



Loss and Damage associated with
Climate Change Impacts

August 2018

REPORT OF THE SUVA EXPERT DIALOGUE

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I. TAKEAWAYS

Countries face an evolving landscape of climate impacts and risks while striving towards sustainable, climate-resilient development. Comprehensively addressing loss and damage associated with climate change impacts requires a forward-looking and long-term perspective which takes into account the incremental and cumulative nature of some of the impacts.

Risk assessment is an iterative, ongoing process to keep decision-makers informed and support systems aligned with emerging needs and values. Assessing the risks of long-term climate impacts in the future would benefit from the use of dynamic, probabilistic climate models that integrate not only readily-quantifiable parameters but also demographic, socio-economic data and information on non-economic assets. Such assets include societal/cultural identity, territory, indigenous knowledge and ecosystem services.

Comprehensive risk management needs to take place at all levels. Improvement of decision-making tools to enable optimization of action and support at all levels is crucial. Local communities need to be further involved, and their experience of loss and damage understood and integrated into the risk assessment process. Otherwise the picture of future climate impacts will remain incomplete and detached from local realities.

With a better understanding of future climate impacts and risks, adopting a comprehensive risk management lens can help mobilize a palette of actions to reduce, transfer and retain risks in a way that would best address the spectrum and timescale of climate risks faced by society and systems that sustain our well-being. Resource allocation can, then, be optimized across preemptive efforts and contingency arrangements. Understanding the context-specificness of the risks and challenges across different time horizons is critical to averting, minimizing and addressing residual loss and damage not avoided through mitigation or planned adaptation efforts.

Insurance tools, when applied complementarily with risk reduction and retention measures, can offer financial protection against extreme weather events. Knowledge and expertise from the use of those tools is valuable and can feed into the additional and complementary suite of support systems that need to be developed, especially to address incremental and cumulative residual risks, including in relation to slow onset climatic processes.

The circumstances of the poorest population need to be taken into account when designing insurance products, including smart premium support. Other climate and disaster risk financing instruments, such as forecast-based financing mechanisms, also need to be mainstreamed in the tool box for managing risks comprehensively.

Further clarity and specificity on what it means to avert, minimize and address loss and damage associated with climate change impacts can facilitate the mobilization of relevant and most appropriate information, data, knowledge, expertise, technology, capacity-building and finance, to respond to the emerging needs of developing countries in managing residual climate impacts in the future.

II. INTRODUCTION

a. RELEVANT MANDATES

The Conference of the Parties, at its twenty-third session (COP 23), requested the secretariat to organize an expert dialogue to explore a wide range of information, inputs and views on ways of facilitating the mobilization and securing of expertise and enhancement of support, including finance, technology and capacity-building, for averting, minimizing and addressing loss and damage associated with the adverse effects of climate change, including extreme weather events and slow onset events. The COP agreed to name this dialogue the Suva Expert Dialogue (Dialogue).¹

COP 23 also requested the secretariat to prepare a report on the Dialogue for consideration by the Executive Committee of the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts (Executive Committee) at its second meeting in 2018.² The meeting (Excom 8) will take place from 18 to 21 September 2018, in Bonn, Germany.³

The Dialogue was organized under the guidance of the SBI Chair and the Executive Committee, and it will inform the preparation of the technical paper referred to in paragraph 2(f) of decision 4/CP.22.

This technical paper will elaborate the sources of financial support, as provided through the Financial Mechanism of the Convention, for addressing loss and damage as described in relevant decisions, as well as modalities for accessing such support. It will also include an elaboration of finance available for addressing loss and damage outside the Financial Mechanism, as well as the modalities for accessing it.⁴

The technical paper will be prepared by the secretariat and will be made available to Parties by the fiftieth sessions of the subsidiary bodies (June 2019) for consideration in the review of the Warsaw International Mechanism. The Executive Committee will assist the secretariat in determining the scope of the paper.

b. LINKAGES TO THE FIVE-YEAR ROLLING WORKPLAN OF THE EXECUTIVE COMMITTEE

Strategic workstream (e) of the five-year rolling workplan of the Executive Committee aims to enhance cooperation and facilitation in relation to action and support, including finance, technology and capacity-building, to address loss and damage associated with the adverse effects of climate change.

In the context of activity 1 (a) of this workstream, the Executive Committee called for submissions, in December 2017, on the type and nature of actions to address loss and damage for which finance may be required. In response, 21 sets of inputs were submitted by Parties and organizations.⁵ As requested

¹FCCC/CP/2017/11, paragraph 81.

² See paragraph 11 of decision 5/CP.23.

³ See: <https://unfccc.int/process-and-meetings/bodies/constituted-bodies/executive-committee-of-the-warsaw-international-mechanism-for-loss-and-damage-wim-excom/workshops-meetings/excom8>

⁴ Decision 4/CP.22, paragraph 2(f)–(g).

⁵ Submissions are available at: <https://cop23.unfccc.int/process/bodies/constituted-bodies/executive-committee-of-the-warsaw-international-mechanism-for-loss-and-damage-wim-excom/areas-of-work/financial-instruments/call-for-submissions-on-type-and-nature-of-actions-to-address-loss-and-damage-for-which-finance>

by the Executive Committee, the secretariat synthesized the inputs received and made them available prior to the 7th meeting of the Executive Committee (Excom 7).⁶

The submissions, as well as the present note, will inform the scoping exercise for the technical paper mentioned above, which will take place at Excom 8.⁷

c. SCOPE OF THE NOTE

This note provides an overview of key information, inputs and views explored during the Dialogue.

In accordance with the guidance provided at Excom 7, the outcomes of the Dialogue are captured around the following guiding questions, which aim at enhancing the understanding of actions to avert, minimize and address loss and damage for which expertise and support are required:

- a. What are the available and emerging approaches?
- b. How should the approaches be designed and implemented?
- c. What are the barriers/gaps/challenges for design and implementation?
- d. What are the solutions and opportunities for addressing barriers/gaps/ challenges?
- e. What are the opportunities for scaling up the approaches to meet the needs in developing countries?
- f. Are there sources of support, including finance, technology and capacity building? If so, what are they? Are these sources available inside or outside the Convention?
- g. What are the organizations that can help support implementation and scaling up of approaches to meet needs in developing countries?
- h. What are the cross-cutting institutional frameworks/enabling environments that can facilitate these actions?

