



[2018 Understanding Risk Forum](#)

Climate resilience and the effective management of risk in the hydropower sector

Sharing good practice and promoting cooperation

Monday, 14 May 2018

14:00-14:20 **Opening**

With growing populations and improved standards of living, increased demand for low-carbon energy and the associated expansion of renewable energy, hydropower is playing an increasingly important role in addressing the challenges of climate change and climate variability. Hydropower also has the potential to play a new and important role in adaptation to climate change and disaster risk management. Dams can help downstream communities and other users of river basin resources - such as irrigation authorities - to minimize and prepare for flood risks. Improvements and innovation in modelling and machine learning are opening up new opportunities for dams to contribute to integrated risk management, in order to manage risks and also leverage greater benefits across multiple sectoral users and beneficiaries at the river basin scale.

The opening statements, will refer to the objectives of the event:

- i. enhance the understanding of risks within and beyond the hydropower sector
- ii. present and discuss good practices in risk analysis, disaster preparedness, risk management and resilience building, that have positive social, environmental and economic benefits for hydropower and society
- iii. identify opportunities for cooperation between hydropower, risk management, insurance, humanitarian and development sector

Speakers

- **Dr. Pablo Suárez** (Associate Director for Research and Innovation, Red Cross Red Crescent Climate Centre)
 - **Ms. María Ubierna** (Senior Hydropower Analyst, International Hydropower Association)
 - **Dr. Brenden Jongman** (Disaster Risk Management Specialist, Global Facility for Disaster Reduction and Recovery)
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14:20-15:30 **Understanding risks: what, where, why?**

Hydropower dams are vulnerable to changes in risks that can have significant impacts on communities downstream and on energy security. Understanding risk in the context of hydropower is essential to develop strategies to protect communities and assets in the river basin they help to manage. Mitigating risk and preparing for extreme events require clearly defined hydrologic 'triggers' backed up by multidisciplinary analysis.

Speakers

- **Dr. Paul Davis** (Chief Meteorologist, UK Met Office)
- **Ms. Cristina Díez** (Hydropower Analyst, International Hydropower Association)
- **Dr. Jean-Pierre Guiteau** (President, Haiti Red Cross Society)

Moderator

- **Ms. Catalina Jaime** (Senior Risk Adviser, Red Cross Red Crescent Climate Centre)

15:30-15:45 Coffee break

15:45-16:15 **What are the keys to advance in climate resilience?**

Hydropower dams are characterised by their longevity and are traditionally designed on the basis of historical hydrological data. With extreme events exacerbated by climate change, historical data is not enough to design robust and resilient systems in the hydropower sector that aim at enhancing and protecting not only infrastructures but also the society around it. Approaches, recommendations and guidance necessary to enhance climate resilience to cope with the risks of variable climatic conditions will be presented by invited speakers.

Speakers

- **Dr. Emily Wilkinson** (Senior Research Fellow Risk and Resilience, Overseas Development Institute)
- **Mr. Raúl Alfaro-Pelico**, (Lead Climate Change Specialist, World Bank Group)
- **Mr. Iván Rodríguez** (Manager hydropower developments, Comisión Federal de Electricidad)

Moderator

- **Ms. María Ubierna** (Senior Hydropower Analyst, International Hydropower Association)
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16:15-17:15 Forecast-based Financing case

FbF is a mechanism that enables the rapid and flexible implementation of pre-planned early actions based on forecast information and risk data. One of the first FbF projects applied machine learning to forge synergies between hydropower, humanitarian and development sectors in Togo. In collaboration with the Nangbéto Hydropower dam operators, GFDRR supported the development of a flood prediction tool called FUNES, which has enabled dam operators to become increasingly sophisticated in planning releases, while the Red Cross has become increasingly proficient in the rapid deployment of pre-funded disaster preparedness measures to manage flood risk in downstream communities. The Climate Centre will present how this process was made possible and the key lessons and recommendations for future initiatives

Speaker

- **Dr. Pablo Suárez** (Associate Director for Research and Innovation, Red Cross Red Crescent Climate Centre)

17:15-18:00 Rethinking the collaboration between risk practitioners and hydropower

New partnerships between diverse stakeholders can lead to a multiplication of benefits, from improved global flood forecasting to accelerated Forecast-based Financing for effective early action, to better planning and risk-smoothing tools for dam operations, by balancing hydroelectric production with integrated risk management. In this session we will explore the enabling factors for meaningful collaboration between risk practitioners, hydropower and other key actors in this process.

