Unedited

Annex file of the synthesis report of the Executive Committee of the Warsaw International Mechanism for Loss and Damage for the first global stocktake

This document compiles additional details on individual products and activities referred to in the synthesis report of the ExCom.

Annex II - Repository of information related to the thematic area of slow onset events

1. Technical paper on slow onset events

The bullets below outline the key findings of a technical paper on slow onset events, which was mandated by COP 17:

(a) The negative effects of slow onset events are already affecting developing countries and the resulting loss and damage associated with slow onset events is likely to increase significantly, even assuming that appropriate mitigation and adaptation action is undertaken;

(b) Vulnerable developing countries will be the hardest hit due to their low adaptive capacity;

(c) There exists a wide disparity in capacity between countries and regions to respond to slow onset events;

(d) Several approaches exist for addressing loss and damage associated with slow onset events, but there is a need for better communication to decision-makers about slow onset events and risk management options;

(e) There is a need to support vulnerable developing countries in developing and implementing risk management options appropriate to addressing loss and damage associated with slow onset events;

(f) There are important synergistic interactions between rapid onset and slow onset events that increase the risk of loss and damage, emphasizing the relevance of integrated risk management approaches as well as the necessity to develop both short- and long-term planning;

(g) There is a need for sustainable financial instruments that are appropriate for addressing loss and damage associated with slow onset events, including residual risk in developing countries that are particularly vulnerable to the adverse effects of climate change;

(h) The management of slow onset risks will require strong and reliable institutional arrangements and governance structures; countries need to develop a forward-looking climate change policy with specific goals and priorities, that takes into account slow onset climate change and its impacts. Integration of the management of slow onset risks into national development planning, poverty reduction strategies and other relevant policy frameworks will help to coordinate actions across sectors;

(i) The greater uncertainty associated with the long-term nature of slowly evolving risks compared to rapid onset events emphasizes the need for flexible, iterative approaches that can be built into long-term planning processes;

(j) The emergence of a focus on non-economic losses and the ability to both assess and address these in terms of climate change is a significant component of the discussion on loss and damage;

(k) Further emerging issues that warrant increased attention include health impacts, issues concerning food and water security, and impacts on ecosystem resilience due to the adverse effects of slow onset events and processes; another area to take into account is the difference in slow onset impacts between urban and rural contexts.[1]

2. Expert meeting to consider future needs, including capacity needs associated with possible approaches to address slow onset events in 2013

The report of the expert meeting to consider future needs, including capacity needs associated with possible approaches to address slow onset events, which took place in 2013, included information on some broad convergence around needs in furthering the deliberations on loss and damage. This included the need for:

(a) More focused discussion on possible approaches to address slow onset events in accordance with the specific needs

[1] FCCC/TP/2012/7, paragraph 7.

and concerns of countries as well as the different types of impacts of slow onset events, with the greater engagement of relevant technical experts on the respective issues from wider stakeholder groups;

(b) A concrete vision of the UNFCCC to lead the work on addressing slow onset events, and the instigation of action by outside processes in attending to future needs related to addressing slow onset events;

(c) Taking a long-term and comprehensive perspective with flexibility in planning, policymaking and developing approaches to address slow onset events;

(d) Further knowledge sharing and technical collaboration, including South–South exchange and learning, and the strengthening of regional organizations given their crucial role in that regard;

(e) Improved provision of data to enable evidence-based policymaking and planning for addressing slow onset events;

(f) Enhanced capacity to develop relevant knowledge and effectively apply that knowledge for implementation even in the face of uncertainties;

(g) Sustained support, including finance.[2][3]

3. Overview of the scope of work undertaken on slow onset events

The below provides an overview of the scope of work being undertaken on slow onset events broken down by regions and by efforts focusing on a) enhancing knowledge and understanding, b) strengthening dialogue, coordination and coherence, and c) enhancing action and support, as reported by partners in the slow onset database as of February 2018.

94 organizations included in the SOEs database are working on slow onset events in Africa:

- 83 organizations reported efforts focusing on enhancing knowledge and understanding: The efforts focused mostly on loss of biodiversity as well as land and forest degradation; the efforts focused least on salinization as well as glacial retreat and related impacts;
- 68 organizations reported efforts focusing on strengthening dialogue, coordination and coherence: The efforts focused mostly on loss of biodiversity as well as land and forest degradation; the efforts focused least on ocean acidification, salinization as well as glacial retreat and related impacts;
- 44 organizations reported efforts focusing on enhancing action and support: The efforts focused mostly on loss of biodiversity as well as land and forest degradation; the efforts focused least on ocean acidification, salinization as well as glacial retreat and related impacts.

95 organizations included in the SOEs database are working on slow onset events in Asia:

- 84 organizations reported efforts which focused on the enhancement knowledge and understanding: The efforts focused mostly on loss of biodiversity as well as land and forest degradation; the efforts focused least on glacial retreat and related impacts;
- 63 organizations reported efforts focusing on strengthening dialogue, coordination and coherence: The efforts focused mostly on loss of biodiversity as well as land and forest degradation; the efforts focused least on salinization as well as glacial retreat and related impacts;
- 43 organizations reported efforts focusing on enhancing action and support: The efforts focused mostly on loss of biodiversity as well as land and forest degradation; the efforts focused least on salinization as well as glacial retreat and related impacts. No investment has been reported to address salinization as well as glacial retreat and related impacts.

