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Briefing Paper 1

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Loss and damage: confronting and addressing the new burden for developing countries

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Loss and damage due to climate change is occurring now. It results from actual climate impacts, not from underlying or inherent vulnerabilities. Loss and damage from the adverse effects of climate change creates a new, serious and growing challenge for developing countries in their efforts to achieve sustainable development and eradicate poverty. Negotiations in Doha must fill the gaps in institutional and legal frameworks to address loss and damage, including through an institutional mechanism to address slow-onset impacts and other unavoidable damages.

In this briefing paper we begin by outlining the legal context for international action to address loss and damage under the UN Framework Convention on Climate Change (UNFCCC). We then provide a fuller introduction to the concept of loss and damage, including an explanation of slow-onset processes. Next we review the most important and difficult issues that must be addressed and ultimately resolved under the work programme. Finally, we offer conclusions on the role of the Convention on loss and damage and recommendations for the COP18 outcome.

1. Loss and Damage and the need for international action

Loss and damage is not hypothetical. It is happening today, undermining progress towards sustainable development. Moreover, the amount of committed warming that will result from historical greenhouse gas emissions currently in the atmosphere ensures that global temperatures will continue to rise over the next few decades, regardless of what action countries take now to curtail emissions. This committed warming then ensures that loss and damage, and the threat to sustainable development, will continue to be the new reality for developing countries.

Two important principles of international law – the no-harm rule and state responsibility – establish legal obligations for historically responsible parties to take action now to address loss and damage. Under the no-harm rule of customary international law, 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.*"[1] Once the no-harm rule is breached, the law of state responsibility obliges the state to "*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.*"'[2]

Loss and damage requires immediate action by the international community, and above all, action by developed countries. It is now up to developed states to assume their collective responsibilities for current and committed warming to address the loss and damage resulting from that warming. The UNFCCC is the policy-relevant forum to undertake this work. **Loss and damage under the UNFCCC**

[1] 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.
[2] Verheyen and Roderick, 2008, citing the International Law Commission.

In decision 1/CP.16, Parties recognized "*the need to strengthen international cooperation and expertise in order to understand and reduce loss and damage associated with the adverse effects of climate change, including impacts related to extreme weather events and slow onset events.*"[3] In recognition of this need, Parties established a work programme on loss and damage under the Subsidiary Body for Implementation (SBI) 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.*"[4]

Decision 7/CP.17 further refined the content of this first phase of the work programme. The decision invites Parties and other stakeholders to take into consideration three thematic areas related to enhancing understanding of and addressing loss and damage.[5] These thematic areas became sequential organizing themes for the development of the work programme in 2012. The decision reiterates "*the need to explore a range of possible approaches and potential mechanisms, including an international mechanism, to address loss and damage, with a view to making recommendations on loss and damage to the Conference of the Parties for its consideration at its eighteenth session, including elaborating the elements set out in decision 1/CP.16, paragraph 28(a-d).*"

The elements outlined in the Cancún decision for consideration by the work programme were:

(a) possible development of a climate risk insurance facility to address impacts associated with severe weather events;
(b) options for risk management and reduction, risk sharing and transfer mechanisms such as insurance, including options for micro-insurance, and resilience-building, including through economic diversification;
(c) approaches for addressing rehabilitation measures associated with slow onset events;
(d) engagement of stakeholders with relevant specialized expertise.[6]

The understanding achieved in Cancún provided an important platform for the work over the last two years. These elements must be assessed as the SBI provides mandated recommendations to COP at this session. The SBI, in carrying out the assessment and review of the effective implementation of the Convention, should consider these elements agreed under the work programme to determine progress in its implementation and to advance the understanding of loss and damage. Further to these elements, we identify below other concepts explored during the last two years of the work programme that can help build an understanding of loss and damage.