Inputs, views and information shared at the Dialogue varied in terms of the depth and extent to which each of these questions were addressed. In this note, the term “approach” broadly includes actions, measures, practices, schemes, initiatives and instruments in order to fully capture the information shared during the Dialogue.

d. STRUCTURE OF THE NOTE

This document is structured in four parts: takeaways (Chapter I), introduction (Chapter II), proceedings (Chapter III) and main findings of the roundtable discussions (Chapter IV). Chapter IV is divided into four sections: risk assessment (IV.a); risk transfer (IV.b); risk reduction and retention (IV.c); and comprehensive risk management (IV.d).

Sections IV.a–c summarize the information related to barriers, gaps and challenges as well as solutions and opportunities as they relate to different dimensions of risk management.

Section IV.d summarizes the views and inputs discussed in relation to institutional frameworks, enabling environment and scaling up of current approaches along with possible sources of support, and information shared on organizations that could provide relevant support.

Annex I contains a list of organizations and countries whose experts provided inputs, views and information during the Dialogue. Annex II presents the agenda along with the details of the facilitators

⁶ The synthesis paper is available at:

https://unfccc.int/sites/default/files/resource/Item_9_Summary_views_on_actions_12_Mar.pdf

⁷ See workstream (e), activity 1 of the workplan of the Executive Committee at:

<https://cop23.unfccc.int/process/bodies/constituted-bodies/executive-committee-of-the-warsaw-international-mechanism-for-loss-and-damage-wim-excom/workplan>

and rapporteurs of each segment. Annex III contains the views shared by the participants in response to the Sli-do survey.

Further information on the Dialogue is available online,⁸ such as on-demand recordings of the discussions and reports on the roundtable discussions, including tables of approaches, as developed by respective teams of rapporteurs.

III. PROCEEDINGS

The Dialogue gathered over 200 experts from governments, the private sector, regional centres, multilateral and bilateral financial entities, university/research centres, United Nations agencies and affiliated organizations and civil society organizations.

The Fijian Presidency opened the Dialogue by highlighting the progress made in relation to loss and damage since the establishment of the Warsaw International Mechanism as well as the importance of the Dialogue as a major milestone for co-creating comprehensive risk management solutions. The Chair of the Subsidiary Body for Implementation then presented the mandate of the Dialogue, laying particular emphasis on the importance of having open and interactive exchanges between technical and policy experts. Lastly, the co-chairs of the Executive Committee recalled the suite of activities leading to the Dialogue, including by presenting key findings of the submissions mentioned above, and underlined the contribution of the Dialogue to the overall objective of enhancing action and support for loss and damage.

The opening session ended with the following two questions, posed to the participants through an interactive online tool, *Sli-do*, which served to set a scene for the subsequent roundtable discussions: *Which climate impact is the largest source of concern? What would unlock the expertise and support needed to address these impacts?* See Annex III for the views shared by the participants.

The Dialogue was structured around six roundtable discussions over two days. The first day comprised two sets of parallel roundtable discussions: one set which addressed risk assessment and risk reduction, and another set on risk transfer and risk reduction. On the second day, the Dialogue took a comprehensive risk management lens in two plenary roundtable discussions: one focusing on extreme weather events and the other one on slow onset climatic processes.

The roundtable discussions were facilitated by renowned experts in the field of risk management, and supported by teams of rapporteurs⁹ who made oral reports on the salient points of the discussions during the Dialogue and subsequently produced comprehensive reports on the discussions.¹⁰

In accordance with the guidance by the Executive Committee, all roundtable discussions were structured around the questions mentioned in Section II-c above. Rapporteurs captured the outcomes of the discussions also per those questions in a textual or table format.

⁸ See: <https://unfccc.int/index.php/topics/adaptation-and-resilience/workstreams/loss-and-damage-ld/workshops-meetings/suva-expert-dialogue>

⁹ The names and affiliations of the facilitators and rapporteurs are available in the agenda of the Suva expert dialogue, in annex II.

¹⁰ Full written reports by the teams of rapporteurs are available at <https://unfccc.int/topics/adaptation-and-resilience/workstreams/loss-and-damage-ld/workshops-meetings/suva-expert-dialogue>

IV. KEY ISSUES HIGHLIGHTED DURING THE ROUNDTABLE DISCUSSIONS

a. RISK ASSESSMENT

The risk assessment process is the foundation of all climate risk management approaches and actions.

The Dialogue affirmed that risk assessment is the foundation of all climate risk management approaches and actions. The roundtable discussion on risk assessment mostly focused on ways in which a wealth of research and experience could inform the assessment of current climate impacts and future climate risks in order to enhance current practices or develop potential approaches that may contribute to averting, minimizing and addressing loss and damage. Experts drew their insights mostly from integrated assessment of hazards and vulnerability and regional impact assessment of slow onset events.

This section provides an overview of the various ways participants explored how risk assessment should be designed and implemented to better avert, minimize and address loss and damage. This section also summarizes key related challenges and opportunities.

Quantitative probabilistic risk assessment approach

One current approach elaborated in detail during the Dialogue is a case from the Philippines, the quantitative probabilistic risk assessment approach. It is based on a multi-hazard risk analysis using dynamic risk modelling, and is applicable to all sectors and government levels. This approach aims to calculate the risk levels of local government units as a basis for risk reduction measures and efforts to address residual risks. It requires the following data:

- a. Exposure (to hazard) for all local government units, comprising geo-tagged disaggregated socioeconomic information, including infrastructure, information on population and ecosystems;
- b. Frequency of (hazardous) events;
- c. Sectoral impacts and corollary information.

i. DESIGN AND IMPLEMENTATION OF APPROACHES

Assessing long-term climate impacts requires the use of dynamic, probabilistic climate models that integrate demographic data, socio-economic data and data related to non-economic losses.