71 organizations included in the SOEs database are working on slow onset events in Caribbean and Central America:

- 63 organizations reported efforts focusing on enhancing knowledge and understanding: The efforts focused mostly on loss of biodiversity, land and forest degradation as well as sea level rise; the efforts focused least on salinization as well as glacial retreat and related impacts;
- 51 organizations reported efforts focusing on strengthening dialogue, coordination and coherence: The efforts focused mostly on loss of biodiversity as well as land and forest degradation; the efforts focused least on ocean acidification, salinization as well as glacial retreat and related impacts;
- 37 organizations reported efforts focusing on enhancing action and support: The efforts focused mostly on loss of biodiversity as well as land and forest degradation; the efforts focused least on salinization as well as glacial retreat and related impacts.

[2] FCCC/SBI/2013/INF.14, paragraph 71.

74 organizations included in the SOEs database are working on slow onset events in Europe:

- 65 organizations reported efforts focusing on enhancing knowledge and understanding: The efforts focused mostly on loss of biodiversity as well as land and forest degradation; the efforts focused least on salinization as well as glacial retreat and related impacts;
- 54 organizations reported efforts focusing on strengthening dialogue, coordination and coherence: The efforts focused mostly on loss of biodiversity as well as land and forest degradation; the efforts focused least on sea level rise, ocean acidification, salinization as well as glacial retreat and related impacts;
- 32 organizations reported efforts focusing on enhancing action and support: The efforts focused mostly on loss of biodiversity; the efforts focused least on salinization as well as glacial retreat and related impacts.

73 organizations included in the SOEs database are working on slow onset events in North America:

- 65 organizations reported efforts focusing on enhancing knowledge and understanding: The efforts focused mostly on loss of biodiversity and land and forest degradation; the efforts focused least on desertification, glacial retreat and related impacts and salinization;
- 55 organizations reported efforts focusing on strengthening dialogue, coordination and coherence: The efforts focused mostly on loss of biodiversity; the efforts focused least on desertification, salinization as well as glacial retreat and related impacts;
- 31 organizations reported efforts focusing on enhancing action and support: The efforts focused mostly on loss of biodiversity; the efforts focused least on glacial retreat and related impacts and salinization.

52 organizations included in the SOEs database are working on slow onset events in South America:

- 48 organizations reported efforts focusing on enhancing knowledge and understanding: The efforts focused mostly on loss of biodiversity; the efforts focused least on desertification, salinization as well as glacial retreat and related impacts;
- 37 organizations reported efforts focusing on strengthening dialogue, coordination and coherence: The efforts focused mostly on loss of biodiversity; the efforts focused least on ocean acidification, salinization and glacial retreat and related impacts;
- 19 organizations reported efforts focusing on enhancing action and support: The efforts focused mostly on loss of biodiversity as well as land and forest degradation; the efforts focused least on ocean acidification, salinization as well as glacial retreat and related impacts.

70 organizations included in the SOEs database are working on slow onset events in Pacific/Oceania:

- 63 organizations reported efforts focusing on enhancing knowledge and understanding: The efforts focused mostly on loss of biodiversity as well as land and forest degradation; the efforts focused least on desertification, salinization as well as glacial retreat and related impacts;
- 48 organizations reported efforts focusing on strengthening dialogue, coordination and coherence: The efforts focused mostly on loss of biodiversity and land and forest degradation; the efforts focused least on glacial retreat and related impacts;
- 32 organizations reported efforts focusing on enhancing action and support: The efforts focused mostly on loss of biodiversity as well as land and forest degradation; the efforts focused least on salinization as well as glacial retreat and related impacts.

40 organizations included in the SOEs database are working on slow onset events in Polar Regions:

- 36 organizations reported efforts focusing on enhancing knowledge and understanding: The efforts focused mostly on loss of biodiversity, glacial retreat and related impacts and sea level rise; the efforts focused least on salinization and desertification;
- 28 organizations reported efforts focusing on strengthening dialogue, coordination and coherence: The efforts focused mostly on loss of biodiversity; the efforts focused least on ocean acidification, salinization and desertification.

10 organizations reported efforts focusing on enhancing action and support: The efforts focused mostly on loss of biodiversity; the efforts focused least on sea level rise, ocean acidification, salinization [4]

4. Other products of the ExCom related to the issue of slow onset events aiming to further the link between science and the policy process

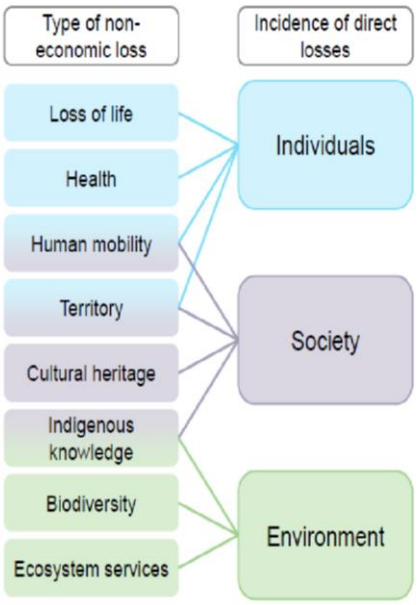
[4] Available at: https://unfccc.int/sites/default/files/resource/activity_b_soe_assesment_feb_2018.pdf.

- Work towards slow onset events (Poster for the 8th Research Dialogue) (2016 during SB 44),
- Work towards catalyzing further action (Poster for the 8th Research Dialogue) (2016 during SB 44),
- Letter to the Chair of the SBSTA requesting to consider slow onset events as a possible topic for the research dialogue to be held at SBSTA 44 or for future research dialogues (2016 during SB 44),
- Invitation to relevant organizations and experts to collaborate with the Executive Committee to facilitate access to information, including through collaborative channels or databases, and technologies to track the impacts, and enable approaches to address loss and damage associated with the adverse effects of climate change, including slow onset events (2016),
- What are you doing to address the risks of slow onset events? (Photo campaign) (2017 during COP 23).