2. Understanding and addressing loss and damage

The phrase "loss and damage" refers broadly to the entire range of damage and permanent loss "*associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change*"[7] that can no longer be avoided through mitigation nor can be avoided through adaptation.[8]

According to the working glossary for the loss and damage regional meetings, ""*damage" might be though of as negative impacts that can be repaired or restored (such as windstorm damage to the roof of a building, or damage to a coastal mangrove forest from coastal surges which affect villages). "Loss" might be thought of as those negative impacts that cannot be repaired*

[3] Slow-onset events are described in a footnote to the decision as "including sea level rise, increasing temperatures, ocean acidification, glacial retreat and related impacts, salinization, land and forest degradation, loss of biodiversity and desertification." We address slow-onset events in greater detail later in this briefing paper.
[4] Decision 1/CP16.
[5] The three thematic areas are: 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; and 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.
[6] Decision 1/CP.16, paragraph 28 a-d.
[7] Decision 1/CP.13, para 1(c)(iii)
[8] The background paper prepared by the Secretariat on the range of approaches to address loss and damage uses the following definition for loss and damage: "*the actual and/or potential manifestation of impacts associated with climate change in developing countries that negatively affect human and natural systems.*"

or restored (such as loss of geological freshwater sources related to glacial melt or desertification, or loss of culture or heritage associated with potential population redistribution away from areas that become less habitable over time with climate change)."[9]

In this section we elaborate on these definitions in order to provide a more sophisticated and nuanced understanding of loss and damage to be able to more accurately identify the actions required to address it. We conclude the section with a brief description and analysis of existing approaches to address loss and damage.

Loss and damage results from a diverse range of climate change impacts. Climate impacts that cause loss and damage include extreme events, slow-onset change and state shifts (see Box 1 for examples). Extreme events are the most familiar manifestations of climate change, and most of the research and policy attention to date has focused on these types of events. For example, the Intergovernmental Panel on Climate Change (IPCC) released a special report in 2012 on "Managing the risks of extreme events and disasters to advance climate change adaptation," or the SREX report.

In the longer term, however, much more loss and damage will result from slow-onset changes, such as sea level rise, ocean acidification and desertification. Permanent shifts in climate, or state shifts, will also lead to significant, irremediable loss.

Slow-onset events, as noted in decision 1/CP.16, include sea level rise, increasing temperatures, ocean acidification, glacial retreat and related impacts, salinization, land and forest degradation, loss of biodiversity and desertification. "Slow-onset events" are more appropriately termed slow-onset **impacts**, **hazards**, or **disasters**.

Because the Earth is slow to warm, historical emissions will cause warming, and a continuation of slow-onset impacts, for decades to come – even if all emissions are halted immediately. Slow-onset temperature rise and other related climate impacts can also have other serious knock-on consequences in earth systems, such as state shifts – permanent shifts in climate and ecosystem characteristics – or causing tipping elements in the earth's climate system to be surpassed. Such abrupt and non-linear changes may happen at the global level, but can also happen at regional levels, such as the state shift to a much more arid climate predicted for the south-western U.S. and northern Mexico.

Box 1: Types of climatic events and changes causing loss and damage

Extreme events	Slow-onset changes	State shifts
Cyclones, hurricanes, and other extreme precipitation events leading to floods, landslides, and associated loss of productive land and loss of property and life. Heat waves leading to crop loss and loss of life. Short-term droughts resulting from reduced seasonal precipitation levels.	Slow-onset temperature rise, leading to increased evaporation of freshwater sources, melting glaciers, loss of soil moisture and associated reduction in growing season length, increase in heat extremes affecting crop production and suitability of lands for human and animal life, increased sea surface temperatures with impacts ranging from changes in precipitation distribution on landmasses, loss of marine biodiversity, and coral reef bleaching. Sea level rise, leading to loss of territory, saltwater intrusion and contamination of freshwater aquifers, loss of protective barriers such as embankments and mangroves, and salinization of coastal productive lands.	Permanent shifts in mean climate (precipitation and temperature regimes), leading to impacts such as changed ecosystem characteristics, species loss, and long-term drought.

Loss and damage results from climate impacts, not inherent vulnerabilities. Vulnerability and risk drivers are not the cause of losses: loss and damage result from climate impacts. Damage and loss can be exacerbated

[9] Background glossary to the regional 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.

due to underlying vulnerabilities, but vulnerability is not the cause of drought or sea level rise. If an old person slowly crossing a street is hit by a car, they are hurt by the car, not by their underlying vulnerability of being old and walking slowly.