Experts viewed that risk assessments need to be scaled down and applied with long-term lenses, which may require current models to shift their reliance on historical data towards more probabilistic scenarios. Furthermore, climate prediction models should not only better capture the increased frequency and intensity of weather perils, such as El-Niño, but also account for the sequential and incremental impacts of several consecutive perils, as exemplified in the case of cyclones in the Caribbean in 2017. This is particularly important for achieving correct calibration of early warning systems, which becomes increasingly problematic with the currently applied methodologies.

In order to more accurately assess current and future loss and damage, existing risk assessment models would also need to better take into account non-economic losses, as well as loss and damage incurred as a result of slow onset events. Participants in the Dialogue highlighted a number of non-economic losses in this regard, including: human capital assets – e.g. the loss of human life and culture; permanent losses – e.g. the loss of freshwater and food security; the risks posed on ecosystems on which peoples' lives most crucially depend.

Participants drew attention to sea level rise-related impacts, especially for low-lying islands, as well as to impacts at the regional level and on various sectors (e.g. agriculture, energy and transport). Regarding loss and damage related to slow onset events, concerns were repeatedly expressed on monetary and non-monetary costs associated with relocation and displacement. The interlinkages between extreme and slow onset events would also need to be better researched and considered.

The varying types and nature of vulnerabilities among different population groups and communities (e.g. rural and remote communities, women, children, the poor) and those arising from different assets owned and sources of livelihoods, would also need to be taken into account. For that purpose, more transparent, participative and inclusive approaches to the implementation of risk assessments were called for.

Going forward, risk assessment processes should also be designed and implemented considering the array of possible risk management measures, including social safety nets and forecast-based financing instruments, rather than pre-defining approaches or taking a sectional risk mitigation approach, such as insurance, in isolation.

ii. BARRIERS, GAPS, CHALLENGES AND OPPORTUNITIES FOR DESIGN AND IMPLEMENTATION

The Dialogue highlighted a number of barriers and gaps that prevent many developing countries from designing and implementing adequate risk assessment approaches. These challenges include limitations around the access to and availability of data; difficulties in accessing relevant models, methodologies and techniques, and, in some cases, insufficient inclusion of vulnerable groups and/or communities from the process.

ADEQUACY OF DATA

In developing countries, many risk assessments continue to be carried out on the basis of historical data, with limited use of dynamic models. As a result, such risk assessments may not adequately capture current and future climate impacts, as well as their interplay with evolving socio-economic factors. Further, the models used are often not customized and downscaled to the local context. Lastly, current models often adopt a quantitative approach, focusing on loss or damage to economic and physical assets, without taking into account non-economic losses or damages (e.g. degraded health, loss of life, territory, cultural identity) that may result from both extreme weather events and slow onset climatic processes.

Major gaps around data, expressed at the Dialogue, relate to: quantitative baseline data, long-term data, data on population and ecosystems, data on socio-economic dynamics including economic indicators in relation to livelihoods, particularly at the local level, as well as inconsistent format of data which limits its use and application.

A number of open source data platforms from the earth observation community and insurance industries could facilitate access to relevant data on both sudden and slow onset events in developing countries. Such open source platforms, however, would need to be mapped to make information about the platforms available, in order for them to be more widely utilized.

The Dialogue highlighted the Climate Risks and Early Warning Systems (CREWS) initiative which aims to strengthen the provision of climate information in least developed countries (LDCs) and small island developing States (SIDS) by 2020.

The European earth observation system, Copernicus, provides globally accessible free data to support risk management services. Those include:

- Copernicus Climate Change Service (C3S) which provides climate variables and indicators (e.g. temperature increase, sea level rise, ice sheet melting), and indices (e.g. drought index) based on earth observation and modelling;
- Copernicus Emergency Management Services which provides a variety of climate data for both the identification of climate drivers and expected impacts, through satellite mapping and early warning products.

The United Nations Office for Disaster Risk Reduction (UNISDR) is currently working on frameworks and indicators for streamlining national level planning and implementation approaches across the targets of the Sendai Framework for Disaster Risk Reduction and the Sustainable Development Goals. These indicators could help strengthen the underlying data basis of probabilistic models, though the Dialogue also indicated that further work is necessary for integration of the targets of the Paris Agreement into this process.

MODELLING TOOLS AND ASSOCIATED CAPACITY

The Dialogue drew attention to the limited availability of models and methodologies to translate qualitative data relevant to non-economic losses into quantitative data and tools, in order to more meaningfully integrate qualitative data into risk assessment. In some cases, as indicated by participants, use of existing models, including for downscaled modelling, is prevented when not freely accessible in regions such as Africa. In this regard, the insurance industry could have a role in enhancing accessibility to relevant modelling tools.

Participants from Africa and SIDS shared experiences where insufficient knowledge, expertise and capacities prevented the use of assessment tools and models, and in some cases, also prevented the iterative assessment process which is necessary for taking into account the evolving nature of risks or their improved understanding or risks over time.

The Dialogue underscored a need for further capacity-building and technological support to enable developing countries to better design and implement a national climate risk assessment process. As a first step in that direction, it is important to assess analytical and planning capacity of research and implementing institutions of those countries, as well as transfer technologies for modelling to enable developing countries to enhance their understanding of the risks their communities and their countries face.

Modelling tools could also be part of common risk assessment frameworks and guidelines which would include methodologies and criteria, and would pay particular attention to downscaling. Some participants viewed that such frameworks and guidelines could be developed under the UNFCCC, which would have the dual benefit of supporting the implementation of risk assessments in and by developing country institutions while making research on modelling easier.

INCLUSION OF VULNERABLE GROUPS AND COMMUNITIES

The insufficient inclusion of vulnerable and affected groups and communities in risk assessment processes continues to be a barrier for adequately assessing current and future risks. Such groups and communities, as identified at the Dialogue, include: remote, rural and local communities; women; people with disabilities; and the poorest segments of the population. The Dialogue identified that developing communication tools in collaboration with organizations working with such

Unless local communities are involved in the risk assessment process and their experience of loss and damage understood and integrated into the analysis, the picture of future climate impacts will remain incomplete and detached from local realities.

communities would help communicate risks in understandable terms with local communities.