Annex III - Repository of information related to the thematic area of non-economic losses

1. Synopsis of the technical paper on non-economic losses [5]

The synopsis of the technical paper on non-economic losses, mandated by COP 18, showcases the following types of non-economic losses and the related incidence of direct losses on individuals, society, and/or the environment:



The synopsis further outlines the following **recommendations** based on the key findings of the technical paper on non-economic losses:

- Recognizing, assessing and managing the risk of non-economic loss should be a central aspect of climate change policy.
- Policymakers should make use of the full range of available assessment and evaluation techniques. The suitability of each depends on institutional contexts as well as the problem at hand.
- A detailed quantification of non-economic loss should rely on a number of different metrics, not just a single number representing the "total non-economic loss".
- Policymakers should make the use of non-economic evaluation techniques a requirement in project appraisal.
- Policymakers and the international community should make the removal of adaptation barriers an immediate priority for adaptation assistance in developing countries, whether the barriers are institutional, funding-related, policy-related, market-related, cognitive[6]

[5] Available at: https://unfccc.int/files/adaptation/cancun_adaptation_framework/loss_and_damage/application/pdf/non_econ_losses_synopsis.pdf.
[6] FCCC/TP/2013/2.

Annex IV - Repository of information related to the thematic area of comprehensive risk management

1. Compendium on comprehensive risk management approaches

The ExCom compendium on comprehensive risk management approaches published in 2019 is based on over 340 approaches identified from across five geographical regions and provides an overview of approaches to risk assessment, risk reduction, financial risk transfer, risk retention, and transformational approaches, as well as enabling environments for those approaches. The below outlines recommendations and key findings identified for each of these areas.

The compendium includes the following recommendations regarding the carrying out of risk assessments:

- It is important for risk assessments to be dynamic, and to be conducted ahead of the manifestation of any risks that may be faced;
- Risk assessments should take into account the broader context and consider multiple risks; In order for risk assessments to be useful and effective, the target audience must be clearly determined in order to avoid over-engineering and over-resourcing;
- Uncertainties and limitations of risk information need to be clearly communicated;
- Risk information, and accompanying modelling metadata, need to be scientifically rigorous, and open for examination by independent reviewers;
- By encouraging and further developing the creation and use of open data, those undertaking risk assessments can help to improve the quality and availability of this data;
- Collaboration, cross-disciplinary and also cross-sectoral at all levels, helps to produce usable risk assessment products. Collaboration should, to the extent possible, involve communities to raise awareness and build consensus;
- A sense of ownership should be created among countries, communities, individuals and even volunteers (e.g. crowdsourcing data collection) throughout the risk assessment process, e.g. through their active involvement in the assessment or data gathering since ownership makes it more likely that actors will share and act upon the analysis;
- Communicating risk information, which is well targeted, timely and interactive, helps to raise awareness of potential impacts and hazards;
- Innovation, such as software for open-source risk and hazard mapping, promote progress in risk assessment.[7]

With regard to the issue of risk reduction, the compendium indicates that systems to reduce current climate risk are more successful if:

- Risks are recognised as dynamic and are mainstreamed and integrated into development policies, strategies, and actions, and into environmental management;
- Legislation for managing disaster risks is supported by clear regulations that are effectively enforced across scales and complemented by other sectoral development and management legislations where risk considerations are explicitly integrated;
- Disaster risk management functions are coordinated across sectors and scales and led by organizations at the highest political level;
- National development and sector plans include considerations of disaster risk;
- Risk is quantified and factored into national budgetary processes;
- Decisions are informed by comprehensive information about observed changes in weather, climate, and vulnerability and exposure, and historic disaster losses, using a diversity of readily available tools and guidelines;
- Early warning systems deliver timely, relevant, and accurate predictions of hazards, and are developed and made operational in partnership with the public and trigger effective response actions;
- Strategies include a combination of hard infrastructure-based approaches and "soft" solutions such as individual and institutional capacity building and ecosystem-based responses. [8]

[7] https://unfccc.int/sites/default/files/resource/FINAL_AA3_Compendium_September_2019%28revised%29.pdf, page 7.
[8] https://unfccc.int/sites/default/files/resource/FINAL_AA3_Compendium_September_2019%28revised%29.pdf, page 17.

On the issue of financial risk transfer, the compendium outlines the following important factors for effective risk transfer processes and markets as including:

- An overall enabling environment - its absence is often a strong market barrier in developing countries;
- Clarification of the allocation of disaster costs so that all economic agents, including different levels of governments, assume responsibility for the risks they face and undertake actions to ensure that these risks are managed properly;
- Sound financial strategies with a carefully designed mixture of financial instruments, given respective contingent liabilities of each actor under the prevailing risk allocation;
- Availability of reliable and consistent data on hazards, exposures and vulnerabilities to reduce uncertainties characterizing the risk assessment process and to lower the cost of risk transfer tools;
- A well-developed financial sector linked to formal international markets as well as to less formalized financial services for lower-income communities. Banks and insurers need to have adequate levels of capital to absorb the costs of disasters as well as operational capacity to pay claims promptly in the event of a disaster.
- Private sector expertise and experience in relevant markets. This proves invaluable to making decisions on the selection of service providers, pricing, policy conditions, and client relations. [9]

Regarding the issue of risk retention, the compendium outlines the following key findings:

- Applying the risk layering concept, typical risks that may be retained by the insured party (government or affected populace) are those with high frequency and low severity, meaning those that are highly predictable and that cause mild damage (e.g., floods), in which cases the costs of insurance would outweigh its benefits;
- Retaining risks could lead to liquidity problems of a country after a disaster due to the required concerted disbursements – in this case, a country would need to consider risk financing or insurance instruments;
- Risk retention instruments are subject to pressures from the political economy, e.g. when annual appropriations to a reserve fund pile up due to a lack of disaster;
- Government financial rules and procedures in many countries may not be conducive to a fast flow of funds after disasters – e.g. budget allocations and reallocations usually need legislative approval which can be slow;
- In cases where disaster funds are separated from normal budgetary operations and are overseen by a designated institution with systems for rapid dispersal, payouts could be relatively quick;
- Countries with a large debt burden should prefer risk transfer instruments rather than risk retention instruments even for moderate frequency disasters since their revenue resources may not be able to sustain the additional debt. [10]

On the issue of transformational approaches, key findings contained in the compendium include:

- Transformations in economic, social, technological and political decisions and actions can enhance adaptation and promote sustainable development;
- Restricting adaptation responses to incremental changes to existing systems and structures, without considering transformational change, may increase costs and losses, and miss opportunities;
- Planning and implementation of transformational adaptation could reflect strengthened, altered or aligned paradigms, and may place new and increased demands on governance structures to reconcile different goals and visions for the future and to address possible equity and ethical implications;
- Progress towards resilient and sustainable development in the context of changing climate extremes can benefit from questioning assumptions and paradigms, and stimulating innovation to encourage new patterns of response. [11] stimulating innovation to encourage new patterns of response. [12]

The compendium identified the following four broad aspects to be key enablers for comprehensive risk management:

[9] https://unfccc.int/sites/default/files/resource/FINAL_AA3_Compendium_September_2019%28revised%29.pdf, page 32.
[10] https://unfccc.int/sites/default/files/resource/FINAL_AA3_Compendium_September_2019%28revised%29.pdf, page 50.
[11] https://unfccc.int/sites/default/files/resource/FINAL_AA3_Compendium_September_2019%28revised%29.pdf, page 61.
[12] https://unfccc.int/sites/default/files/resource/FINAL_AA3_Compendium_September_2019%28revised%29.pdf, page 61.

- Strong leadership and investment by national and local governments, particularly by the latter, through policies, programmes and institutions they improve, create and dedicate to building disaster resilience;
- Community involvement wedded to knowledge and education which is linked to government spawn initiatives or support. Case studies have shown that knowledge empowers communities to become active participants in government-initiated programmes, and to take ownership of such programmes;
- Similar to knowledge, another empowering factor for successful risk management are resources. When appropriate resources are available, such as funding, human resources and capacity as well expertise and technical capability, communities are better empowered to deal with risk;
- Finally, the sharing of good practices across countries and regions is an important success factor. While each country and even district or province has its own unique situation, there are standard good practices in areas such as risk assessment, risk reduction and education that can be adapted to local realities. [13]

2. Policy brief on Technologies for Averting, Minimizing and Addressing Loss and Damage in Coastal Zones

The Policy brief on Technologies for Averting, Minimizing and Addressing Loss and Damage in Coastal Zones[14] was finalized by the ExCom, jointly with the TEC, in 2020. The summary contained in the policy brief contains the following issues highlighted with regard to technologies for coastal risk assessments, coastal zone risk retention, and recovery and rehabilitation of coastal zones:

Technologies for coastal risk assessments

- The detailed understanding of the topography, hydrology and other characteristics of coastal zones necessary for producing quality risk assessments is dependent on the availability and accessibility of high-quality and timely data, which often come from remote sensing technology. Limited access to existing data, a lack of collection of local data, a lack of knowledge of data as well as limited technical capacity for geospatial data processing hinder risk assessment activities and risk management decision-making in coastal zones.
- Appropriate methods and tools are required to consider multiple types of hazards (rapid and slow onset events) and governance scales (global, regional and local) and process the complex interactions they involve. In areas where the availability of technology and data is limited, this presents major challenges, especially to determining social and economic impacts.
- International partnerships are important for countries' joint efforts and for sharing knowledge and experiences of coastal risk assessment. Such partnerships require a sense of urgency, political willingness and commitments, incentives and budget allocation.

Technologies for coastal zone risk retention

- Technologies for directly managing coastal zone risk, referred to as risk retention, can take several forms, including structural/engineered measures, organizational and financial planning, legal and regulatory measures, ecosystem-based approaches, contingency planning and innovation. These approaches provide measures for the protection, retention and sustainable development of coastal zones.
- Loss or damage associated with slow onset climatic processes can be partially addressed through resource management, awareness- and capacity-building, land-use planning and management, contingency planning, research, development and innovation. In undertaking these efforts, mainstreaming responses to slow onset climatic processes into sectoral policies and plans and incorporating local and indigenous knowledge is imperative.
- Improving technologies for managing coastal zone risk is a continuous process and should be supported by experience-sharing across regions. Sharing knowledge and practices more systematically will help address the challenges of developing climate-resilient technologies.

Technologies for recovery and rehabilitation of coastal zones

- Existing international programmes and mechanisms provide some support for recovery and rehabilitation efforts

[13] https://unfccc.int/sites/default/files/resource/FINAL_AA3_Compendium_September_2019%28revised%29.pdf, page 66.

[14] Available at: https://unfccc.int/ttclear/misc_/StaticFiles/gnwoerk_static/2020_coastalzones/b9e88f6fea374d8aa5cb44115d201160/3863c9fabdf74ea49710189acbf6907a.pdf

in respect of sudden onset events in developing countries; such efforts rely on data that is acquired and processed rapidly. Recovery and rehabilitation outcomes in certain countries rely on such programmes and mechanisms for human, financial, or other resources, and to facilitate risk-aware, climate-adaptive, and development-focused recovery objectives.

- Global agendas enhance the use of policy and regulation tools that are relevant to managing climate risks in coastal zones, and such tools have been increasingly introduced in recent years. In order to facilitate more comprehensive and long-term approaches for rehabilitation and recovery, national adaptation plans and disaster risk reduction strategies should be harmonized, made coherent with and link to global agendas.