Climate change impacts lead to a wide range of permanent loss and damage. The wide spectrum of *"loss (those 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)"*[10] includes both **economic** and **non-economic** losses. Examples of economic losses include structural damage from floods or hurricanes, or crop loss due to drought or extreme heat. Non-economic losses include cultural loss, loss of livelihoods or territory, or species extinction.

Damage and permanent loss from climate change derive both from **direct harm** (i.e., the direct costs of actual unavoidable harms) and **forgone development** (i.e., the costs of lost and diminished opportunities in developing countries, caused by having to forego development options) from extreme events and slow-onset events.

Loss and damage is an issue of equity. It creates a challenge for developing countries to achieve sustainable development and poverty eradication. The countries vulnerable to loss and damage are not responsible for the climate change that is destroying lives and livelihoods, yet their prospects to achieve poverty eradication and other development goals are constantly undermined by extreme and slow onset impacts of climate change. These few examples below are illustrative, not exhaustive, and similar stories can be told from developing countries in every region of the world:

- Widespread flooding in **Pakistan** in 2010 affected 20 million people, killing 1781, displacing millions, and damaging 1.6 million homes. The World Bank places the cost of damages at $10 billion ($5b in the agriculture sector) while the estimated recovery and reconstruction needs range from $6.7b to $8.9b. As well as damage to infrastructure, which affected governance, education, energy, business and communications, the flooding led to widespread health risks from malaria, cholera, and severe malnutrition. With the economy heavily dependent on agriculture, the economic impacts are grave: 5.3m jobs were lost according to the ILO; growth dropped from a predicted 4.5% to -2%/-5%; and the $55b IMF debt will grow as Pakistan is forced to borrow in order to recover.
- **Andean glaciers** are rapidly receding, and will continue due to slow-onset temperature rise, with significant near-term impacts, including impacts on mountain ecosystems, on water supplies for major cities, and on farmers' livelihoods and food security in Peru, Ecuador and Bolivia. As with other slow-onset impacts, such as sea level rise and the associated salinization of aquifers, where access to fresh water is slowly eroded, the right to development is at the same time actively undermined. Rather than increasing options to improve livelihoods, life in mountain areas becomes more and more unviable.
- **In Syria**, increased desertification threatens food, water, and job security. Across the region agriculture will continue to bear the brunt of the impacts of desertification, with IFPRI estimating an additional $241m per year needed to counteract the effects on nutrition. The FAO says that in Syria, 79% of the population is at risk from desertification and that the projected agricultural production capacity is likely to decrease by 16% in coming years. Given that agriculture provides 30% of the workforce with employment and 25% of the country's GDP, this drop in productivity is extremely worrying: there is already 26% youth unemployment.
- The 2010 hurricane season in the **Caribbean** was the third most active hurricane season on record, with most number of named storms, according to historical records. The economic impact on the region became unmanageable, requiring countries to look for support outside existing regional risk management mechanisms, such as the Caribbean Catastrophe Risk Insurance Facility (CCRIF). In the case of **St. Lucia,** for example, total damage after Hurricane Tomas was estimated at about 34% of its total GDP, and the

[10] UNFCCC, 2012. UNFCCC Background paper to the SIDS 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 on set processes.
http://unfccc.int/files/adaptation/cancun_adaptation_framework/loss_and_damage/application/pdf/literature_review_barbados.pdf

country sought immediate assistance nearing US$8.2 million in the form of loans through the Rapid Credit Facility and the Emergency Natural Disaster Assistance of the International Monetary Fund.

Loss and damage is the result of insufficient mitigation by Annex I Parties and inadequate support by Annex I Parties for mitigation and adaptation in non-Annex I Parties. Loss and damage is caused by the failure to reach the objective of the Convention to stabilize greenhouse gas emissions, and the failure to provide adequate means of implementation to enable developing countries to address and implement their needs under Convention. Insufficient mitigation under the Convention, including low ambition under the Kyoto Protocol, means that atmospheric concentrations of greenhouse gases have not been stabilized in 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. Addressing loss and damage is a response to the unavoidable impacts of climate change due to historical and current emissions.[11]