Communication tools to enable participatory approaches would ensure that vulnerable groups and communities are put at the centre of risk assessments so that their needs can be better taken into account. This would also help communities to define and assess their own risks, as well as be part of generating solutions to manage risks in more suitable way for local, socio-economic and cultural contexts.

b. RISK REDUCTION AND RETENTION

This section provides an overview of the risk reduction and risk retention approaches discussed during the Dialogue. The section highlights the challenges and opportunities related to design and implementation of those approaches, with a particular emphasis on local-level governments, institutions and communities.

CURRENT APPROACHES IN THE CONTEXT OF RISK REDUCTION AND RETENTION

The Dialogue explored a number of approaches to reduce disaster risk:

- Forecast-based early action consists of using forecasts to prevent or reduce the risks in the run-up to an extreme event. Forecasting hazards and potential impacts on the population and linking them to early action can be a way to deal with risks, especially in the absence of longer-term approaches to risk reduction. Such an approach can include the use of forecast-based financing instruments mentioned in paragraph 58 above. It can also include EWS.
- Holistic risk reduction comprises longer-term approaches, which address the social, environmental and economic impacts of climate change as well as the interrelated dynamics of actions taken to address those impacts.
- An example from Cuba highlighted the potential negative impacts on ecosystems services and biodiversity of adopting a hard infrastructure approach to risk reduction in coastal zones. The Cuban government increasingly favours nature-based solutions such as planting mangroves, or hybrid solutions including both nature-based solutions and hard infrastructure to address climate risks in coastal areas.
- Although at an early stage of implementation, the child-centred approach in Bangladesh builds on the rationale that children are particularly vulnerable to suffering losses from extreme weather events and slow onset climatic processes, such as loss of schooling or degraded health, that are not economic losses and tend to be overlooked.

In terms of risk retention approaches, the Dialogue discussed adaptive social protection and safety nets, as well as resilient recovery and reconstruction.

Risks that are not reduced or transferred need to be kept, absorbed or accepted. Risk retention approaches comprise ex-ante planned action and ex-post actions to address the consequences of disasters resulting from extreme weather events and slow onset climatic processes. Such actions can be carried out at different scales (local, national, regional, international) and by different actors.

i. DESIGN AND IMPLEMENTATION OF APPROACHES

Regarding early actions, two main suggestions emerged during the Dialogue:

- Financing should target disaster preparedness, including early action, so that policymakers move from a position of “risk responders” to that of “risk managers”.
- Early warning systems need to be comprehensive so as to reach out to all sectors and communities, including vulnerable groups. Early warning systems should be linked to evacuation plans, which have proven to reduce human losses substantially in the event of tropical cyclones, river floods, heatwaves and droughts.

Non-economic considerations should be included in the prioritization of risk reduction activities, so that such activities are not biased towards the preservation of assets owned primarily by the wealthier segments of the population but also address the needs of the most vulnerable.

ii. BARRIERS, GAPS, CHALLENGES AND OPPORTUNITIES FOR DESIGN AND IMPLEMENTATION

AWARENESS OF RISKS AT THE LOCAL LEVEL

The Dialogue identified the low level of awareness of the full range of current and future climate risks as a major barrier to governments, institutions and communities at the local level, leading initiatives on disaster risk reduction that could avert, minimize and address loss and damage.

In order to raise awareness at the local level, inputs on a number of solutions and opportunities were put forward during the Dialogue, such as: implementing pilot projects to highlight the feasibility and co-benefits of risk reduction projects and foster political buy-in; and translating scientific knowledge and information into usable material for local governments and communities.

Some organizations and initiatives that could support that process include:

- The Global Covenant of Mayors on Climate and Energy, which is developing tools to support risk assessment and reduction strategies for cities of all sizes, with a view to have those strategies integrated into city and national plans for sustainable development, and to facilitate the scaling up of successful approaches.
- The European earth observation system, Copernicus, which provides globally accessible free data and technology to support risk management services related to prevention and response, as well as informed a pilot for resilience initiatives in cities, including in relation to risk reduction.
- The World Meteorological Organization, which could help align existing early warning systems with those now emerging in the context of climate change.

CAPACITIES AT THE LOCAL LEVEL

Some local governments, institutions and communities may have insufficient capacities to generate innovative adequate solutions without external sources of information and support. Participants underscored that local governments and municipal authorities often lack adequate expert personnel, and do not have the time and financial resources to adequately assess and manage climate risks. As a result, disaster risk reduction measures remain more reactive than proactive.

Sustained investments in raising awareness and building capacities of local governments and institutions is crucial to the design and implementation of innovative and adequate solutions to address residual risks.

Sustained investments in local institutions is crucial to building capacities. Participants pointed out that, while multilateral and bilateral donors should enhance support for capacity-building in relation to risk retention, some guidance related to risk retention and related capacity building and technology needs could also be provided through constituted bodies under the UNFCCC regime (e.g. the Least Developed Countries Expert Group (LEG), the Paris Committee on Capacity Building (PCCB), the Climate Technology Centre and Network (CTCN), the Executive Committee of Warsaw International Mechanism).

COORDINATION AMONG GOVERNMENTAL ENTITIES AT DIFFERENT LEVELS

The Dialogue reiterated that efforts to reduce disaster risk often fall under various ministries and/or local government/municipal authorities' departments, resulting in siloed approaches. The lack of coherence and synergies was also pointed out with regard to the integration of risk retention and risk reduction actions. Numerous actions are implemented locally from social protection to government-led and community-led resilient projects, as well as risk financing. Challenges remain to increasing complementarity of different actions at various government levels as coordinated actions would facilitate the mobilization of support.

Integration of strategies, policies and actions between ministries or departments and across different governance levels would be instrumental in ensuring synergies. Such integration could be facilitated or strengthened by using the national adaptation plan process or other national risk reduction strategies, to foster convergence among national and local level action. Channeling information from the bottom-up also contributes to avoiding imposing top-down solutions locally.

