to the COP.
- The work could be remitted by the Conference of the Parties to the Subsidiary Body for Implementation, in conjunction with a second phase of the work programme on loss and damage.

A fourth option would be to create a work programme under Workstream 1 of the Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP), although the timeframe under which the ADP is operating is not ideal for achieving an operational Mechanism by COP20.

Questions for the work programme

In order to develop the four compensation and rehabilitation elements of the International Mechanism on Compensation and Rehabilitation, the work programme must address the following questions.

1. Insurance and other risk-transfer approaches such as catastrophe bonds⁵⁶ can provide compensation and rehabilitation funds in certain situations.

56. A high-yield debt instrument that is usually insurance linked and meant to raise money in case of a catastrophe such as a hurricane or earthquake. <http://www.investopedia.com/terms/c/catastrophebond.asp#axzz2C7OHGZo8>

In developing the Mechanism, detailed understanding is necessary of the applicability of risk-transfer options and their limitations.

- The work programme must review the latest trends in insurability with respect to climate-related events to gain a better understanding of the limits and limitations of traditional insurance and other risk-transfer approaches. The background paper from 2003⁵⁷ can be updated in light of this new research. Alternative non-market instruments that ensure or encourage social protection measures should also be reviewed in this context.
 - The work programme must review risk-transfer options applicable at a regional level, through a technical review of existing regional facilities such as the CCRIF. This would clarify the barriers to establishing such facilities in other regions as well as identifying the limitations of such risk-transfer approaches for addressing economic loss and damage in developing countries particularly vulnerable to the adverse effects of climate change.
 - More information and consideration is needed on how insurance and non-insurance tools may be employed to manage adverse effects from slow-onset processes, while longer-term solutions to slow-onset disasters are being explored.
2. Further evaluation of existing fund models is necessary in order to design the Fund for Compensation and Rehabilitation. The work programme should review existing models for compensation funds, such as the Disaster Trust Fund of the Cook Islands and the Oil Spill Compensation Fund. The review should include, *inter alia*, differences in modalities and procedures, governance, sources of funding, timelines, procedures, and forums for submitting claims.
 3. More understanding is needed of options for the assessment, compensation or rehabilitation of non-economic losses in the context of climate change. External support for enhanced social protection measures and other risk retention approaches have been mentioned as ways of compensating for non-economic losses and the adverse effects of climate change on long-term sustainable development. The work programme should explore how various options might be integrated into an International Mechanism on Compensation and Rehabilitation, and the range of funding options identified.
 4. More understanding is needed of possible financial measures that would be effective in the case of

catastrophic shocks to economies. A review of possible measures should include considering the feasibility of a specific climate disaster debt relief fund. The 2008 technical paper on mechanisms to manage financial risks should be updated as part of this work.⁵⁸

As noted above, for each of these elements, the Secretariat should be requested to prepare one or more technical papers for consideration by the work programme. Parties should also be invited to make submissions on each of the topics. One or more technical expert meetings should be held prior to COP19 to consider the content of the technical papers as well as country submissions in order to address these questions.

Two additional studies, developed as technical papers, would provide the context in which the work programme could consider the scale of Parties' financial contributions to the Mechanism.

- a comparison of costs of the mitigation action required to prevent loss and damage versus the increased costs of loss and damage in the absence of the immediate and substantial mitigation action needed
- a review of historical responsibility for action and inaction.

Further work to enhance the comprehensive framework on loss and damage

Existing Convention bodies will be the backbone of a comprehensive framework on loss and damage, as illustrated in Figure 2 on page 20. Therefore the Subsidiary Body, the Adaptation Committee and the SBSTA will need to undertake additional work to enhance their contributions to the comprehensive framework.

Subsidiary Body for Implementation

- The COP should establish a second phase of the work programme on loss and damage under the SBI, to further work on:
 - assessment of loss and damage at national level, in particular with regard to slow-onset events
 - approaches to address slow-onset events
- The SBI should convene a special thematic workshop at SB38 in June 2013, in conjunction with the SBSTA through its standing agenda item on research and systematic observation, to elaborate research needed on slow-onset events, tipping elements and state changes.