Addressing loss and damage

There are multiple approaches to address loss and damage. Some approaches may have synergies with adaptation efforts, while others will require taking action through new arrangements and stand-alone approaches. Parties have reviewed a range of existing approaches to address loss and damage during the series of expert meetings over the past six months. One important outcome of the process has been to identify gaps in these existing approaches. Four types of approaches have been considered under the work programme:

- risk reduction
- risk retention
- risk transfer and
- approaches to address slow onset climatic events

Risk reduction is defined by the United Nations International Strategy for Disaster Reduction (UNISDR) as "*the concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.*"[12] The background paper for the regional expert meetings on loss and damage notes that "*risk reduction measures could be applied with good results for things like frequent storms that may cause annual flooding, recurring small scale droughts, and regular wind storms that may cause minor damage.*"[13]

Risk retention, according to the background glossary for the expert meetings, includes a range of "*financial resources for building resilience, rebuilding & getting through crises*" that include social funds, emergency assistance loans, emergency services, humanitarian assistance such as food aid, reconstruction, and rehabilitation. Governments may provide the finance themselves, as a type of self-insurance, or they may rely on international assistance. Risk retention may be planned or it may be inadvertent and unintentional.

Clearly "self-insured" risk retention, where countries would take on the entire financial burden of damage and loss in their own national budgets, is not an option for many countries. Developing countries are turning to the Convention to address the question of loss and damage precisely because *self-insured* risk retention is not an option for them. An example of a risk retention option *funded by responsible states* would be the proposed international mechanism for compensation and rehabilitation.

Risk transfer is a broad category of mechanisms to transfer the cost of damage and loss to a third party, usually through some form of insurance.[14] There is potential for risk transfer and other risk-sharing mechanisms like

[11] Addressing the consequences of insufficient mitigation does not in any way exempt Parties from continuing to undertake actions for the implementation of the Convention. In addition, action and support to address loss and damage does not waive the responsibility of states to "ensure that activities within their jurisdiction and control respect the environment of other states or of areas beyond national control" under international law.

[12] www.unisdr.org/we/inform/terminology

[13] UNFCCC, 2012.

[14] The background glossary for the regional expert meetings lists a range of risk transfer approaches: traditional insurance, micro-insurance, reserve fund, risk pooling, insurance-linked securities, and catastrophe bonds.

insurance to address a subset of losses and damage. For example, a number of organizations are trying to design insurance products that can reach and benefit the poorest agriculturalists, such as weather index-based insurance. However insurance works best for low probability, high impact events. Insuring climate risks becomes less and less tenable when events become more frequent (non-stationarity), as premiums will rise accordingly. More frequent droughts, or high temperatures that kill crops or livestock, will become less and less insurable as these events increase in frequency with the rise in global temperature.

Losses and damage from slow-onset impacts and state shifts are distinct threats requiring new types of approaches. The inability of existing approaches – risk reduction, risk retention, or risk transfer – to adequately address the progressive and unrelenting changes anticipated with slow onset hazards was one of the most important and pressing gaps identified during the expert meetings. We address this gap in more detail in the next section.

3. Key issues that must be addressed under the work programme

The work programme established in Cancún created a space for Parties to begin considering 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. As part of this work, the COP agreed to carry out workshops, expert meetings, and consider Party submissions. For the first time, the work programme will be making recommendations to the COP.

Under the work programme, there are a number of key topics that Parties have begun to consider, or that remain to be addressed by the work programme, that merit attention here and that should provide context and content for the decision to be take at COP18:

Loss and damage represents a challenge to sustainable development and poverty eradication, however current approaches to address loss and damage are not sufficient to address impacts on sustainable development. Loss and damage undermines the ability of developing countries to access necessary resources as these become under stress or as existing resources are diverted to recover from climate change impacts.

Economic and non-economic losses both represent lost development opportunities and a threat to the right to development. Much attention has gone into the traditional approaches to risk management to address economic losses, but the work programme needs to redouble efforts to understand approaches to address non-economic losses, including impacts on sustainable development.

At the heart of the challenge of loss and damage is addressing the needs and aspirations of communities and people, who have contributed least to the causes of climate change, yet are among its first and worst victims. Indigenous peoples and local communities are harmed by changing ecosystems and threats to traditional livelihoods, while farmers and farming communities often dependent on rain-fed agriculture could experience massive drops in production leaving millions without food.

