

11th meeting of the Executive Committee of the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts, Bonn, Germany, 10-12 March 2020

Item 4: Collaboration with the Technology Executive Committee on the joint policy brief on technologies for averting, minimizing and addressing loss and damage in coastal zones

Background paper

About this document

This document provides background, progress and key milestones on the development of a joint policy brief on technologies for averting, minimizing and addressing loss and damage in coastal zones by the Executive Committee of the Warsaw International Mechanism for Loss and Damage and the Technology Executive Committee.

The Excom, having considered the information provided in this background paper, will be invited to:

- (a) Take note of the progress on the intersessional work of the joint working group, experts and relevant organizations;
- (b) Endorse the draft joint policy brief, including the summary for policymakers;
- (c) Provide any further guidance as necessary towards dissemination of the final product at SB 52.

I. Background

1. The Executive Committee of the Warsaw International Mechanism for Loss and Damage (Excom) and the Technology Executive Committee (TEC) agreed, at a joint session on 16 March 2018, to develop a joint policy brief on technologies for averting, minimizing and addressing loss and damage in coastal zones with the aim of releasing it at or by COP25 (December 2019). The brief is in the context of the strategic workstream (c), activity 3, of the five-year rolling workplan of the Excom.¹

2. The two committees established a joint working group to work intersessionally, including to develop a concept note. An overview of the key milestones in the development of the joint policy brief is provided in the Figure 1.

3. The secretariat, under the guidance of the joint working group, conducted outreach to relevant experts using various channels. In addition, a call for expressions of interest was also advertised through the loss and damage related pages of the UNFCCC website to enhance inclusivity, transparency and the participatory nature of the joint work by the two committees. A total of 17 experts submitted expressions of interest and actively contributed towards the Excom-TEC joint work (see Annex I).

4. In partnership with the Excom, TEC and the joint working group, an expert dialogue was convened on technologies for averting, minimizing and addressing loss and damage in coastal zones on 17 June 2019 - in conjunction with SB 50 in Bonn, Germany. The expert dialogue was attended by Excom and TEC members, Parties, observer organizations, 11 experts and practitioners as speakers/resource persons/contributors to the policy brief. The outcomes of the dialogue provided relevant inputs into the development of the joint policy brief.

¹ See: <https://unfccc.int/sites/default/files/resource/docs/2017/sb/eng/01a01e.pdf>.

5. Members of the joint working group² provided updates to the Excom on intersessional work at its 9th (April 2019)³ and 10th (October 2019)⁴ meetings.

6. At Excom 10, a draft policy brief was shared with the Excom by the joint working group and there was no additional substantive guidance for changing the brief. Instead, based on the draft policy brief, the Excom recommended that the intersessional work by experts progressed towards the finalization of the joint policy brief.

7. As referred to in paragraph 3 above, the engagement of relevant experts in the WIM–TEC joint work was on a voluntary basis. Due to unforeseen circumstances and a varying degree of voluntary contributions by the collaborating experts, progress in the underlying technical work was more gradual than anticipated. A revised timeline for the completion of the joint policy brief was endorsed at Excom 10 as follows:

- (a) Final Inputs: Excom 11/TEC 20 (spring 2020).
- (b) Release for publication: Post Excom11/TEC 20 (spring 2020).

II. Progress on the intersessional work

8. In line with the concept note and revised time frame, the joint working group, with the assistance of the secretariat, finalized the joint policy brief. The joint working group further developed a summary for policy makers. The drafts of both documents were circulated to the Excom and TEC in February 2020 for review, with feedback incorporated to the final documents (annexes II).

9. The launch of the final summary for policy makers and policy brief is aimed to take place in June 2020, in the margins of SB 52, to accommodate endorsement by the two committees at their next meetings (Excom 11 in March 2020 and TEC 20 in April 2020).

