

WIM Excom-TEC Joint Expert Dialogue

Technologies for Averting, Minimizing and Addressing Loss and Damage in Coastal Zones
17/06/2019

The Executive Committee of the Warsaw International Mechanism for Loss and Damage (WIM Excom) and the Technology Executive Committee (TEC) jointly convened an expert dialogue¹ on technologies for averting, minimizing and addressing loss and damage in coastal zones.

The joint expert dialogue was designed to help facilitate the development of a policy brief on comprehensive risk management in coastal zones. As reflected in the expert dialogue, the policy brief will have sections on technologies for coastal risk assessment, risk retention, recovery and rehabilitation.

Members of the two committees, contributors to the policy brief, Party representatives and other relevant experts participated in the dialogue.

The event was also available for [remote participation](#).

Session 1 - Setting the scene: Climate change impacts on coastal zones

Monika Antosik, WIM Excom Co-Chair, presented the work of the WIM, highlighted the climate sensitivity and importance of coastal zones, and encouraged relevant experts to actively participate in this joint work.

She noted that 2.4 billion people (~40 percent of the world's population) live within 100 km (60 miles) of the coast, and the urgent need to take concrete measures to avert, minimize and address loss and damage in coastal zones.

Dinara Gershinkova, TEC Chair, shared the work of the TEC and its experience in developing similar policy briefs on various topics. She also elaborated on the classification of technologies into hardware, software, and orgware.

Monika and Dinara, on behalf of the two executive committees, expressed their appreciation to the experts, who are drafting and providing technical inputs to the joint policy brief.

Introduction to the comprehensive risk management and other approaches for coastal zones by Jeremy Pittman

Jeremy Pittman, Assistant Professor at the University of Waterloo in Canada, introduced the concept of Comprehensive Risk Management (CRM). CRM, as a risk management framework, consists of multiple elements, including risk assessment, risk reduction, risk transfer and sharing (e.g. insurance, bonds), risk retention, transformative approaches (e.g. coastal retreat) and enabling environment.

¹ Event webpage and resources accessible [here](#).

Representative from Jamaica invited Mr. Pittman to elaborate on the elements of CRM, especially on transformative approaches pertaining to rehabilitation and recovery. Mr. Pittman gave restoration of mangrove systems as an example of transformative approach from a social and ecological perspective. Building back better was another example of such approaches.

Ms. Antosik invited the speaker to provide more examples of CRM in the coastal context, which was the focus of the expert dialogue and the subsequent policy brief. Mr. Pittman shared an example from the Caribbean, where they were using cellphones, different applications and data-collection tools to engage communities to map risks that they were facing. This is an example of bringing technology to enhance understanding of risks, and risk communications.

Christoph Von Stechow, member of the WIM Excom, pointed out the special need of CRM approaches in coastal zones, where communities face multiple risks and compound risks.

Mr. Pittman further highlighted climate sensitivity of coastal zones, as they face risks from both lands and seas.

Representative from Jamaica pointed out the importance of CRM approaches to go beyond international agreement and to have national and local level policy relevance for integrated implementation.

Session 2 - Technologies for coastal zone risk assessments

Yuichi Ono-san, as moderator for this session, invited the panelists to provide an overview of technologies for coastal zone risk assessment, opportunities and challenges in applying such technologies, and any specific examples of the application of such technologies.

Adonis Velegrakis from the University of Aegean (Greece) provided an overview of the chapter on coastal risk assessment, including different types of hazard, exposure and vulnerability assessments at different scopes.

This chapter also provides information on online tools for coastal risk assessments, and list of opportunities and challenges.

Velegrakis pointed out the spatial constraint in providing detailed information and case studies. He also invited the group to comment on whether the joint policy brief will include combined risks, risks that are coming from both the lands and the seas.

Melanie Lück-Vogel from the Council for Scientific and Industrial Research (CSIR) in Stellenbosch (South Africa) presented coastal vulnerability in South Africa (SA).