ACCESS TO FINANCE

A number of challenges around access to or level of finance for activities to reduce or retain risks was identified, particularly in the context of LDCs and SIDS, including:

- Current levels of financing are insufficient to implement risk reduction actions that would include relocation, particularly for settlements impacted by sea-level rise.
- In addition to the limited sources of financing, the level of indebtedness of some developing countries, in some cases, prevents them from taking action towards risk reduction and risk retention. This points to the issue of the feasibility of financing mechanisms for risk reduction and retention in developing countries, as well as their viability under future climate scenarios.
- Timely access to finance after a disaster occurs, which is crucial, but often difficult to come by.

Accordingly, participants highlighted the need for a systematic analysis and mapping of current risk management approaches and related existing financial architecture, channels, sources as well as corollary gaps and suggestions for addressing them. Furthermore, such mapping should include the best financial solutions to retain risk, as well as the costs of introducing social safety nets or social protection schemes to address climate change impacts.

The Dialogue also drew attention to a need for the consideration of the limits of adaptation actions and the resulting loss and damage (e.g. through a loss and damage registry), as this information would be essential to assessing the financial support needed, including at the community level. In the case of Saint Lucia, for example, such limits of adaptation are defined in the NAP, and include issues

related to rising temperature, sea level rise, ocean acidification and drought. The analysis and mapping could help design approaches and trigger international support where needed, including under the UNFCCC.

Further solutions mentioned at the Dialogue to address the dearth of finance for risk retention, particularly for LDCs and SIDS, include the establishment of a global solidarity fund. Further information on this possible source of support is provided in section III-d.

C. RISK TRANSFER

This section provides an overview of climate and disaster risk financing instruments to transfer risks mentioned in the course of the two-day Dialogue. The roundtable discussion on risk transfer predominantly focused on insurance. Integrating insurance and risk transfer instruments with risk reduction, and adopting a comprehensive view of risk management, enable communities and countries to deal with the broad spectrum of climate and disaster risks.

1. INSURANCE

Insurance is one of the widely considered risk transfer solutions among numerous climate and disaster risk financing instruments that are in use today.

Insurance is one of the widely considered risk transfer solutions among the numerous climate and disaster risk financing instruments that are in use today. The Dialogue repeatedly highlighted that insurance should be treated as part of a comprehensive risk management approach, cautioning that this tool is effective in providing financial protection for a subset of residual risks not addressed through reduction or retention measures, and mostly applicable in the case of extreme weather events. The Dialogue reiterated that additional tools are needed for addressing loss and damage induced by slow onset events, which have incremental and cumulative characteristics.

The Dialogue drew attention to cases where an insurance approach can create additional financial burden on already vulnerable communities, for example premium payments by poor communities. Additionally, experts warned that proper design and incentives in insurance are crucial to avoid maladaptation. Some experts shared insights on the viability of insurance in the face of dynamic weather scenarios and changing of climate faster than expected. This could misdirect assessment of basis risk, further demonstrating that risk assessment needs to be an ongoing process. The inability to correctly determine the risk thresholds and associated pay-outs within parametric insurance schemes and imperfect hedging can further strain resources in the long-term.

CURRENT APPROACHES IN THE CONTEXT OF RISK TRANSFER

The Dialogue explored current risk transfer approaches at all levels.

- Micro-level: a weather index insurance scheme for farmers and herders currently piloted in Africa.
- Regional level: risk transfer facilities such as Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI), African Risk capacity (ARC) and the Caribbean Catastrophe Risk Insurance Facility (CCRIF).

PCRAFI is currently addressing gaps within existing insurance mechanisms in the Pacific by engaging insurance industry experts working in the area to help align the region's insurance needs with the risk levels they face.

- International level: the InsuResilience Global Partnership and the UNFCCC Fiji Clearing House for Risk Transfer contribute to fostering risk transfer solutions.
- An implementation mechanism is being developed under the InsuResilience Initiative, which aims to explore and create solutions along the finance and insurance value chains that help build the necessary capacities in developing countries.

Insurance needs to be designed and implemented to complement risk reduction and risk retention measures in order to contribute to resilience to the impacts of extreme weather events.

i. DESIGN AND IMPLEMENTATION OF APPROACHES

A number of principles were put forward for insurance to meet the needs of the most vulnerable, including women, disabled people and the poorest population segments. Such principles include: focusing on comprehensive, needs-based solutions; creating actual value for the insured; ensuring affordability, accessibility and sustainability; applying participatory approaches to bring together all stakeholders, from local to national beneficiaries and other stakeholders, including the private sector; preventing maladaptation; and creating enabling environments.

Defining different types of target groups helps applying tailored insurance solutions. Such target groups could include the extreme poor, the moderate poor and those just right above the poverty threshold.

The Dialogue generally acknowledged that strengthening the involvement of civil society organizations in the design and decision-making processes for risk transfer improves product design by facilitating the inclusion of bottom-up, vulnerability perspectives and the consideration of particular practices of local communities (e.g. risk transfer as a means to access credit).

Participants drew attention to a need for smart premium support from two distinct perspectives: one in order to make insurance accessible to those most in need of protection from climate impacts; and another, in order to ensure international equity in the context of climate justice.

ii. BARRIERS, GAPS, CHALLENGES and OPPORTUNITIES FOR DESIGN AND IMPLEMENTATION

ACCESSIBILITY AND AFFORDABILITY OF INSURANCE

Many of the challenges identified at the Dialogue are associated with accessibility and affordability of insurance, including the inherent difficulties in designing the right types of subsidies, and ensuring subsidized premiums do not dilute risk-related pricing signals to avoid undermining adaptation and risk reduction efforts. The Dialogue also highlighted the difficulties of many international donors in justifying their subsidization of the premiums of profit-making insurance companies. Participants called for further research on how to tailor premium subsidies to the wider comprehensive risk management context of which insurance is part.

To enhance accessibility and affordability of insurance for the poor, the following solutions were put forward:

- Shifting from asset-based to non-asset based insurance solutions, e.g. livelihood-based insurance mechanisms;
- Exploring the amount of sovereign debt that the private sector is willing to take on, and the implications this holds for regional facilities and local insurers. On that basis, entry points for vulnerable communities to build private insurance on top of such public-private arrangements would need to be addressed.