- New international partnerships are being established with the aim of supporting governments in the process of integrating climate risks into social protection policies. Such partnerships help low-income communities recover more quickly following disasters. Investing in technologies to reduce disaster risks with a focus on prevention and preparedness, while also ensuring effective emergency response and rehabilitation, is crucial for addressing potential loss and damage associated with climate change impacts in coastal zones. Further investment in social protection programmes and technologies, with a focus on prevention and preparedness and prioritizing the people most vulnerable to climate change, is also crucial for addressing loss and damage. Involving indigenous peoples and using local knowledge can strengthen recovery and rehabilitation technologies. The use of local and traditional knowledge can be scaled and replicated vis-a-vis organizational strengthening.

3. Stakeholder engagement workshop on strengthening the capacities for observation and risk assessment in the context of loss and damage associated with climate change

The stakeholder engagement workshop on strengthening the capacities for observation and risk assessment in the context of loss and damage associated with climate change,[15] organized by the ExCom in 2019 in collaboration with the UN Office for Disaster Risk Reduction (UNDRR) and the World Meteorological Organization WMO, resulted in the following summary of main points raised during the workshop:

Data and Climate Information and Monitoring Systems

- At the national level, systematic data collection, management and integration across ministries is important to support assessments.

- Strengthened national observation systems and open sharing of relevant data are essential to monitoring and assessment of adverse climate impacts, and for improving weather, climate modelling and forecasting.

- There is a scientific gap and need to improve the ability to document and unambiguously associate data on losses and damages with specific hydro-meteorological events. The workshop identified a gap in data analyses which discuss attribution (to the extent possible), include multiple hazards and impacts on systems (rapid onset on top of underlying slow onset events) and multiple types of losses (economic and non-economic).

- Facilitating risk-informed sustainable development requires robust data and statistics that are timely, accurate, disaggregated, people-centered and accessible, and data that enables the capture of progress and that can direct investments accordingly.

- Observational data is an important building block for loss and damage databases to the degree that such data is used by practitioners, scientists and policymakers.

- There are promising examples of systematic cataloguing of high-impact events, including the assignment of unique identifiers for each, to improve risk assessments, climate modelling and forecasting.

- Continuous and sustained observation and monitoring is essential to understanding the causal contributions of exposure and vulnerability to losses. The observation and monitoring systems of technical agencies are essential to the tracking of hazards, their trends, frequency, severity and distribution.

Multi-Hazard Early Warning Systems (MHEWs)

- Multi-hazard risk observation, assessment and systems are the foundation of CRM approaches and are effective at reducing loss and damage.

[15] Information available at: https://unfccc.int/process-and-meetings/bodies/constituted-bodies/executive-committee-of-the-warsaw-international-mechanism-for-loss-and-damage-wim-excom/stakeholder-engagement-workshop-on-strengthening-the-capacities-for-observation-and-risk-assessment.

- Setting up impact-based early warning systems for all timescales can help identify vulnerable communities, supported by local knowledge.
- Existing, established, and highly effective MHEWSs currently in operation in developed countries can be similarly established in countries and regions where they are currently lacking, but this would require technical assistance and financing.

Capacity-Building and Technology

- Beyond equipment and technology for collecting a fuller range of climate impacts data, capacity for climate risk analysis and modeling is essential in developing countries.
- Integrated, harmonized and well-functioning early warning systems requires having the right people, competencies and entities to ensure effectiveness.
- Sustained investment in currently available capacity-building initiatives is needed.
- Securing sufficient resources to enable developing countries participate in global climate platforms can facilitate capacity-building for observation and risk assessment.

Communication

- Regulatory arrangements and open source data in partnership with relevant partners could enhance comprehensive risk management.
- Clear mandates and designation of responsibilities between climate services, disaster risk management, and adaptation planners at the country level can improve communication of climate and risk information.
- Hybrid coordination systems incorporating top-down and bottom-up approaches, harmonization of different national institutions and integration can facilitate CRM approaches.
- Communication, awareness and messaging on risk management can benefit from local contextual knowledge.
- There is a need to ensure that rapid and slow onset events are communicated to the public in a clear and understandable manner. That includes clear, understandable, actionable language which contributes to prevention of loss of life and property. The messaging needs to connect to the audience at local, national, regional and global levels.

Climate Risk and Loss and Damage

- Climate risk assessments should inform investments and national development planning.
- Climate risk builds on and accentuates our risks that countries face and must be considered in this broader context. Methodologies to support decision-making require further advancement and testing to be of practical use to policymakers in handling multiple risks and simultaneous climate shocks and events.
- Technical communities often use quantitative methods such as models to better "see" risk in the present or near future, and so the view of risk is inherently shaped by the tools used to describe it. Most models have been based on historical data and observations, assuming that the past is a reasonable guide to the present and the future. But this assumption may often no longer hold for climate change.

Coherence, policy planning and coordination

- Close collaboration between national meteorological and hydrological services and national disaster management offices is needed to establish interoperable datasets about the adverse impacts of climate change for tracking losses and damages associated with the events.
- Centralized coordination mechanisms among DRR, CCA and development planning can strengthen the link between the different communities in order to address the continuum of risk and contribute towards effective achievement of SDGs and Sendai Framework targets.
- Effective governance should consider multiple risks and clarify accountability and responsibility on the part of individual and institutional decision makers. [16]

[16] Available at: https://unfccc.int/sites/default/files/resource/Report%20of%20the%20Stakeholder%20Workshop.pdf, pages 2 to 3.