There are significant and serious limits to adaptation, particularly to slow-onset impacts. 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 provide drinking water for people living there. Adaptation will become impossible on low-lying islands and in the most arid regions, leading to permanent loss of lands, livelihoods, and cultural resources.

Extreme events and slow-onset impacts together are surpassing the capacities of countries to cope, and the associated losses and damage require new approaches.

Slow onset events will pose grave challenges to many, many systems and current approaches to address loss and damage are insufficient to address slow onset disasters. Slow-onset events will have significant and wide-ranging impacts on people's lives and livelihoods and are irreversible in our lifetimes if temperatures continue to rise.

Because slow-onset impacts are persistent and develop over time, they are not amenable to many of the approaches currently under consideration for addressing extreme events, such as index-based insurance. Risk reduction, like adaptation, becomes impossible after a certain point, for example, when territory becomes uninhabitable. Migration and planned relocation are only coping mechanisms in that situation.

Parties will need to undertake further work under the Convention to enhance the understanding of slow-onset processes, the types of loss and damage associated with various types of slow-onset impacts, and how these impacts might be addressed in multiple contexts. Moreover, the need to enhance coordination and cooperation in assessing and addressing slow-onset impacts points to the need for special consideration both under the governance mechanisms of the UNFCCC and within other regional and multilateral institutions.

The mandate of the work programme requires Parties to look at both approaches for dealing with climate change-related extreme weather events and slow-onset hazards. However, up to this point, the work programme has given much more consideration to the issues raised by extreme events. This deficiency in identifying and evaluating approaches to address slow-onset events must be recognized in the work moving forward under the Convention after COP18 and systematically addressed.

The potential for large-scale economic disruption brought on by slow-onset climate change hazards will require significant coordination of international trade and investment flows. Addressing loss and damage resulting from slow-onset processes, in the context of sustainable development, will require different approaches than those used to address financial shocks resulting from extreme events. For example, slow-onset impacts may permanently diminish the tourism industry in many developing countries due to the loss of ecosystems, animal and plant diversity, and other tourist-attracting resources (for example, rainforests, coral reefs and glaciers). Such issues need to be part of the consideration of slow-onset impacts.

There are limitations to humanitarian approaches to respond to disasters. Traditional approaches to respond to emergencies, particularly at the international level (pledge-based responses, ad hoc bilateral support for recovery, concessional loans, etc.), are not sufficient to address recurrent loss and damage.

The work programme must consider relevant experience on financial and other measures to assist developing countries affected by extreme losses, such as debt relief, concessional loans, etc. One example to consider is the international response to the devastating earthquake in Haiti in January 2010, when the IMF established a Post-Catastrophe Debt Relief (PCDR) Trust, allowing the Fund to join international debt relief efforts. Debt relief and similar concessions can free up additional resources to meet exceptional balance of payments needs created by the disaster and the recovery, complementing direct financing at preferential terms and in some instances concessional liquidity support.

Migration must be addressed in the context of loss and damage. The needs of climate migrants require appropriate consideration. Existing international frameworks dealing with issues of displacement and migration will need to be expanded to handle movement resulting from the pressures imposed by slow-onset processes. Many people will be forced to move from areas affected by permanent changes to the ecosystems and other resources on which they depend for their lives and livelihoods. Adequate provisions will need to be designed in collaboration with relevant international institutions to consider how to address the issue of migration, displacement, and population distribution.

4. Addressing the role of the Convention and recommendations for a COP18 outcome on loss and damage

The Convention is the global, policy relevant, forum for addressing climate change. It is mandated to provide governance at the global level and to strengthen coherence and coordination among key players. It provides a forum for parties to share experience and provides guidance on addressing and responding to specific climate change-related issues.

Cognizant of these general roles of the Convention, it is then possible to elaborate the role of the Convention with respect to loss and damage. The Convention should serve to:

- Provide leadership and build trust amongst stakeholders;
- Ensure approaches to loss and damage are sufficient to address the risks being faced by vulnerable communities; and
- Provide incentives and coordination for appropriate policy responses including, but not restricted to:
    - drawing together the types of expertise required;
    - facilitating access to means of implementation including long-term finance and technical and capacity needs; and
    - facilitating assessments to inform decisions.