- Providing smart premium support. The level of premium support could reflect how climate change affects baseline risk levels over time. It could be determined based on the climate delta¹¹ of the risk levels.
- Those subsidies would need to be paid by Annex I countries through an international solidarity fund, the details of which are provided in section III-d. To avoid indirectly subsidizing insurance companies, the provision of premium subsidies to pools of countries that put in place regional risk transfer mechanisms could be favoured.
- Reducing the costs of insurance through improved capacities of remote sensing, lowering their transaction costs through digital technologies such as blockchains and/or pre-financing arrangements through aggregators.
- Increasing the number of insurance subscribers. As an example, the Spanish Insurance Compensation Consortium is a public-private partnership which acts as a direct insurer in cases of disasters caused by natural catastrophes, including those of hydro-meteorological origin: fluvial or coastal flooding, winds above 120 km/h or tornados. A large extension of the insured base allows for a very broad coverage at affordable cost for the insured. The system is self-sustainable and does not require any contribution from the budget of public administrations.

INSURANCE LITERACY

Participants reported on the limited capacities of developing countries to consider insurance as an option to address loss and damage, which creates a barrier to fully benefit from available risk management solutions. Inadequate insurance literacy across levels, from individuals, small and medium enterprises, distribution channels to government institutions and policy-makers at the macro-level, was viewed as preventing the speedy and comprehensive uptake of insurance.

Further support is called for to address the limited awareness on the benefits of insurance, as well as the insufficient capacity to implement and manage insurance schemes at the government level, especially in countries with small economies. Such support should be part of a larger effort to enhance capacities to manage disaster risks comprehensively, with the objective of strengthening risk reduction efforts; while the risk transfer component should help focus on those that are insurable.

2. OTHER CLIMATE AND DISASTER RISK FINANCING INSTRUMENTS

Insurance represents only one type of climate and disaster risk financing instrument. Participants identified the following other instruments: forecast-based financing/cash transfer mechanisms, weather derivatives, catastrophe and climate bonds, blue bonds, impact financing, disaster risk financing frameworks, including disaster emergency funds. Some of these instruments directly support risk reduction and retention. The R4 Rural Resilience Initiative and the African Risk Capacity initiatives exemplified the combined use of diverse financing instruments to facilitate risk reduction efforts, in conjunction with risk transfer and retention through contingency finance.

The Dialogue highlighted a number of challenges and opportunities regarding the use of such climate and disaster risk financing instruments. Section III-d

¹¹ One expert explained that the concept refers to those risks substantiated by climate change and not those which arise from, for example, lower development levels.

summarizes those challenges and opportunities concerning underlying decision-making process for the design of a comprehensive risk management approach.

d. FOSTERING COMPREHENSIVE RISK MANAGEMENT

A comprehensive risk management approach can help mobilize a palette of approaches, instruments, and tools that will best address the continuum of climate risks faced locally.

This chapter reports on the key points from the roundtable discussions on comprehensive risk management approaches to address both extreme weather events and slow onset climatic processes. This chapter first presents the inputs and views explored on approaches, challenges and opportunities for design and implementation of comprehensive risk management approaches. The chapter then addresses the issues related to the enabling environment and types and sources of support identified during the Dialogue for the effective implementation and scaling-up of comprehensive risk management.

CURRENT APPROACHES IN THE CONTEXT OF COMPREHENSIVE RISK MANAGEMENT

The Philippines shared their national comprehensive risk management approach, which is comprised of several steps:

- Risk assessment – using the quantitative, probabilistic risk analysis approach.
- Risk management – including two broad clusters, as applicable: (i) risk avoidance, by ensuring that all planning processes, from land use planning to development planning to investment planning, from national to local levels, are made risk-based through the application of the quantitative probabilistic risk analysis approach; and (ii) risk reduction, including by integrated contingency planning, integrated early warning and re-engineering. To address slow onset events, adaptation measures are also implemented.
- Addressing residual risks – noting that there is no such thing as zero risk, and that countries are likely to be further hit by disasters because of increasing climate uncertainty.

In the case of the Philippines, approaches to address residual risks consist of risk sharing, risk transfer and other innovative approaches on resilience building, such as the development or enhancement of climate resilient livelihoods.

i. DESIGN AND IMPLEMENTATION OF APPROACHES

The experience of the Philippines indicated that the management of potential impacts from slow onset events should be incremental, and is likely to be more sectoral and decentralized than the management of impacts of extreme weather events, which tend to be more centralized. Managing the potential impacts of slow onset events can also open opportunities for optimization, as in the agricultural sector, for instance.

Key elements emphasized during the Dialogue regarding the design and implementation of the comprehensive risk management approach include:

- Inclusivity – to facilitate the development of innovative approaches and foster ownership of projects and programmes, including through multi-stakeholder partnerships. This would help take into account the perspectives of women, grassroot groups and displaced populations. Partnerships would need to bring together climate, humanitarian, disaster risk reduction and development

communities, as well as the private sector. A coordinated and integrated mechanism could be put in place to facilitate the collaboration between private sector actors and governmental institutions;

- Local leadership – which calls for sustained investments in local institutions and better integration of local actions into broader international initiatives;
- Focusing on actions – that include livelihood diversity, social protection and food security;
- Adopting a long-term perspective and addressing slow onset events – as per the experience of the Philippines, this would mean implementing adaptation measures at the early stage, and then considering slow onset events as opportunities for optimization or transformational approaches, in the agricultural sector for instance;
- Considering all available tools and approaches that form part of risk management to determine an appropriate country strategy.

ii. BARRIERS, GAPS, CHALLENGES AND OPPORTUNITIES FOR DESIGN AND IMPLEMENTATION

A TOOLBOX FOR DECISION-MAKING

Participants underscored that governments in developing countries, in some cases, have difficulties making decisions on the palette of risk management instruments, and allocate their budget in a way that would best respond to their national circumstances. This was particularly acute when considering long-term uncertainty. An underlying concern was that risk transfer mechanisms, such as insurance, be given preference with limited financial resources, to the detriment of potential risk reduction activities.

