

Countries experiences in contributing to the implementation of the Sustainable Development Goals related to water

Session: Risk Management in River Basins

Session report, 16 January 2015

Introduction:

Water related disasters are becoming increasingly frequent and hazardous. A worldwide increase on the frequency and economic damages from floods and droughts has been experimented over the last 25 years driven by the confluence of a series of factors like population growth, urbanisation, climate change and inadequate land and water management. Active approaches towards preventive risk management and resilience building are needed to turn risks from constraints into opportunities for the achievement of the SDGs. In this context, this session convened and discussed some exemplary cases of tools and approaches to address water risks.

‘Zero risk does not exist’

The session started with an overview presentation from Niels Vlaanderen, Senior Policy Advisor at the Ministry of Environment in The Netherlands, who highlighted the important role of governments in raising awareness among all stakeholders on the urgency to act in prevention and adaption to water risks related to climate change and other global changes. The effects of global changes on more frequent and hazardous water risk are impacting wellbeing and economic growth in both developing and developed countries. Meanwhile, increasing economic and human capital is getting concentrated in high risk areas. Planners, investors and politicians need to know the risks they are exposed to in order to build adequate measures focused on prevention, acknowledging that **‘zero risk does not exist’**.

He emphasized six key messages that need to be considered and interiorized globally:

- Climate shifts and other global changes are already impacting water-related disasters: deficient maintenance of the infrastructure is already increasing the vulnerability to water hazards worldwide
- Disaster Risk Reduction, Water Resources Management and Climate Adaptation should no longer be treated as separate topics, and they should also connect to land use planning and developing planning, including the finance part

- Use of new data and tools for risk assessment to identify and prioritize actions. Improve preparedness of citizens in terms of risk awareness, emotional preparedness and emergency planning
- Risk reduction, preparation and prevention pay off in terms of reduced loss of life, avoided damage, and long-term economic growth and stability
- Integrate risk prevention & long-term planning: create opportunities for synergies with planned investments, incl. plans for adaptation to climate change
- Uncertainties are no excuse for inaction: water and risk management have to be looked at in an integrated way, making them flexible and adaptive and combining them to optimize resources, take advantage of synergies (like multipurpose solutions, eg. dams); within a process of continuous monitoring, evaluation and readaptation

Tools for implementation

Different tools for implementation aiming to help move on in this direction in different regions were presented and discussed. The panel included: Niels Vlaanderen presenting the case of the Netherlands, Raimund Mair, Technical Expert for River Basin Management, International Commission for the Protection of the Danube River, Austria; Mohamed Elrawady, Regional Monitoring and Evaluation Specialist, CEDARE; Pedro Domaniszky, Coordination Director, Itaipu Binacional, Paraguay; and Karin Lexen, from the Swedish International Water Institute.

Cases

The **Delta Program** in the Netherlands shifted their approach from fighting against water by building big dikes and containment infrastructures to **living with water through an integrated risk program** including the introduction of a new set of safety standards for the Dutch flood defences based on a societal cost-benefit analysis, protecting vital infrastructures and developing strategies to minimize social disruption.

The International Commission for the Protection of the Danube River (ICPDR)'s Strategy on Adaptation to Climate Change in the Danube River was designed on the basis of a scientific research study summarizing all relevant information on climate change and expected impacts on water for the Danube River Basin. It resulted in the development of two main tools: **the international Danube River Basin Management and Danube Flood Risk Management Plans**.

The Monitoring and Evaluation of the Water Sector in North Africa (**MEWINA**) project has been launched in November 2011 to influence decision makers, governments, scientific community, development agencies, and general public in North Africa. Its overall goal is to report regularly on the State of the Water through a set of **institutional, technical, environmental, socio-economic and governance indicators**.

The construction of a large hydropower plant in the Parana River, a transboundary basin shared by Brazil and Paraguay, was carried out as a joint initiative by the two countries to provide safe energy under a social and environmental stewardship approach. An **analysis of flow variations was performed using the Hec Ras and Hec Geo Ras free software to assess the possible situations and design reaction and adaptation strategies**.