III. Action at Excom 11

10. The Excom will be invited to:

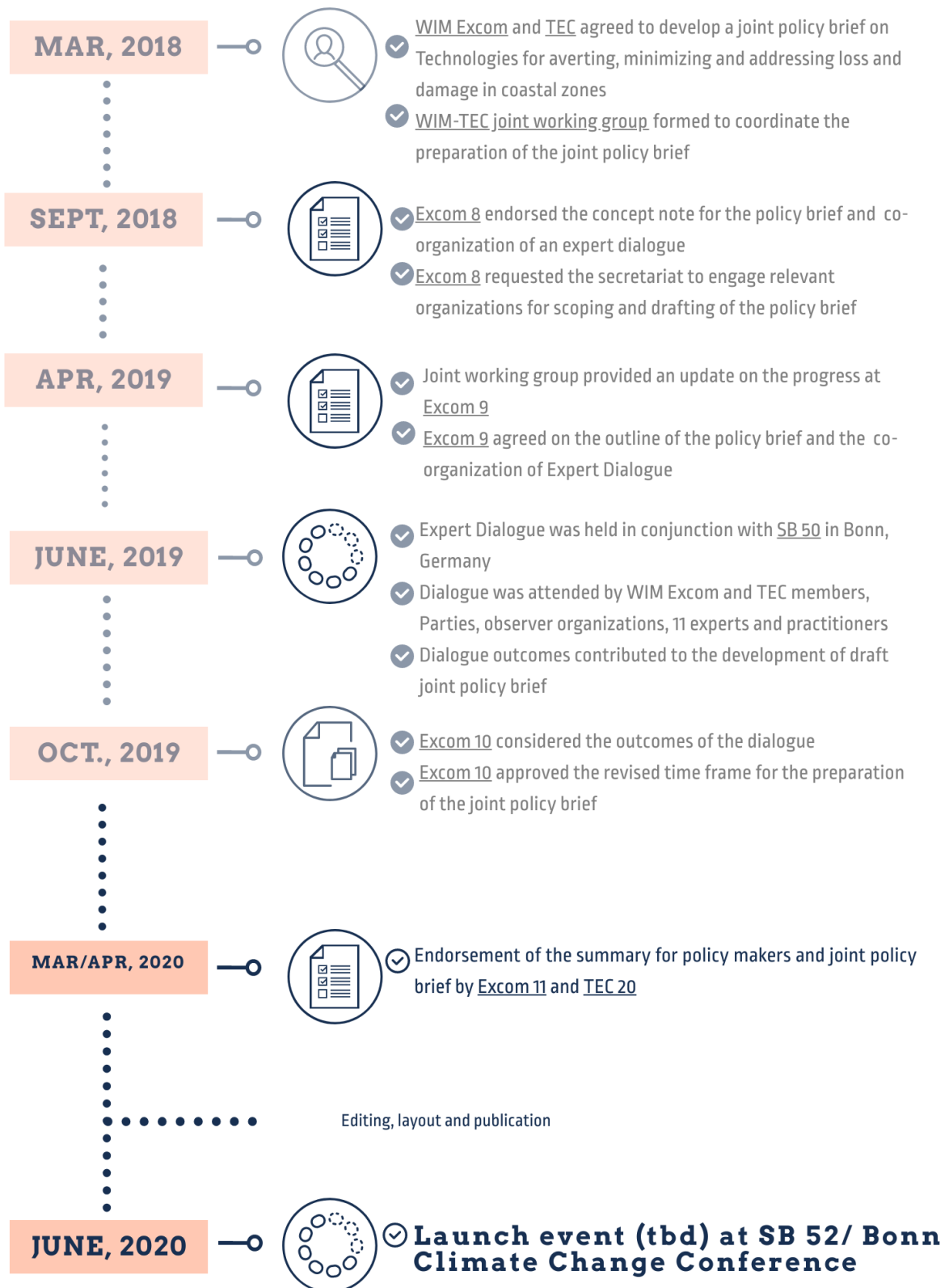
- (a) Take note of the progress on the intersessional work of the joint working group, experts and relevant organizations;
- (b) Endorse the draft joint policy brief, including the summary for policymakers; and
- (c) Provide any further guidance as necessary towards dissemination of the final product at SB 52.

² The joint working group includes two Executive Committee liaison members (Mr. Nedal Katbehbader and Mr. Kimio Takeya who was succeeded by Mr. Yuichi Ono in September 2019) and two representatives of the TEC task force on emerging and cross-cutting issues (Ms. Adelle Thomas and Mr. Mareer Mohamed Husny).

³ See: https://unfccc.int/sites/default/files/resource/Item_5_Excom-TEC%20joint%20policy%20brief_for%20webposting_0.pdf.

⁴ See: https://unfccc.int/sites/default/files/resource/Item_4_Excom-TEC%20joint%20policy%20brief_Oct%202022.pdf.