At the government level, particularly in developing countries, the Dialogue also highlighted a shortage of tools and methods to help identify and compare the feasibility of specific options to address the risks that were assessed. In this regard, the quantification of all available options is viewed as useful in order to allow for a comparative analysis of costs and benefits. For instance, insurance experts called for impact evaluations, including cost-benefit analyses and quantifications of paid claims of existing insurance schemes, in order to allow for better comparisons of the feasibility of insurance solutions and of their opportunity costs with that of other climate and disaster risk financing instruments, in the context of a broader comprehensive risk management approach.

The Dialogue acknowledged that a decision-making support tool to help governments and other actors determine the optimal allocation of resources (e.g. human resources, finance, training) would be useful. Such a tool should help decision-makers consider future changes in terms of hazards, vulnerability and exposure as well as already detectable impacts. As mentioned by participants, such a tool could build on the following:

- The risk layering perspective, which can help identify the right options for dealing with the different risk layers as well as the most cost-effective mix of risk financing tools. It can also help identify if and to which extent insurance is a feasible solution for a given country by contextualizing its application.
- The Economics of Climate Adaptation (ECA) tool, developed by SwissRe and further expanded by MCII, which can help policy-makers identify and choose the most cost-effective options from a portfolio of adaptation, risk reduction and/or risk transfer measures.

The implementation of a comprehensive risk management approach in developing countries calls for technical and financial support to risk assessment, decision making processes, and implementation, particularly at the local level.

Further, participants pointed to the need to map comprehensively which types of financial instruments could cover different types of impacts at the global level. It involves collecting case studies on different countries and for addressing different levels of risks. At the national level, a similar mapping exercise needs to be complemented with cost-benefit analyses that would allow for the comparison of different climate disaster and risk financing instruments.

Some participants suggested that this mapping could be supported through the UNFCCC. It was also underlined that developing countries would require support to conduct the analyses needed and carry out such a full-fledged costs and benefits comparison of different climate disaster and risk financing instruments.

SUPPORT FOR DEVELOPING COUNTRIES

Further to comparison analysis for optimizing risk management options, support is also required for subsequent planning and implementation phases of the comprehensive risk management approach.

In this regard, participants pointed to a need for a better understanding of ways in which the Green Climate Fund (GCF) and other financial mechanisms and entities can support such processes, as well as their current limitations. The Dialogue also explored the role which regional organizations can play. For example, in the Pacific, regional centres are supporting the policy process of comprehensive risk management through provision of technical support in relation to climate change action, access to climate and disaster risk financing, and linking national plans and priorities to global frameworks.

INSTITUTIONAL ARRANGEMENTS

Some participants highlighted the importance of coordination of between national ministries in order to effectively manage the different aspects of slow onset events in a holistic fashion.

According to the experience shared by the Pacific Islands Forum, the key group to engage in the discussion on managing slow onset events are the ministers of finance, economy and planning, which collectively play an important role in planning and budgeting for the countries. Those ministers should have a good understanding of climate risks and linkages to sustainable development as they develop national budgets and planning. Further, the Dialogue discussed the importance of taking an integrated approach that enables coordination across ministries, different governance levels and across sectors, so as to improve planning, implementation and accountability.

ACCESS TO FINANCE

A number of participants from developing countries and civil society organizations highlighted challenges regarding accessing post-disaster financial resources, including for the recovery and reconstruction phases. While the Dialogue introduced emerging anticipatory approaches in this regard, such as forecast-based financing, there is further scope for making them more widely available.

One way to achieve this, as some participants highlighted, is through better interplay among humanitarian action, climate finance and policy architecture. In this regard, the International Federation of Red Cross and Red Crescent Societies (IFRC) reported their initiative on convening relevant professionals from disaster risk reduction, sustainable development, and climate change adaptation, with a view to integrating differing perspectives and enabling them to work in a more complementary and mutually supportive way.

As shared in the Dialogue, access to finance is particularly pressing for governments from African countries and the Pacific Islands, which struggle to access international re-insurance and capital markets, and lack adequate domestic financial markets. These circumstances, in some cases, result in self-insurance being the only form of risk transfer in practice. Innovative sources of funding and strategies for planned relocation are urgently required to deal with the impacts of slow onset events, according to the experience of Vanuatu and of some of the civil society organizations.

iii. SUPPORT AND ENABLING ENVIRONMENT

This section contains views shared during the Dialogue on the support and enabling environments that are currently in place at the international, regional and national levels, for averting, minimizing and addressing loss and damage. It looks specifically at some of the limitations of current support systems and enabling environments, and explores potential solutions to address those limitations, building on existing pioneering initiatives. Lastly, this section maps out the organizations and communities of practice identified during the Dialogue for providing support to the planning and implementation of approaches for averting, minimizing and addressing loss and damage.

AT THE INTERNATIONAL LEVEL

At the international level, the Sendai framework for Disaster Risk Reduction, Agenda 2030 and the Paris Agreement have contributed to establishing a favourable enabling environment for countries to take action that would contribute to averting, minimizing and addressing loss and damage.

Several UNFCCC constituted bodies were mentioned as possible sources for support in general. In addition to the Executive Committee, participants indicated the Technology Executive Committee (TEC) and the CTCN for support related to technology; the PCCB for capacity-building related support; the LEG for its expertise; and the Standing Committee on Finance (SCF) and the GCF in relation to financial support.

One participant also suggested that the Executive Committee develop additional guidance on comprehensive risk management planning to help countries develop plans to address loss and damage that could subsequently be used for requesting financing. In a set-up similar to that providing support to NAPs under the UNFCCC, it was suggested that the Executive Committee may also facilitate capacity-building activities and access to financing.

In regard to finance, some participants stressed the importance of considering how the Financial Mechanism under the UNFCCC can help generate support for risk management. If this prove insufficient, consideration of an additional funding modality for risk assessments under the GCF was suggested. Regarding risk transfer solutions, the GCF was also mentioned repeatedly as a potential mechanism to financially support developing countries and to incentivize the development of innovative, pro-poor approaches, including through smart premium support. The Global Environment Facility (GEF), in particular the LDCF, was also mentioned as alternative channels to develop funding mechanisms to address loss and damage through smart premium support. Lastly, risk retention was viewed as an area for which a new GCF window or trust fund could be created.