57. Linnerooth-Bayer J M J Mace and R Verheyen. 2003. Insurance-related actions and risk assessment in the context of the UNFCCC. Background paper for UNFCCC.

58. UNFCCC. 2008. Mechanisms to manage financial risks from direct impacts of climate change in developing countries. FCCC/TP/2008/9.

- The SBI, in collaboration with the Adaptation Committee, should identify needs at national level for integrating planning for slow-onset disasters into national adaptation planning and implementation processes.

Adaptation Committee

- The Adaptation Committee, in collaboration with the Standing Committee under its mandate for co-ordination of finance under the UNFCCC, should review the adequacy and predictability of climate finance in the context of avoidable loss and damage.
- The Adaptation Committee, in collaboration with the SBSTA through its Nairobi work programme on impacts, adaptation and vulnerability, should initiate a workstream on migration, displacement and planned relocation. This workstream should investigate where climate change impacts are already causing migration and planned relocation and the institutions that are facilitating planned relocation. The Adaptation Committee should invite collaboration with international institutions involved in planned relocation, including but not limited to the World Food Programme, the UN High Commissioner for Refugees, and the International Organization for Migration.
- The Adaptation Committee should be charged with integrating into its 3-year work plan responsibilities under the comprehensive framework on loss and damage related to co-operation and collaboration

with global and regional bodies. These responsibilities should include co-ordination with regional centres on approaches to address loss and damage in developing countries particularly vulnerable to the adverse effects of climate change. The Adaptation Committee should also include in its work plan the convening of joint discussions on climate change-induced displacement, migration and planned relocation with the UN High Commissioner for Refugees, the International Organization for Migration, and the World Food Programme.

- The Adaptation Committee should undertake consultations with actors outside of the UNFCCC including, but not limited to, international financial institutions, to identify financial measures that could assist countries in coping with loss and damage.

Subsidiary Body for Scientific and Technological Advice

- Work under the SBSTA, in the context of ongoing work under Article 5 on research and systematic observation, is needed to enhance scientific understanding of slow-onset impacts, permanent state shifts, and tipping elements as related to loss and damage in developing countries particularly vulnerable to the adverse effects of climate change. A goal of this work may be to explore and identify early warning mechanisms for the potential triggering of key tipping points.

A young child by a dried river bed near the Deouli food and cash for work site, Tahoua region, Niger.
(Credit: UN Photo/WFP/Phil Behan).



5. Conclusion

Climate change impacts are already causing severe loss and damage in developing countries. As the pace of climate change increases, so will the level of loss and damage. Ignoring these basic facts will not make the problem go away.

Now is the time for bold leadership and urgent action to face current climate realities.

This report offers information, food for thought, and a possible way forward on the issue of loss and damage under the UNFCCC. But ultimately what we need at this moment is collective action to face and redress the problem of climate change. Any delay only makes things worse. As the scientific community reminds us – on a daily basis – we have no more time left to lose.

Annex I: Legal obligations under the UNFCCC

The text of the legal obligations under the UNFCCC that have been cited in this report is as follows:

Article 3.1: “The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof.”

Article 3.2: “The specific needs and special circumstances of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change, and of those Parties, especially developing country Parties, that would have to bear a disproportionate or abnormal burden under the Convention, should be given full consideration.”

Article 3.3: “The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. ...”

Article 3.4: “The Parties have a right to, and should, promote sustainable development. Policies and measures to protect the climate system against human-induced change should be appropriate for the specific conditions of each Party and should be integrated with national development programmes, taking into account that economic development is essential for adopting measures to address climate change.”

Article 4.1: “All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall:

(b): ... formulate, implement, publish and regularly update national and, where appropriate regional programmes containing ... measures to facilitate adequate adaptation to climate change;

(e): ... cooperate in preparing for adaptation to the impacts of climate change; develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas, particularly in Africa, affected by drought and desertification, as well as floods;”

Article 4.3: “The developed country Parties and other developed Parties included in Annex II shall provide new and additional financial resources ... including for the transfer of technology, needed by the developing country Parties to meet the agreed full incremental costs of implementing measures that are covered by paragraph 1 of this Article ... The implementation of these

commitments shall take into account the need for adequacy and predictability in the flow of funds and the importance of appropriate burden sharing among the developed country Parties.”