Figure 1 Summary of key milestones



Annex I: List of Active Contributors

Name⁵	Affiliation
Adelle Thomas**⁶	TEC Member
Adonis Velegrakis	University of Aegean
Brett Rolf*	University of Michigan
Daniel Xie	University of Michigan
Fokko van der Goot	EcoShape
Jacob Rumschlag	University of Michigan
Jeremy Pittman	University of Waterloo
Kanako Iuchi	Tohoku University
Lea Appulo	Wetlands International
Manuel Friedlein	GIZ
Mareer Mohamed Husny**	TEC Member
Martin Saraceno	Ciudad Autonoma de Buenos Aires - Argentina
Melanie Lück-Vogel	Council for Scientific and Industrial Research
Miguel Esteban	University of Waseda
Nedal Katbeh-Bader**	WIM Excom Member
Regina Asariotis	UNCTAD
Solveig Schindler	GIZ
Susanna Tol	Wetlands International
Walter Dragani	Servicio de Hidrografía Naval, Ministerio de Defensa
Yuichi Ono**	WIM Excom Member

⁵ Names with asterisks indicate drafters of the WIM-TEC joint work.

⁶ Names with double asterisks indicate members of the Joint Working Group.

Annex II: Summary section of the draft policy brief (*edited version*)

Management of coastal zones relies on the effective use of diverse data and a wide range of technologies. As climate continues to change, these coastal zones and low-lying areas experience the increased adverse effects of both economic and non-economic loss and damage.

This policy brief provides a synthesis of knowledge on loss and damage experienced in coastal zones and an overview of technologies for averting, minimizing and addressing loss and damage, highlighting tools and methodologies to determine risk, protect coastal zones, build resilience and foster recovery and rehabilitation. The policy brief focuses on technologies needed for risk assessment, risk retention, and recovery and rehabilitation in coastal zones. In addition, the brief explores **how a combination of technologies** can be used to assess, manage and accommodate climate change impacts in a comprehensive manner. These range from hard technologies (e.g. those that monitor and estimate coastal hazards, exposure and vulnerability), to soft technologies (e.g. knowledge and skills training) to organization technologies, known as orgware (e.g. policies, institutional settings, and regulation and governance structures). The brief also illustrates good practices from different regions and possible ways for countries to overcome the challenges to scaling up their use.

In view of the growing needs among countries, in particular developing countries, to prepare for a challenging future, the Executive Committee of the Warsaw International Mechanism for Loss and Damage (WIM Executive Committee) and the Technology Executive Committee commissioned a joint policy brief on technologies for averting, minimizing and addressing loss and damage in coastal zones that would link to mitigation, adaptation and disaster preparedness activities and be compatible with national climate policy frameworks.

Climate change impacts in coastal zones

The intensity of extreme events and slow onset events, including tropical cyclones, severe storm surges, sea level rise and ocean warming and acidification, has been increasing. These hazards threaten countries with substantial populations located along coastal plains and deltas, and in particular, small island developing States (SIDS) and coastal least developed countries (LDCs). Improved observational networks and early warning systems are invaluable to planning and risk management.

The 2019 Intergovernmental Panel on Climate Change (IPCC) Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC)⁷ highlighted the escalating impacts and projected risks of climate change on coastal and marine ecosystems, pointing to the importance of protecting coastal and marine zones. The report underscores the conclusion that the impacts of climate change on coastal zones will be increasingly disruptive at all spatial scales and that, in the course of the twenty-first century, the ocean is projected to be subject to long-term changes that cannot be avoided and irreversible. Understanding the impacts at different scales and the changing condition of the ocean is necessary to effectively adapt.

Comprehensive risk management in coastal zones has the potential to address sudden onset (e.g. tropical cyclones, storm surges) and slow onset (e.g. sea level rise, ocean warming and acidification) hazards, which require different technological considerations. Effective comprehensive risk management of coastal zones requires responsive governance by local institutions which are often constrained by limited technical and financial capacity.

Technologies for coastal risk assessments

The detailed understanding of the topography, hydrology and other characteristics of coastal zones necessary to 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. Given the limited availability of technology and data, 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.

⁷ See: <https://www.ipcc.ch/srocc/>

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 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 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 strategies.

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 by focusing 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.