Regarding the financing of those possible mechanisms to support enhancements of existing projects or projects related to loss and damage, the following ideas were shared: debt-for-resilience swaps, an international transaction tax, and different types of carbon levies or proceeds from emissions trading schemes. A corollary

The assessment of the effectiveness of the current international support architecture is important to consider complementary support measures that would respond to the capacity, technical and financial needs of developing countries in addressing residual risks.

solution was to establish an international solidarity fund, potentially financed on the basis of the polluter-pays-principle.

AT THE REGIONAL AND NATIONAL LEVELS

At the regional level, participants drew attention to initiatives such as the Pacific Islands Climate Change Insurance Facility that will build on the experience of PCRAFI but widen the coverage of the facility beyond insurance to deal with the effects of climate change, especially in terms of slow onset events, and including through social support and new financial instruments. The Pacific Resilience Fund was also recently endorsed in the region as a means to finance risk reduction activities and improve the climate resilience of communities, infrastructure and economies in the Pacific.

At the national level, the Seychelles shared insights from their climate change adaptation trust fund, which is funded by private sector philanthropists, and finances disaster risk reduction and social resilience plans in order to better adapt to the adverse effects of climate change. The fund is accessible to all actors at the local level.

Disaster risk management legislation was also viewed as a contributing factor to enhancing enabling environments at the national level.

At both regional and national levels, opportunities for scaling up risk management includes enhancing cooperation across public and private institutions. In particular, public-private-partnerships (PPPs) are viewed as key catalysts for the development of insurance products, among other support systems to manage climate-related risks, in developing countries. Such PPPs should include local communities, stakeholders and civil society organizations, as a multi-stakeholder approach contributes to the sustainability and long-term success of insurance schemes.

ORGANIZATIONS THAT CAN HELP SUPPORT IMPLEMENTATION AND SCALING UP OF APPROACHES IN DEVELOPING COUNTRIES

The following table provides an overview of the communities of practice and organizations that are currently providing support to the implementation and scaling up of risk management approaches, according to interventions made during the Dialogue.

	Data and knowledge	Capacity building	Finance	Technology
Communities of practice / institutions	<ul style="list-style-type: none"> • Earth observation community • Humanitarian community • Development institutions • Insurance industry • Research institutions 	<ul style="list-style-type: none"> • Humanitarian community • Development institutions 	<ul style="list-style-type: none"> • International aid/Development institutions • Climate finance institutions • Philanthropic organizations • Private sector 	Private sector
International level organizations	<ul style="list-style-type: none"> • Open Climability Suite • EU/Copernicus • EU/Global Covenant of Mayors on Climate and Energy • UNFCCC (Fiji Clearing House for Risk Transfer) • UNISDR (indicators) • Swiss Re • MCII • WMO 	<ul style="list-style-type: none"> • InsuResilience Initiative • EU/Global Covenant of Mayors on Climate and Energy • IFRC (Partners for resilience programme) 	<ul style="list-style-type: none"> • IFRC • Oxfam 	<ul style="list-style-type: none"> • TEC • CTCN
Regional level organizations	<ul style="list-style-type: none"> • African Adaptation Initiative 	<ul style="list-style-type: none"> • Caribbean Catastrophe Risk Insurance Facility (CCRIF) • African Risk Capacity (ARC) • Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) 	<ul style="list-style-type: none"> • Caribbean Catastrophe Risk Insurance Facility (CCRIF) • African Risk Capacity (ARC) • Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) 	

Annex I – Agenda of the Dialogue

2 May 2018

Opening plenary session		
15:00–15:30	<ul style="list-style-type: none"> • Welcoming remarks by the COP presidency and the SBI chair • Opening remarks by the Excom co-chairs • Introduction by the facilitator, Ms. Musonda Mumba, UN Environment 	
Parallel roundtable discussions		
15:40–16:50	Risk assessment (Chamber hall) <ul style="list-style-type: none"> ➤ <i>Facilitator:</i> Simon Young, Caribbean Risk Managers Ltd ➤ <i>Rapporteur team:</i> Sönke Kreft and Viktoria Seifert, Munich Climate Insurance Initiative/ United Nations University 	Risk reduction (Lower Conference Room/AHH) <ul style="list-style-type: none"> ➤ <i>Facilitator:</i> David Stevens, UNISDR ➤ <i>Rapporteur team:</i> Lena Weingartner and Mairi Dupar, Overseas Development Institute
16:50–18:00	Risk transfer (Chamber hall) <ul style="list-style-type: none"> ➤ <i>Facilitator:</i> Swenja Surminski, London School of Economics ➤ <i>Rapporteur team:</i> Sönke Kreft and Viktoria Seifert, Munich Climate Insurance Initiative/ United Nations University 	Risk retention (Lower Conference Room/AHH) <ul style="list-style-type: none"> ➤ <i>Facilitator:</i> Reinhard Mechler, International Institute for Applied Systems Analysis ➤ <i>Rapporteur team:</i> Britta Horstmann, German Development Institute, and Nicola Tollin, University of Southern Denmark
3 May 2018		
15:00–15:40	Opening plenary session <ul style="list-style-type: none"> • Reporting back from the parallel roundtable discussions 	
Roundtable discussions		
15:40–16:40	Managing risks comprehensively: extreme weather events <ul style="list-style-type: none"> ➤ <i>Facilitator:</i> Olivier Mahul, World Bank ➤ <i>Rapporteur team:</i> Anne de Riedmatten, International Federation of Red Cross and Red Crescent Societies, and Marilyn Averill, University of Colorado at Boulder 	
16:40–17:40	Managing risks comprehensively: slow onset climatic processes <ul style="list-style-type: none"> ➤ <i>Facilitator:</i> Musonda Mumba, UN Environment ➤ <i>Rapporteur team:</i> Marilyn Averill, University of Colorado at Boulder, and Anne de Riedmatten, International Federation of Red Cross and Red Crescent Societies 	
17:40–18:00	Closing plenary session <ul style="list-style-type: none"> • Reporting on the outcomes of the Dialogue • Closing remarks and way forward by the Excom co-chairs 	

Annex II – Responses to the opening questions via Sli-do

1. Which climate impact is the largest source of concern?



2. What would unlock the expertise and support needed to address these impacts?