Article 4.4: “The developed country Parties and other developed Parties included in Annex II shall also assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects.”

Article 4.5: “The developed country Parties and other developed Parties included in Annex II shall take all practicable steps to promote facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention. In this process, the developed country Parties shall support the development and enhancement of endogenous capacities and technologies of developing country Parties. Other Parties and organizations in a position to do so may also assist in facilitating the transfer of such technologies.”

Article 4.7: “The extent to which developing country Parties will effectively implement their commitments under the Convention will depend on the effective implementation by developed country Parties of their commitments under the Convention related to financial resources and transfer of technology and will take fully into account that economic and social development and poverty eradication are the first and overriding priorities of the developing country Parties.”

Article 4.8: “In the implementation of the commitments in this Article, the Parties shall give full consideration to what actions are necessary under the Convention, including actions related to funding, insurance and the transfer of technology, to meet the specific needs and concerns of developing country Parties arising from the adverse effects of climate change ... especially on:

- (a) small island countries;
- (b) countries with low-lying coastal areas;
- (c) countries with arid and semi-arid areas, forested areas and areas liable to forest decay;
- (d) countries with areas prone to natural disasters;
- (e) countries with areas liable to drought and desertification;
- (f) countries with areas of high urban atmospheric pollution;
- (g) countries with areas with fragile ecosystems, including mountainous ecosystems; ... and
- (i) landlocked and transit countries.

Further, the Conference of the Parties may take actions, as appropriate with respect to this paragraph.”

Annex II: Recommendations for decision text in Doha

Reaffirming the objective and principles of the Convention, including the principle that developed country Parties should take the lead in combating climate change and the adverse effects thereof,

Recognising that loss and damage resulting from the adverse effects of climate change is first and foremost the result of insufficient mitigation actions,

Noting the findings of the recent IPCC report on **Managing the risks of extreme events and disasters to advance climate change adaptation**, including evidence that some extremes have changed as a result of anthropogenic influences, including increases in atmospheric concentrations of greenhouse gases,

Cognizant of the historical responsibility of Annex I Parties for those emissions that are causing and will cause loss and damage in developing countries that are particularly vulnerable to the adverse effects of climate change,

Cognizant also of the commitments of Annex II Parties under Article 4.4 to assist developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting the costs of adaptation to those adverse effects, and noting that adaptation is a means to prevent or reduce loss and damage,

Recalling decisions 1/CP.13, 1/CP.16 and 7/CP.17,

Recognising that slow-onset processes represent a growing threat to lives, livelihoods, water supplies, ecosystems, territories and economies,

Recognising also that loss and damage will take the form of both economic and non-economic losses, including loss of cultural heritage, values, and ecosystems,

Recognising also that loss and damage resulting from the adverse effects of climate change is likely to undermine long-term sustainable development opportunities and therefore poses a threat to the right to sustainable development,

Acknowledging that the UNFCCC is the relevant policy forum and as such should drive discussions on measures to assist developing countries that are particularly vulnerable to the adverse effects of climate change in coping with loss and damage, including measures for the

compensation and rehabilitation of loss and damage,

Further acknowledging that there is a need to systematically and effectively address loss and damage in developing countries that are particularly vulnerable to the adverse effects of climate change, in a coherent and co-ordinated manner, at global and regional levels,

1. **Decides** to establish an International Mechanism on Compensation and Rehabilitation for loss and damage in developing countries that are particularly vulnerable to the adverse effects of climate change, hereinafter referred to as the International Mechanism on Compensation and Rehabilitation or the Mechanism;
2. **Decides** to undertake a work programme to elaborate the procedures and modalities of the International Mechanism on Compensation and Rehabilitation, to enable the Mechanism to become operational by COP20;
3. **Invites** the President of the Conference of the Parties to appoint two co-chairs, one from a developing country Party and one from a developed country Party, for the work programme mentioned in paragraph 2 above;
4. **Requests** the co-chairs to provide to the Conference of the Parties, for approval at its nineteenth session, detailed procedures of and modalities for the International Mechanism on Compensation and Rehabilitation;
5. **Decides** that the functions of the International Mechanism on Compensation and Rehabilitation shall be to:
 - a. provide international oversight and coherence for risk-transfer approaches to address insurable loss and damage
 - b. create and operate a compensation and rehabilitation fund to address loss and damage not amenable to insurance and other risk-transfer mechanisms
 - c. develop and implement measures to address non-economic loss
 - d. develop and promote the use of financial measures, possibly including emergency trust funds, to support developing countries that are particularly vulnerable to the adverse effects of climate change in cases of catastrophic shocks to economies from extreme or slow-onset events;
6. **Decides** that the Subsidiary Body for Implementation, under its work programme on loss and damage,