SA has a long coastline of 3,000 km, including 300 estuaries. 35 percent of the SA population live by the coast. Some of the key challenges include low technical capabilities, limited funding, and slow internet connectivity. She also pointed out challenges in bringing risk assessment solutions at a local level due to lack of skills at the ground level.

Lück-Vogel highlighted Geographic Information Systems (GIS) as a technology option for coastal zone risk assessment, in particular for slow onset events.

Yuichi Ono-san, Excom member to-be (replacing Takeya-san), addressed the complexity of coastal risk management and the need to combine methods and approaches for efficiency

purposes. He highlighted the need of creating national risk and disaster databases in order to better assess local specific needs and prioritize actions.

Ono-san presented successful examples of data collection programs, such as the Asia-pacific Adaptation Information Platform.

Mareer Mohamed Husny, member of the TEC, raised the question of how to apply artificial intelligence in coastal risk management, especially in assessing combined risks in the context of small island States. He also noted the need to downscale global and regional measures to ensure their relevance in the local and national contexts.

Participants also commented on the need to prioritize response measures, to avoid overengineering, and to mobilize more financial and technical support for adequate local response measures.

Session 3 - Technologies for coastal zone risk retention

A panel of experts from Bangladesh, the Maldives, United States and the Netherlands discussed technologies for coastal zone risk retention.

Nedal Katbehbader moderated the session and reiterated the climate sensitivity of coastal zones. He explained the concept of risk retention, as a part of CRM, referring to measures that allow countries to self-insure against the impacts of climate change and build resilience.

Daniel Xie and Harold Rick from University of Michigan discussed chapter 3 of the joint policy brief, which in its current draft focusses on climate change adaptation strategies in three categories: hard engineering (e.g. seawalls, dykes), ecosystem-based climate adaptation (e.g. coral restoration, mangroves), and policy opportunities.

Xie and Rick also presented their work with the Seychelles, which was a collaborative effort with the [Nairobi work programme](#) at the UNFCCC. Their work assessed the risks imposed by storm surges and sea-level rise on critical infrastructure in the Seychelles.

Mirza Shawkat Ali, Director at the Department of Environment (Bangladesh), presented a risk retention project in Bangladesh in collaboration with the Climate Technology Centre and Network (CTCN) and with the Korea institute of Civil Engineering and Building Technology.

Mareer Mohamed Husny, from the Ministry of Environment of the Maldives and a TEC member, presented coastal risk management experience from the Maldives. More than 44 percent of the human settlement and more than 80 percent of critical infrastructure in Maldives are within 100m of the coast.

Husny highlighted some of the key challenges including limited site-specific studies, engineering problems, problems with sourced materials, “one-size fits all” solutions, poor maintenance of the structure, and lack of funding.

Fokko van der Goot from the Wetland International discussed nature-based solutions (NBS) like mangroves that can help manage risk and strengthen nature. NBS provides coastal safety

enabling economy to prosper. Goot also highlighted the co-benefits of NBS, their scalability, and the importance of community ownership as a key factor of success for such projects.

Session 4 – Technologies for recovery and rehabilitation in coastal zones

This session started with a short video on CTCN technical assistance to climate variability in the building sector of Antigua and Barbuda.

Colin McQuistan from Practical Action discussed the importance of working with communities and local actors. He also highlighted the need for technology justice framework, enabling orgware and skills for long-term implementation and maintenance.

McQuistan also presented examples of technologies for recovery and rehabilitation in Bangladesh, including bamboo and mangrove planting, integrated solutions for flooded areas such as salt resistant rice crops or redesigned climate resilient houses

Jeremy Pittman from University of Waterloo (Canada) touched on the importance of new technologies, and in particular smartphones, in creating cooperative networks within the vulnerable communities.

Mr. Malcolm Ridout, Excom member, presented example from the United Kingdom, underlining the importance of private and public funding partnerships.

In closing, the WIM Excom and the TEC reiterated their appreciation to experts, as drafters and technical input providers, for their valuable contribution to this joint work. They have encouraged relevant experts to submit their [expressions of interest](#) to support the development of chapter 4 on recovery and rehabilitation.