



**UNISDR Science and Technology Conference
on the implementation of the Sendai Framework for Disaster Risk Reduction 2015-
2030**

**Launching UNISDR Science and Technology Partnership and the Science and
Technology Road Map to 2030**

*To promote and support the availability and application of science and technology to
decision-making in Disaster Risk Reduction*

**27-29 January 2016
Geneva International Conference Centre**

**Short concept note: Knowledge Sharing for DRR science
for the implementation of the Sendai Framework: the role of
Knowledge Hubs**

Side Event

1) Overview

The Sendai Framework for Disaster Risk Reduction 2015-2030 recognizes the importance of science and technology for improving risk and disaster risk reduction (DRR) activities across the world. The framework calls for the enhanced use of scientific findings, improved research, and improved risk-reduction technologies through the coordination of existing networks and scientific research institutions, with support from the UNISDR Scientific and Technical Advisory Group. The overall goal of these efforts is to strengthen the evidence base for the implementation of the framework.

Among the many calls to the scientific community in the Sendai Framework is a notable call *“To promote the use and expansion of thematic platforms of cooperation, such as global technology pools and global systems to share know-how, innovation and research and ensure access to technology and information on disaster risk reduction;”* (UNISDR 2015, p. 27c).

This Side Event focuses on the challenge of sharing ‘know-how’ information, expertise and knowledge through such tools as disaster knowledge hubs to support UN member states on the use of science and technology for disaster risk management policies and operations

2) Stock taking

A main challenge for policy-makers and risk managers in Disaster Risk Management (DRM), both for natural and man-made disasters, is to capitalise on the wealth of existing knowledge at all levels including to close the gap between available scientific analysis supporting prevention, preparedness and response measures, and the effective use scientific information to trigger such actions. A further challenge is to improve the use and accessibility and uptake of research results for operational activities.

While scientific studies document a trend of increasing disaster losses, unsatisfactory translation of research findings into practical actions remains a barrier and prevents the best use of science, technology and innovation (Weichselgartne and Obersteiner, 2002) There remains a recognised need for science (and scientists) to provide and communicate actionable knowledge with explicit links to inform effective decision making, in other words: science that is useful, usable and used (Boaz and Hayden 2002)

For example the recent 2015 UNISDR Science and Technology Group’s report identified the following specific actions to address these challenges: *‘Greater priority should be put on sharing and disseminating scientific information, including technological advances and translating them into practical methods that can readily be integrated into policies, regulations and implementation plans concerning disaster risk reduction. Cross-disciplinary exchange will identify interdependencies which can help to identify findings for application to complex problems. Capacity development at all levels of society, comprehensive knowledge management and the involvement of science in public awareness-raising, media communication, behaviour change, and education campaigns should be strengthened.’*

It went on to state that 'Specific tools should be developed to facilitate science, technology and innovation outputs to help inform policy-making and practice. Additionally institutions and individuals at risk of disasters should be invited to participate in scientific research (surveys, vulnerability assessments and other activities) to collect local knowledge and create reliable databases should be created and so that information can be used to tailor initiatives to the local context while enabling global comparisons and assessments.'

The STAG report also points to the fact that there is an increasing requirement of science and technology communities *'to strengthen the dialogue and collaboration with policy-makers and DRR practitioners at local, national, regional and global levels to identify needs and knowledge gaps, co-design, co-produce and co-deliver new knowledge, and make science more readily available and accessible'* (UNISDR STAG 2015).

Indeed in different parts of the world a number of organisations have taken initiatives to address these challenges using the support that can be provided by knowledge hubs. A few examples of current and emerging knowledge hubs are shared below