shall contribute substantively to the work programme on the International Mechanism on Compensation and Rehabilitation, upon request of the co-chairs of the work programme on the Mechanism;

7. **Decides** also that the Subsidiary Body for Implementation, under its work programme on loss and damage, shall elaborate the elements of a comprehensive framework on loss and damage under the Convention which shall, *inter alia*:
 - a. provide institutional support for and systematic co-ordination of efforts towards the prevention and avoidance of loss and damage
 - b. provide co-ordination for efforts under the Convention to understand and address the impacts

of slow-onset events, and

- c. provide institutional leadership and global co-ordination of efforts to address loss and damage, including through ensuring coherence and co-operation with the work of regional centres and other intergovernmental bodies, including *inter alia*, the International Organization of Migration and the United Nations Office for Co-ordination of Humanitarian Affairs;
8. **Decides** that once established, the International Mechanism on Compensation and Rehabilitation shall be considered an element of the comprehensive framework on loss and damage.

This report has been funded in part by Danida and UKaid from the Department for International Development (DFID). Content and opinions expressed are solely those of the authors on behalf of ActionAid International, CARE International and WWF International.

The briefing paper was compiled by Doreen Stabinsky (Professor, College of the Atlantic, USA) with input provided by Harjeet Singh (ActionAid International), Kit Vaughan (CARE international), Sandeep Chamling Rai (WWF International) and Joanna Phillips (WWF UK).

Feedback and comments on the content and recommendations in this report are appreciated and welcome. Please contact Harjeet Singh Harjeet.Singh@actionaid.org, Kit Vaughan kvaughan@careclimatechange.org or Sandeep Chamling Rai scrai@wwf.sg. For media enquiries contact Jo Barrett (CARE International) jbarrett@careclimatechange.org

ActionAid

ActionAid is a partnership between people in rich and poor countries, dedicated to ending poverty and injustice. We work with people all over the world to fight hunger and disease, seek justice and education for women, hold companies and governments accountable, and cope with emergencies in over 40 countries. Visit: www.actionaid.org

ActionAid International Secretariat

Postnet Suite 248
Private Bag X31
Saxonwold 2132
Johannesburg
South Africa
Telephone: +27 11 731 4500
Email: mailjhb@actionaid.org
Website: www.actionaid.org

ActionAid International is registered no. 27264198

CARE International

Founded in 1945 with the creation of the CARE Package, CARE is a leading humanitarian organization fighting global poverty. CARE places special focus on working alongside poor girls and women because, equipped with the proper resources, they have the power to lift whole families and entire communities out of poverty. CARE is helping the most world's most vulnerable communities adapt to the impacts of climate change. Last year CARE worked in 84 countries and reached 122 million people around the world. To learn more about CARE's work on climate change, visit www.careclimatechange.org

CARE International

Chemin de Balexert 7-9
1219 Chatelaine (Geneva)
Switzerland
Tel.: +41 22 795 10 20
www.care-international.org
cisecretariat@careinternational.org

WWF

WWF is one of the world's largest and most respected independent conservation organizations, with over 5 million supporters and a global network active in over 100 countries. WWF's mission is to stop the degradation of the earth's natural environment and to build a future in which humans live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption. www.panda.org/news for latest news and media resources.

WWF International

Global Climate and Energy Initiative
Avenue du Mont-Blanc
1196 Gland, Switzerland
www.panda.org/energyreport

actionaid



Bangladesh
(Credit: © 2007 Bill Dowell/CARE).