To actively accomplish this role, there is a need to set up an institutional framework that operates at three levels (global, regional, national), linked with external institutions such as IOM and UN OCHA.

With regard to loss and damage, the Convention should also facilitate specific, action-oriented guidance to address:

- national planning
- slow onset events
- synergy with adaptation
- insurance
- migration
- non-economic losses.

Recommendations for COP18 on loss and damage

Loss and damage is the unfortunate result of insufficient ambition in addressing the historical accumulation of greenhouse gases in the atmosphere and in achieving the objective of the Convention. More unfortunately, climate change impacts are likely to be most damaging and costly in those countries with least or no responsibility for the greenhouse gas emissions already leading to a changing climate.

Negotiations in Doha must focus on filling the existing gaps in institutional and legal frameworks to address loss and damage, including through an institutional mechanism to address slow-onset impacts and other unavoidable damages. Addressing loss and damage will require international-level action, as well as action coordinated at regional level.

The COP18 outcome on loss and damage should establish a permanent process to address loss and damage, including by:

- establishing an international mechanism on loss and damage;
- continuing the work programme with focus on some of the key matters identified in this document;
- giving support to assess and address loss and damage under the Financial Mechanism; and
- assigning actions to the Adaptation Committee, including a coordination role with regional centres and organizations addressing migration-related issues.

<u>Establishing an international mechanism to address loss and damage.</u>

There is a need for multiple approaches and systematic support, and the work programme has identified challenges to justify establishing an international mechanism to address loss and damage. An international mechanism will be a facility to support developing countries' needs with to respect loss and damage and can drive enhanced understanding, coordination and cooperation on addressing loss and damage around the world.

A mechanism to prevent and redress loss and damage is essential. Principle 3.1 of the Convention clearly states that "*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."* This principle needs to be clearly reflected in the work of the loss and damage work programme, with developed countries taking steps to proactively address and support approaches to address loss and damage, including through a needs-based approach.

The decision establishing the mechanism should give guidance on the governance and functions of the mechanism. As identified by developing countries in Bonn, these functions could be:

a) Assessment of loss and damage from the adverse effects of climate change: The special needs of particularly vulnerable developing countries must be accounted for in assessing the avoidable or unavoidable nature of loss and damage from the adverse effects of climate change. This role could include coordinating and providing guidance on standards for assessing loss and damage, such as guiding the data collection and analysis activities of relevant institutions.

b) Addressing loss and damage from the adverse effects of climate change, including through a compensation and rehabilitation fund: Unavoidable loss and damage from the adverse effects of climate change may be addressed through risk sharing mechanisms, but total loss and damage from the adverse effects of climate change will need to be redressed through compensation and rehabilitation mechanisms. This role could include coordinating and supporting technical assistance and action, and establishing and supporting regional networks of collaborative partners within and external to Governments. It could also require dedicated support through the GCF to facilitate approaches to address loss and damage at the regional, and national level.

c) Leadership and promotion of cooperation and coordination outside the Convention: The mechanism should be situated under the umbrella of the Convention and housed within the UNFCCC Secretariat, where administrative support can be provided, with support and guidance of a Board constituted by Party members and with involvement of stakeholders. The Convention could under this mechanism take systematic efforts to support responses to slow-onset damage, link with UN institutions managing human mobility, coordinate cross-boundary issues and resources, link with other UN convention processes such as the CBD and the CCD, and other UN and international organizations as appropriate.

Enhancing the work programme

The Convention must identify appropriate actions to address emerging needs and gaps, including outside the Convention and beyond conventional approaches to risk management. The work under the work programme to date appears to identify multiple challenges for developing countries in developing and operating catastrophe insurance and other instruments. This work has identified opportunities and challenges for developing countries to employ insurance-related measures for extreme weather and other instruments, particularly those such as safety networks to address non-economic losses. More work could be done to see how such tools could be employed to manage weather- related variability while longer-term solutions are being explored. Tools that manage unexpected extremes could create a buffer for developing countries, and help the international community better plan issues like financial needs (for adaptation, managing loss and damage).

