Introduction

Science provides valuable support to the definition of disaster risk management (DRM) norms, procedures, organisation, objectives and requirements, identification of measures and development of capabilities, i.e. the formulation and implementation of DRM policies. The understanding of disaster risk is fundamental for effective policy-making (Clark et al., 2017) and needs to be shared by all key stakeholders. Furthermore, it needs to be comprehensive in terms of policy scope, the types of hazards and intensity of disasters, and the risk management process.

First, the understanding and assessment of risk should cover three components: natural and human-induced hazards; exposure of humans, infrastructure and ecosystems; and systems' vulnerability. Correspondingly, the definition of DRM policy addresses prevention, mitigation (including for example spatial planning), and protection strategies and measures, as well as adaptation to longer-term natural and socioeconomic processes such as climate change and the development of capabilities for response and recovery.

The functional approach allows policymakers to address the activities most appropriate to the context (Thorvaldsdóttir and Sigbjörnsson, 2014). A recently developed comprehensive taxonomy of crisis management functions provides a common framework for consideration of all respective measures and capabilities (Tagarev and Ratchev, 2020).

Second, an all-hazards approach to risk governance is fundamental to enhancing resilience, prevention, emergency preparedness and response (OECD, 2018) and needs to cover emergencies of various intensities, from an incident, through a disaster, to a crisis.

Third, it is not sufficient to assess risk periodically. Risk management is a continuous activity that includes assessment of climate and disaster risks; identification, prioritisation and selection of disaster risk reduction and adaptation measures, preferably in a consistent DRM policy; implementation of the selected measures; and monitoring and evaluation of risk reduction and adaptation measures. Figure 1 presents this activity as a cycle.

Figure 1. *Integrating the risk management cycle.* ***Source****: Authors*