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## Report

Shaping a digital future that belongs to everyone depends more than ever on joint efforts by all of us. Thanks to science and technology, the world is changing rapidly and inevitably, with development, humanitarian and other actors well positioned to leverage innovations to increase resilience and reduce disaster risks.

This is to report on the

## High-level event on New Technologies in Disaster Risk Reduction

**When** Monday, 12 September 2022

**Where** IFRC premises, Auditorium B

[The opening high-level panel](#) focused on the use of new technologies in disaster prevention and risk reduction.

**Janez Lenarčič, European Commissioner for Crisis Management**, stressed the need for increased investment in disaster prevention, where new technologies can play a crucial role in early warning, preparedness, and response to reinforce the foundations of disaster risk management. Through Horizon Europe and the Disaster Risk Management Knowledge Centre the EU has been supporting technological research and innovation for DRR with COPERNICUS and GALLILEO at the forefront of its programs, and artificial intelligence and virtual reality in its toolbox. He also highlighted the Czech project (MVČR) on the utilization of virtual simulation of disasters. However, Commissioner Lenarčič reminded that new technologies are powerless without an enabling environment. In this respect, for example, additional efforts need to be made concerning sustained investments in resilient infrastructure to close the digital divide. Nevertheless, when using modern technologies, it is essential to emphasize data protection and cyber security (as mentioned by Mami Mizutori). He also pointed out information sharing and research, highlighting the *Union Civil Protection Knowledge Network* in this regard.

**Jagan Chapagain, Secretary General IFRC**, emphasized climate change and its impact on the most vulnerable communities. The ICRC focuses on using modern technologies at the community level, so it is essential to focus on ease of use and investments that include the most vulnerable. The IFRC and UNDRR are jointly developing the *Global Crises Data Bank*, a database to enable the sharing of information on risks and crises. He presented IFRC activities in crisis-affected countries that use digital technologies. He highlighted digital literacy and the gaps in countries where the infrastructure to enable modern technologies is often completely lacking. Localization and empowerment of local communities and volunteers are crucial. Additionally, he stressed a need for investment in basic needs, such as signal coverage and related internet coverage, for adequate early warnings.

**Mami Mizutori, Special Representative of the Secretary-General for Disaster Risk Reduction**, drew attention to the ongoing process of the mid-term review of the Sendai Framework, which will culminate at UNGA next year (with a political declaration) - she said this is a crucial moment to focus more on prevention, concrete solutions, that not only reach individual communities but also build on them. In the countries affected by floods (India, Bangladesh, Brazil), satellite technology is used together with artificial intelligence. She stressed the need for modeling, but this must be based on good quality, disaggregated data. The public and private sectors have an important role to play here, and partnerships are essential. The coverage of early warning systems and increased knowledge of risks worldwide is part of the Sendai Framework's Goal G (coverage of early warnings regarding risks – digital public goods), and WMO, together with UNDRR, is currently working to support the



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achievement of this goal, with a special focus on the most vulnerable. She also mentioned the role of youth and UNDRR's new "You inspire" initiative, collaboration with UNESCO, aiming at the creation of a network and further research of young scientists.

**Václav Bálek, Permanent Representative of the Czech Republic in Geneva**, placed DRR in the broader context of the Czech Presidency, particularly the linkage with climate, adaptation, and prevention. He mentioned the upcoming Council conclusions during the CZ PRES. He described the CZ project that uses virtual reality for prevention and disaster preparedness.

**The expert panel** featured DRR experts from IFRC, UNDRR, and the Fire Rescue Service of the Czech Republic. In his opening remarks, moderator **Tom De Groeve, Joint Research Centre, European Commission**, focused on the role of science to develop new technology, but also on the need to develop an effective science-policy interface bridge interdisciplinary and cross-sectoral barriers. More science and technology are needed to understand risks of the future (their urgency and breadth) supporting adaptation and prevention, but also for enhanced situational awareness supporting prevention and response. Institutionalizing science as part of DRR is crucial, such as the EU has done in the Science Pillar of the Union Civil Protection Knowledge Network.

**Jenty Kirsch-Wood, Head of Global Risk Management and Reporting, UNDRR**, focused on systemic risks and vulnerability - new technologies should include these elements. UNDRR's activities include the *Risk Information Exchange* which aims to enable authorities to access quality information, including on cascading disaster impacts to make informed decisions. She also highlighted how collaborations such as the public-private *Global Resilience Index Initiative* can help integrate DRR into sectoral policies across governments. Artificial intelligence can also significantly help in understanding people's decisions in the face of risks (often despite the information available). She stressed the critical importance of working across silos. New technologies should reflect the real financial impact of risks, factor in human decision-making, and be used cross-sectorally. However, new technologies reflect what humans want them to reflect; therefore, we need to know how to operate them in order to get anticipated results.

**Miniver Munkanta, Data Planning, Monitoring, Evaluation, Reporting Lead, Zambia Red Cross**, described how modern technologies (*Impact Based Forecasting System* - especially for flood warning, a collaboration of different actors, combined data) are used in practice at the local level. She cited the lack of knowledge and availability of connectivity at the community level, as well as limitations in the ability of the population to respond and take preventive measures, as major challenges. The system was handed over to the Zambian government, which integrated it into its disaster prevention system.

**Kara Devonna Siahaan, Head of Anticipation Hub**, delivered an overview of the role of the *Anticipation Hub*, which aims to help increase anticipatory humanitarian action and build capacity at the national and community level to ensure early warning response. The technologies they use focus primarily on mapping and data collection and also on raising public awareness of what individual households can do to reduce the impact of disasters.

**Jiří Chalupa, Fire Rescue Service of the Czech Republic**, presented in more detail the CZ project on the use of virtual reality and the practical aspects of the use of modern technologies, including drones - also in the context of the recent fire in Bohemian Switzerland, of the Fire Rescue Service. He highlighted the increasing number of forest fires and also presented the role of the UCPM mechanism, *the EU Copernicus Emergency Mapping Service*, and RescEU in response to these disasters.

In the subsequent discussion, **Fiji** presented a project it is working on with UNDRR, using GIS mapping but also integrating the concept of cascading impacts. He cited the inadequate information systems available to governments as a major challenge for small island states. **Poland** mentioned examples of good practice in the country, from the COVID-19 response (modeling the spread of disease using GIS) to early warning systems (including those that help monitor the movement of Ukrainian refugees and then share important logistical information with them in their own language - use of satellites, etc.), to building resilience, including the use of text messaging to disseminate information with the population. **Australia** asked about how climate increases the vulnerability of communities and how to include conflict in this framework. **Tom de Groeve** mentioned



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that, in the EU context, the conflict is increasingly becoming part of risk analysis, for example, in the *INFORM Risk Index*. UNDRR mentioned that UN system wide tools, such as the Common Country Assessment guidance include conflict and disaster risks. **The Anticipation Hub** also has a working group that focuses on conflict anticipation. She mentioned concerns from some humanitarian partners about the politicization of humanitarian assistance concerning anticipatory action and policy decisions.

Finally, the panelists commented on which technology they would choose as the one that would have a major impact - they agreed on predictive analytics, location-based, community knowledge-based solutions, and population training. UNDRR highlighted systemic risk modeling based on large-scale, global databases.