Lessons learnt for implementation

From fighting against water to living with water: building with nature

Niels Vlaanderen explained how an “almost disaster in the Netherlands showed that we are vulnerable to water risks and high infrastructures are not enough to solve the problem; so there was need to give room for safety”. This was the driver of the Delta program aimed to shift from a reactive approach to a proactive and adaptive risk management approach focused on building resilience and adaptive capacity among the population. It was based on four pillars: a formal legal framework with designation of a set of safety standards based on a societal cost-benefit analysis; a long term financial commitment of 1 billion euros (USD 1.1 billion) per year; socially broad decision making involving all stakeholders and a flexible and adaptive approach during the whole process. It also incorporated some new concepts like ‘building with nature’, using green infrastructure to create protective designs that ensure minimum risk for the population. Some key lessons wrap up lessons from the project were the following:

- The importance of Disaster Risk Reduction, Water Resource Management, Climate Adaptation and Spatial Planning to go hand in hand.
- The importance to connect national experiences to international frameworks to make them useful beyond the frontiers.
- The need to ensure the basic requirements: funding, good governance, stakeholder involvement and capacity.

A common understanding of the risks and uncertainties allows the development of flexible and changing strategies that give room for adaptation ‘on the way’

Raimund Mair highlighted the cornerstones that gave strength to the Climate Change Adaptation Strategy developed for the Danube River.

First, the creation of a common understanding and vision between the countries on the risks and expected changes stemming from climate change through the conduction of a scientific study, critically assessing and summarizing all climate change related information for the basin.

Second, the identification of main aspects of uncertainty allowed to start working on strategies to deal the uncertainty and adaptive mechanisms to guide practical management decisions, like a cyclic revision and update of the strategy and management plans every 6 years.

The main challenge they are working on is the practical application aspects to deal with uncertainty and respond to the needs of the countries. In this sense, synthetic and applied thinking is important to deal with the risks in complex systems like transboundary basins, but it is a hard exercise that requires patience and sensitivity.

“You cannot manage what you cannot measure”

Mohamed Elrawady highlighted the importance assessing and identifying the main variables of risk and vulnerabilities of the countries, and building trends on the evolution of those variables to feed decision-making on risk management. This was done in North Africa through a joint project from 6 countries to create an enhanced monitoring and evaluation network that traced key indicators for critical variables of risk in crosscutting fields like water, energy, ecosystems, health, etc. The definition and assessment of indicators by each country was a challenging and complex task that was supported by the elaboration of an operational framework to guide and ensure the continued assessment of indicators every five years, and elaboration of national periodic reports that allow to establish trends to guide risk management decision making.

Risk lies on the unexpected: preparedness to provide reaction capacity is essential

Pedro Domaniszky remarked the role that the private sector can play in encouraging governance cooperation and helping to engage with stakeholders, especially in defining goals for optimization of operations and developing plans to reduce risks and balance needs (such as energy generation and flood risk). Meanwhile an important lesson from the Project was the importance to prepare for the unexpected, as some unintended effects downstream drove the need to develop river flow modelling systems, adaptation scenarios to different river flow situations and social mobilization and coordination in the affected areas, within a framework of close cooperation between both countries. Thereafter, all environmental and related actions are being articulated in an adaptive way according to the needs.

The role of water as a ‘connector to ground experiences in risk reduction’ in Climate Change Negotiations

Karin Lexen highlighted some challenges in relation to the development of International Climate Change negotiations and the existing and potential role given to water related risks.

The first made reference to how national, global, and local levels have enormous difficulty communicating new, shifting needs to one another. Intercommunication is essential.

The second related to the need of more connection and coordination between academia and governments, and also with other sectors like energy and climate change at all scales.

The third noticed that deadlines (such as the expiration of agreements for the UNFCCC) are a major spur for accomplishing new global agreements, but they are also somewhat artificial and can create ineffective or perverse incentives.

She finally highlighted the low importance that water has been given in the discussions on Climate Change, while a preliminary survey for the COP21 Convention says that water crisis will have some of the biggest impacts, especially for in food disasters. She strengthened the role of water as a connector to ground and landed examples of adaptation and coping strategies with climate change related risks, and the need to bring those examples to the global discussions as a feedback for negotiations. This will contribute to break deadlocks that governments suffer in negotiations and bring the voices from civil society and NGOs into the discussions.

Conclusions

Advancing in risk reduction and resilience building against climate change has necessarily to involve a close interaction and integration of risk assessment, water management, climate change and spatial planning, both at national level and within the international negotiations. There is a need to shift from concept to action, upscaling and disseminating successful experiences in water risk reduction to other regions and sectors. There is also a need to go from reaction to proactivity, giving room for flexible and adaptive approaches that need to be fed by continuous monitoring and evaluation – “you cannot manage what you cannot measure”. There is a wide range of tools and technologies available that can help reduce the level of uncertainty and develop adaptation strategies, but the first step is to raise awareness among governments on the payoffs of risk prevention in social, economic and environmental security.



Discussion panel. From left to right: Pedro Domaniszky, Raimund Mair, Niels Vlaanderen, Mohamed Elrawady and Karin Lexen.