Annex V - Repository of information related to the thematic area of human mobility

1. First phase of implementation (2017 to 2019) of the plan of action of the task force on displacement

The first phase of implementation of the plan of action of the task force on displacement resulted in summary reports on the following activities:

- Activity I.1: Mapping Human Mobility and Climate Change in Relevant National Policies and Institutional Frameworks
- Activity I.2: Synthesizing the State of Knowledge to Better Understand Displacement related to Slow Onset Events
- Activity II.1: Mapping Workplans of Bodies/Work Programmes under the UNFCCC on Displacement
- Activity II.2: Mapping Human Mobility (Migration, Displacement and Planned Relocation) and Climate Change in International Processes, Policies and Legal Frameworks
- Activity II.3: United Nations System's Mandates with respect to Averting, Minimizing and Addressing Displacement related to Climate Change: Considerations for the Future
- Activity II.4: Mapping of Existing International/Regional Guidance/Tools on Averting, Minimizing and Addressing Displacement and Durable Solutions
- Activity III.1-3: Systematic Data Collection and Monitoring of Displacement and Its Impacts at Local, National, Regional and International Level

In 2018, the task force on displacement also published an information paper outlining the current landscape of the work on displacement in the context of workplans of bodies and work programmes under the UNFCCC.[17]

Various other stakeholders prepared a number of pieces of information, which informed the work of the taskforce on displacement:

- A paper on the United Nations system's mandates with respect to averting, and addressing displacement related to climate change: considerations for the future, [18]
- A paper mapping Human Mobility and Climate Change in Relevant National Policies and Institutional Frameworks, [19]
- A paper synthesizing the state of knowledge to better understand displacement related to slow onset events, [20]
- A paper mapping Human Mobility (Migration, Displacement and Planned Relocation) and Climate Change in International Processes, Policies and Legal Frameworks, [21]
- A mapping of existing international and regional guidance and tools on averting, minimizing, and facilitating durable solutions to displacement related to the adverse impacts of climate change, [22] and
- A systematic data collection and monitoring of displacement and its impacts at local, national, and international level to inform comprehensive needs and risk assessments for the formulation of policy and plans. [23]

[17] Available at: https://unfccc.int/sites/default/files/resource/tfd_activity_i.2_08_feb_2018(1).pdf.

[18] Available at: https://unfccc.int/sites/default/files/resource/WIM%20TFD%20II.3%20Output%20final%20-%20updated%20171018.pdf.

[19] Available at: https://unfccc.int/sites/default/files/resource/20180917%20WIM%20TFD%20I.1%20Output%20final.pdf.

[20] Available at: https://unfccc.int/sites/default/files/resource/WIM%20TFD%20I.2%20Output.pdf.

[21] Available at: https://unfccc.int/sites/default/files/resource/WIM%20TFD%20II.2%20Output.pdf.

[22] Available at: https://unfccc.int/sites/default/files/resource/WIM%20TFD%20II.4%20Output.pdf

[23] Available at: https://unfccc.int/sites/default/files/resource/WIM%20TFD%20III.1-3%20Output.pdf.

Annex VI - Repository of information related to the thematic area of action and support

1. Synthesis of the Technical Paper on gaps in existing institutional arrangements within and outside of the Convention to address loss and damage, including those related to slow onset events

The 2013 synthesis of the Technical Paper on gaps in existing institutional arrangements within and outside of the Convention to address loss and damage, including those related to slow onset events,[24] highlighted the following **general trends**:

- Across all regions, a larger number of institutional arrangements focus on addressing loss and damage associated with extreme weather events compared to those with focus on slow onset events;
- No institutional arrangement focusing specifically or solely on addressing the non-economic losses associated with climate change impacts was identified;
- Relatively few institutional arrangements are in place to address transboundary issues related to loss and damage;
- Institutionalized provision of financial support to address loss and damage is mostly centrally placed at the global level;
- Coordination and collaboration gaps are present, despite the large number of mapped institutional arrangements;
- Existing institutional arrangements provide a good basis and opportunities for further enhanced action and support to address loss and damage.

2. Information paper on best practices, challenges and lessons learned from existing financial instruments at all levels that address the risk of loss and damage associated with the adverse effects of climate change

The information paper on best practices, challenges and lessons learned from existing financial instruments at all levels that address the risk of loss and damage associated with the adverse effects of climate change,[25] prepared by the ExCom in 2016 on the basis of submissions received, contained various **lessons learned** including, inter alia, that:

- Enabling environments are central to the effective employment of financial instruments,
- Putting in place financial instruments requires rigorous risk assessment,
- Comprehensive climate risk management requires a smart combination of financial instruments and tools,
- Linking financing for disaster risk management & adaptation bears large potential for minimizing, averting and addressing loss and damage,
- Ongoing capacity-building and appropriate donor engagement is required for the effective use of financial instruments,
- Specific financial instruments and tools are needed to reach the most vulnerable,
- Public-private partnerships can enhance effectiveness of financial instruments, and that
- Existing financial instruments and tools may be inadequate to address the full spectrum of losses and damages associated with the adverse effects of climate change.[26]

3. Technical paper on elaboration of the sources of and modalities for accessing financial support

[24] Available at: https://unfccc.int/files/adaptation/cancun_adaptation_framework/loss_and_damage/application/pdf/inst_arrangements_synopsis.pdf.

[25] The information paper constitutes a summary based upon submissions received in the context of Action Area 7(d) of the initial two-year work plan of the Executive Committee of the Warsaw International Mechanism for Loss and Damage under the UNFCCC, available at: https://unfccc.int/files/adaptation/groups_committees/loss_and_damage_executive_committee/application/pdf/aa7_d_information_paper.pdf.

[26] See https://unfccc.int/sites/default/files/aa7_d_information_paper.pdf, pages 14 to 21.