The complexity of slow-onset events and the need to enhance our understanding, coordination and cooperation in assessing and addressing their impacts points to the need for special consideration both under the governance mechanisms of the UNFCCC and within other regional and multilateral institutions. Parties will need to undertake further work under the Convention to enhance the understanding of slow-onset processes, the types of loss and damage associated with various types of slow-onset impacts, and how these impacts might be addressed in multiple contexts. This work could also seek to enhance our understanding of tipping elements and tipping points, and possible early warning mechanisms for the potential triggering of key tipping elements, both ecological as well as societal. Building on this enhanced understanding, the work programme could recommend appropriate actions by the COP.

Addressing matters related to finance

Loss and damage requires consideration of approaches to address economic shocks. The Convention must drive discussions on how financial measures could be fostered to assist countries in coping with loss and damage, for example deferral of payments to international institutions, debt relief, and other similar measures. Parties must recognize that the range of approaches considered up to this point are inadequate to address slow-onset impacts.

To fully adhere to the precautionary principle in the context of loss and damage requires the support and implementation of proactive approaches to manage slow-onset climate hazards. Allocation of finance to specific

actions related to loss and damage, particularly where synergies with adaptation are not sufficient, must become part of the conversation on long-term finance. The level of funding required to prevent, manage, and compensate for loss and damage related to slow-onset impacts varies greatly from country to country and between regions, although it is clear that overall significant amounts will be needed above and beyond financial needs for adaptation. Therefore, there is an immediate need for consideration of financial resources required related to loss and damage, in order to develop a collective understanding of where overlaps might occur with current adaptation finance and where there may be unique needs. Clearly resources specific for loss and damage will need to be new and additional to existing resources.

The Convention is the policy-relevant forum to convene discussions on how financial measures could be fostered to assist countries in coping with loss and damage, for example deferral of payments to international institutions, debt relief, and other similar measures. As with the experience of the IMF PCDR Trust, there are other relevant experiences and approaches that should be part of a range of approaches to address loss and damage and where the Convention must take the lead.

Nevertheless, finance alone cannot adequately compensate people for the loss of family, homes, territory, culture or livelihoods that will result from radical changes in climate, whether at local, regional or global levels. Approaches to address non-economic losses need to be central to a holistic framework to support developing countries in coping with loss and damage. This systematic approach needs to give consideration and support to national and subnational social safety nets and on how to strengthen these approaches through the Convention, which can tackle some of these non-economic losses.

Assigning actions to the Adaptation Committee: an international coordination role

Addressing climate change induced displacement, migration and planned relocation: The Adaptation Framework already calls for work on measures to enhance understanding, coordination and cooperation with regard to climate change-induced displacement, migration and planned relocation, where appropriate, at the national, regional and international levels.[15] This work has been identified in several regional meetings as important; adequate support will need to be designed in collaboration with relevant international institutions to consider how to address the issue of migration.

Many people will be forced to move from affected areas, including from low-lying islands and coastlines and from areas affected by permanent changes to the ecosystems and other resources on which they depend for their lives and livelihoods. Industrialized countries should do their fair share in helping these people build new lives, and in some instances accept their fair share of the people exiled from their homes and countries by climate change. The complicated issue of displacement, migration and planned requires adequate and considered attention, including further research and collaboration among a range of relevant international institutions.

The Doha outcome could specifically target this issue and call for joint-discussions with the UN High Commissioner for Refugees and the International Organization for Migration as part of the SBI Loss and Damage Work Programme Second Phase, in collaboration with the Adaptation Committee. Existing international frameworks dealing with issues of displacement and migration will need to be expanded to handle movement resulting from the pressures imposed by slow-onset processes.

Coordinating technical support from regional centers: Regional centres and networks could have an important role to play both in the assessment and addressing of loss and damage, enhancing synergies related to research and regionally appropriate mechanisms. The role that some institutions are already playing, such as the CCRIF on regional risk transfer mechanisms, and SPREP and CCCCC supporting research, modelling, and decision-making, as well as project implementation, exemplifies the role that these actors could have both in the context of an international mechanism, as well as under a second phase of the SBI work programme.

[15] Decision 1/CP.16, Paragraph 14(f)