Fishbowl with key questions

- How to integrate changing or new risks?
 - Planning new dam projects: how can robust decision-making help design dams that are robust to climate risks?
 - Hydro-humanitarian cooperation: how can dams & disaster managers engage in risk management and resilience partnerships?
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Tuesday, 15 May 2018

09:00-09:15 **Highlights from previous day**

- **Ms. Catalina Jaime** (Senior Risk Adviser, Red Cross Red Crescent Climate Centre)
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09:15-10:00 **Hydropower sector climate resilience guidelines**

The guidelines will assist hydropower companies to consider climate-related risks in project design and operations and address the needs of the wider financial community, policy-makers and local communities. The beta version will be presented in this session. After testing phase, the guidelines will be launched at the World Hydropower Congress 2019.

Speaker

- **Ms. María Ubierna** (Hydropower Senior Analyst, International Hydropower Association)
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10:00-11:30 **How to foster cooperation across sectors?**

Hydropower dam developers and owners have started to respond to emerging risk. In collaboration with other stakeholders across sectors, good practice is developing all over the world and the capacity of the hydropower sector to deal with shocks is being strengthened, to the benefit of both the sector itself and of communities, businesses and livelihoods downstream. Through an ignite talk series and a group dynamic we will learn from shared experiences to foster further cooperation.

Speakers

- **Mr. Richard Hinton** (Spatial Analysis Manager, George Washington University)
- **Mr. Micha Werner** (Senior hydrologist, Deltares - Associate Professor in Water Resources Management and River Basin Development at IHE-Delft)
- **Mr. Mohamad Irwan Aman** (Senior Manager, Sarawak Energy Berhad)
- **Mr. Ernst Cadet** (Head of Operations at Peligre Dam, Electricité De l'Haiti)
- **Ms. Diana Vázquez** (Infrastructure Program Director, The Nature Conservancy)

Moderator

- **Ms. Cristina Díez** (Hydropower Analyst, International Hydropower Association)
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11:30-11:45 **Coffee break**

11:45-13:00 **High Level discussion: integrating multi-sector multi-hazard risk management at the river basin scale**

The hydropower, policy-making, humanitarian, research and development sectors will discuss how to integrate strategies and develop policies at international and national level to manage risk and build resilience in river basin.

Speakers

- **Dr. Jemilah Mahmood** (Under Secretary General for Partnerships, International Federation of Red Cross and Red Crescent Societies)
- **Mr. Javier García de la Merced** (General Manager of hydropower developments, Comisión Federal de Electricidad)
- **Dr. David Green** (Director of Earth Science Disaster Programme, NASA)
- **Ms. Kara Siahaan** (Senior Officer, International Federation of Red Cross and Red Crescent Societies)
- **Mr. Dwinel Bélizaire** (Director of National Observatory for Environment and Vulnerability, Ministry of Environment of Haiti)
- **Mr. John Hardling** (Head of the CREWS Secretariat, United Nations Office for Disaster Risk Reduction)

Moderator

- **Mr. Jacobo Mekler** (President, Mexican Hydropower Association)

13:00-14:00 Lunch

14:00-14:15 **Solving floods and drought risk challenges**

A dynamic short session to explore recommendations to build meaningful partnerships between hydropower operators and risk management practitioners to increase climate resilience.

- **Ms. Catalina Jaime** (Senior Risk Adviser, Red Cross Red Crescent Climate Centre)

14:15-16:15 **Working groups**

The working groups aim to promote the dialogue where the participants will take part of a chosen group. They will analyse different approaches to manage risk and identify points of action to further and strength cooperation among the stakeholders.

- **Haiti - Dominican Republic High Level Water Table**
Ms. Janot Mendler de Suárez (Consulting Technical Adviser, Red Cross Red Crescent Climate Centre)
 - **TNC Hydropower by Design**
Ms. Diana Vázquez (Infrastructure Program Director, The Nature Conservancy)
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- **WB Institutional architecture to link science, policy and practice**
Mr. Raúl Alfaro-Pelico, (Lead Climate Change Specialist, World Bank Group)
Dr. Pablo Suárez (Associate Director for Research and Innovation, Red Cross Red Crescent Climate Centre)

16:15-16:30 Coffee break

16:30-17:30 **The way forward: Concrete options for next steps**

This interactive session will bring key ideas discussed during all the previous sessions to jointly define a set of action points, recommendations and messages to take good practices, innovation and technology in the hydropower sector to a next level for the benefit of society.

- **Ms. Janot Mendler de Suárez** (Consulting Technical Adviser, Red Cross Red Crescent Climate Centre)

17:30-18:00 **Closing**

- **Dr. Pablo Suárez** (Associate Director for Research and Innovation, Red Cross Red Crescent Climate Centre)
 - **Ms. María Ubierna** (Senior Hydropower Analyst, International Hydropower Association)
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