The 2019 technical paper on elaboration of the sources of and modalities for accessing financial support,[27] contained various initial findings, the below provides an excerpt of said findings.

Initial findings with regard to **information gaps**, including:

- There are presently no standard methodologies or formats for specific reporting on investment in reducing, preventing or avoiding loss or damage from their interventions.
- Lack of tracking and reporting is partially owing to a lack of common understanding of the concept of addressing loss and damage necessary from a reporting perspective.
- The effectiveness of adaptation investment is currently not measured in a way conducive to assessing avoided losses or damage from such investment.
- There is no single set of universally accepted outcome or impact metrics for adaptation (or for non-economic losses from climate change).
- Estimates of adaptation finance are more difficult to compile than those of mitigation finance, given the context-specific and incremental nature of adaptation finance (i.e. flows are frequently reported for the proportion of the project or investment that covers climate change adaptation activities).
- Scaling up efforts to address loss and damage will require that funds and initiatives channeling finance begin to develop more robust mechanisms for identifying a baseline and the initiatives' contribution to reducing losses and damage against that baseline.

With regard to the issue of **access**, initial findings include, inter alia, that:

- Currently, available grant-based finance is comparatively low or not sufficient in scale or complexity to address the level of risk transfer and transformational approaches, which would benefit from a larger scale of finance which could be mobilized by other types of (or combination of) instruments, such as concessional loans, equity contributions and guarantees, while also noting that transformational changes can start with incremental changes that lead to modifications in behaviour or systems.
- Poorer populations, as well as women, youth and other marginalized communities, are particularly vulnerable to the adverse effects of climate change owing to the multiple risks that their livelihoods face. Their financial literacy and resource base are often minimal, while many financial instruments require preconditions, such as a certain level of liquidity or creditworthiness that the most vulnerable are not able to meet. Focusing on systems that support the poorest segments of society without burdening them further would help to avoid the economic or non-economic loss and damage that affects these segments of communities.

With regard to the issue of **capacity**, initial findings include that:

- Adequate capacities are required to generate and use climate and financial data and information effectively, establish regulatory and policy environments which remove market barriers, evaluate risk exposure and determine coverage needs, develop effective contingency and implementation plans, and identify bankable adaptation options which would lead to robust financing flows.
- The management of climate finance or DRR resources requires effective governance and institutional capacities. The increase in regional and national accredited entities is most notable. At the same time, institutions need not only to be increasingly able to meet fiduciary, environmental and social safeguard requirements for accessing funds but also to develop the internal capacity to assess and manage complex risk pool and risk-sharing mechanisms.

Further initial findings also included:

- The timescales and types of instruments deployed will need to be complementary in addressing extreme as well as slow onset events that require different types of actions and financing. Through a risk layering analysis, risks can be categorized into different segments according to their potential frequency and severity. Preventive and risk reduction measures can contribute to strengthening adaptive and anticipatory capacity of communities and countries. Emerging practices suggest that the risk posed by more severe and less frequent events could be transferred through a range of risk transfer tools. A smart combination of such instruments would provide the means to foster sustainable development, and at the same time encourage risk reduction measures. Financial approaches to deal with specific categories of loss or damage, such as those associated with slow onset events, could be further pursued.

[27] FCCC/TP/2019/1, paragraphs 142 to 157.

- Funding sources under their various thematic labels are beginning to more frequently overlap and interact. Designed and implemented comprehensively, such tools can leverage the strengths and alleviate the weaknesses of tools used in isolation. Comprehensive design and implementation can create a continuum of support for addressing the multifaceted aspects of climate change. Further efforts could be made to better share lessons learned regarding comprehensive risk management and financial instrument development and deployment, as well as the scale at which financing is developed among budget and planning units not only of national governments but also at the subnational and local level.
- Many of the financial instruments are not mutually exclusive in supporting different dimensions of the risk management approaches, but rather incorporate multiple functions in order to allow adaptability and flexibility in different circumstances
- Territory, human mobility and cultural identity currently are not well covered. Given the infancy of tracking adaptation finance, linking mitigation finance to reduced residual impacts, and the lack of implicit or explicit coverage of residual impacts in risk management and results frameworks, it is not possible to assess the extent to which non-economic losses are addressed by current climate finance funds and channels.
- Innovative, flexible instruments that respond quickly, such as forecast-based financing and contingency funds, are a useful tool for scaling up immediately available finance when extreme events occur.
- There is a noticeable absence of information related to private sector finance relevant to averting, minimizing and addressing not only adaptation but also aspects of loss and damage.
- Finding more robust ways to work with the private sector in leveraging existing multilateral and bilateral funds to crowd in private sector funds would help to scale up resources.

4. Other activities of the ExCom workplan in relation to capacity-building

The following outlines other activities contained in the ExCom workplan, which refer to the issue of capacity-building:

a) Inviting the Paris Committee on Capacity Building (PCCB) and other relevant agencies to identify capacity gaps in addressing loss and damage and to recommend ways to address the gaps;

b) Inviting relevant actors to organize regional stakeholder workshops to build capacity for the use of comprehensive risk management guidelines, including using feedback from test cases and any pilot projects they have identified;

c) Invite the Durban Forum on capacity-building[28] to consider dedicating one of its future annual in-session events, which aim at bringing together relevant stakeholders involved in capacity-building, to the issue of loss and damage and related aspects;

d) Develop actions to address capacity-building for addressing loss and damage on the basis of recommendations emerging from (a–c) above and invite relevant actors to support their implementation, including consideration of the framework for capacity-building in developing countries established under decision 2/CP.7.[29]

5. Suva expert dialogue

The Suva expert dialogue,[30] mandated by COP 23, resulted in the following **key takeaways** as identified by the ExCom:

1. 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.
2. 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, socioeconomic data and information on non-economic assets. Such assets include societal/cultural identity, territory, indigenous knowledge and ecosystem services.

[28] See https://unfccc.int/cooperation_and_support/capacity_building/items/6802.php.

[29] See https://unfccc.int/process-and-meetings/bodies/constituted-bodies/executive-committee-of-the-warsaw-international-mechanism-for-loss-and-damage-wim-excom/areas-of-work/action-and-support/capacity-building-for-loss-and-damage.

3. 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.

4. 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 pre-emptive efforts and contingency arrangements. Understanding the context-specific nature of the risks and challenges across different time horizons is critical to averting, minimizing and addressing loss and damage associated with the adverse effects of climate change, which includes and in some cases involves more than, that which can be reduced by adaptation.

5. 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.

6. 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.

7. 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.

6. Standing Committee on Finance Forum on financial instruments that address the risks of loss and damage associated with the adverse effects of climate change

The 2016 Forum of the Standing Committee on Finance (SCF), organized in collaboration with the ExCom, focused on the issue of financial instruments that address the risks of loss and damage associated with the adverse effects of climate change.[31] The below is an excerpt from the **conclusions of the SCF forum**:

- In order to make instruments operational and sustainable, having a good understanding of the risks was regarded as a key prerequisite. This involves assessing the nature of the hazard (rapid- versus slow-onset events), the exposure level and the vulnerability of communities to the impacts of climate change. However, as identified, countries often face capacity constraints in data gathering and risk modelling, as well as a lack of accessible, complete and adequate climate change data on which to base financial instruments. On this aspect, the forum underlined the importance of providing support to build the capacity of institutions.

- The technical inputs and country examples showed that there is a diverse set of financial instruments that can be used to address the risks of loss and damage on the basis of different country contexts and the multi-causality of the risks faced. This means that there is no 'one-size-fits-all' approach and no single financial instrument can cover all the risks associated with loss and damage.

- Taking into account the matters raised above, complementary approaches are needed that build long-term resilience while putting countries in a position to be able to immediately respond to disaster after they occur. Finding smart ways of combining instruments will be crucial for addressing the risks of loss and damage in a comprehensive and holistic manner. In this regard, beyond finance, critical elements include: enhancing enabling policies to facilitate comprehensive risk management, strengthening capacities of communities and involving the private sector.

- Major gaps still exist, particularly with regard to addressing slow-onset events. More work will be needed on how to address slow-onset events, because current approaches are directed towards extreme weather events and other rapid-onset events. On the basis of its existing experiences and data utilized for existing instruments, the insurance sector can contribute to the discussion and support the development of new instruments in this field.

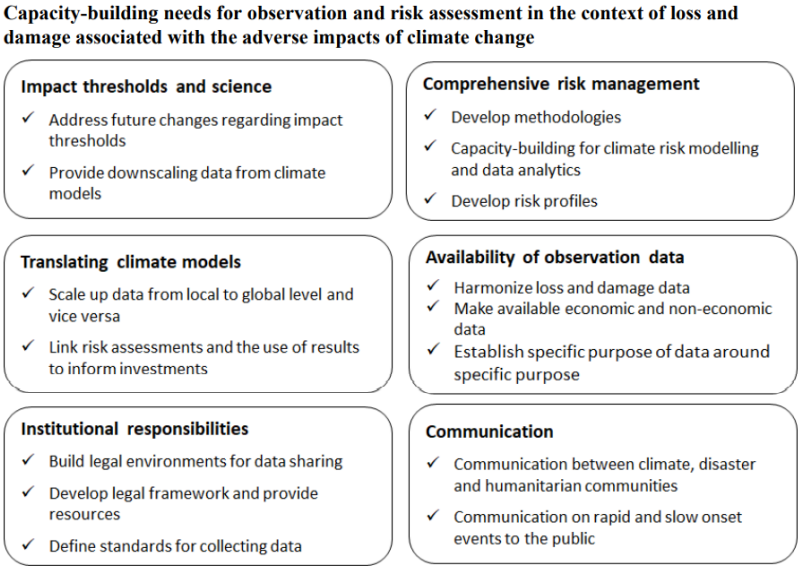
- While opportunities for scaling up financial instruments exist, governments can promote the take-up of good practices by strengthening policies and regulatory frameworks that incentivize public and private stakeholders to avert, minimize and address loss and damage. This may include public–private partnerships to identify the most suitable financial instrument tailored to the local context.

[31] Information available at: https://cop23.unfccc.int/topics/climate-finance/events-meetings/scf-forum/2016-forum-of-the-standing-committee-on-finance.

- Greater discussion will be needed on the sustainability, affordability and accessibility of financial instruments, in particular for the most vulnerable.
- Importance of learning from experiences of the private sector and existing initiatives, including humanitarian efforts for disasters that are not related to climate change replicate and scale up good practices. For this, it remains important to engage and share knowledge among different stakeholders from the public and private sphere, as well as from different sectors, to ensure that a broad range of actions is identified and pursued. Relating to this, the need for an institutionalized platform in which stakeholders, including public and private financial institutions, can discuss best practices, enhance regional cooperation and strengthen public–private partnerships was mentioned as a possible way forward. [32]

7. Capacity-building needs highlighted during the 2nd Capacity-building Hub

The ExCom held an event during the 2nd Capacity-building Hub at COP 25, which highlighted the following capacity building need for observation and risk assessment in the context of loss and damage associated with the adverse impacts of climate change:[33]



[32] FCCC/CP/2016/8, paragraphs 61 to 67.

[33] Information available at: https://unfccc.int/2nd-capacity-building-hub/Loss-and-Damage. See also FCCC/SB/2020/3, page 11.