- The PreventionWeb platform of UNISDR is a participatory online portal that aims to cover the global DRR domain. With over 20 different content types such as documents, events, news, policy papers etc. It has published information from over 7000 DRR organizations, and receives over 2.5 million page views per year. PreventionWeb contains relevant content for the scientific and technical community, including risk and loss data, organization profiles of over 1500 academic and research institutions (with 5560 related content items) and listings of almost 300 academic programmes in DRR. The Understanding Risk section translates complex concepts into plain language as an example of direct knowledge translation.
- Since 1976, the Natural Hazards Center (NHC) at the University of Colorado at Boulder, US, has served as a clearinghouse for knowledge concerning the social science and policy aspects of disasters. The NHC aims to advance and communicate the results of research on such topics as hazard mitigation and disaster preparedness, response, and recovery; hazard-related legislation and policy; social vulnerability to disasters; and other topics related to the societal dimensions of hazards, disasters, and risk. The Center collects and disseminates information for use by the hazards and disasters research, practice, and policy communities; conducts research; supports quick-response studies following disasters; and provides educational opportunities for the next generation of hazards scholars and professionals. <http://www.colorado.edu/hazards/> The World Health Organisation Regional Office for the Americas - Pan American Health Organisation - runs a Knowledge Center in Public Health and Disasters available online at www.saludydesastres.info. It provides an open access for all those interested, this online center -organized as a manual or thematic guide- presents an overview of the most important topics on public health and disasters: general concepts, organization of the health sector and policies, disasters risk reduction, disaster preparedness, health response in emergencies and disasters, rehabilitation and reconstruction and alliances and international assistance.

- In the Pacific there are a series of knowledge hubs that have been identified supporting DRR and DRM and these include:
 - Pacific Disaster Net (PDN - <http://www.pacificdisaster.net>) is the DRM web portal for the Pacific. It is designed to become the largest and most comprehensive information resource in relation to disaster risk management in the Pacific. Launched on the 18th September 2008 in Suva, the PDN was developed by SOPAC, IFRC, UNDP-Pacific Centre and UNOCHA as an initiative of the Pacific Disaster Risk Management Partnership Network. Interactive Google maps are used and live CAP (Common Alert Protocol) Alerts are provided in near real time by the Global Disaster Alert and Coordination System
 - Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) <http://pcrafi.sopac.org/> is a joint initiative of SOPAC/SPC, World Bank, and the Asian Development Bank with the financial support of the Government of Japan, the Global Facility for Disaster Reduction and Recovery (GFDRR) and the ACP-EU Natural Disaster Risk Reduction Programme, and technical support from AIR Worldwide, New Zealand GNS Science, Geoscience Australia, Pacific Disaster Center (PDC), OpenGeo and GFDRR Labs was launched in 2012. It aims to provide the Pacific Island Countries (PICs) with disaster risk modeling and assessment tools. It also aims to engage in a dialogue with the PICs on integrated financial solutions for the reduction of their financial vulnerability to natural disasters and to climate change. The initiative is part of the broader agenda on disaster risk management and climate change adaptation in the Pacific region.
 - The University of South Pacific Knowledge Centre is an online and resource / reference centre dedicated to reception, access and retrieval of relevant data, reports and scientific documents the impacts of climate change and variability, integration of traditional knowledge, information regarding climate science and lessons learnt by the communities and past community adaptation projects (<http://eugcca.usp.ac.fj/KnowledgeCentre.aspx>)

- On 30 September 2015, the European Commission launched a new Knowledge Centre for Disaster Risk Management which sets out to promote the interface between science, policy and early warning systems by promoting networks and partnerships and knowledge exchange. It aims to facilitate amongst other issues to
 - access to and uptake of research developments and results;
 - develop an online repository of relevant research results and operational outcomes;
 - create a network of disaster management laboratories and test beds for conducting experiments and benchmarking exercises on disaster management technologies;
 - supporting the development capacities and new technologies, in particular within Member States.

The Knowledge Centre takes the form of a virtual platform managed by the European Commission's Joint Research Centre through which government authorities and other interested stakeholders can gain easy access to: pooled

information on existing scientific networks and partnerships; latest research results and operational knowledge; details of initiatives developing innovative technologies; and a support system for strengthening capacities in disaster risk management. The Disaster Risk Management Knowledge Centre (DRMC) will support the United Nations Sendai Framework for Disaster Risk Reduction by promoting a more systematic and reinforced science to policy interface

(<https://ec.europa.eu/jrc/en/news/new-knowledge-centre-help-eu-minimise-risk-disasters>)

- An example of an integrated approach to research, learning and practice on DRR and adaptation is the UK Department for International Development's Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) programme <http://www.braced.org/>. BRACED is helping people become more resilient to climate extremes in South and Southeast Asia, in the African Sahel and East Africa. Through the BRACED programme DFID is building a new approach to supporting evidence gathering and learning by commissioning a Knowledge Manager to act as a centre for developing and disseminating evidence and knowledge on resilience. The role of the Knowledge Manager is to ensure BRACED is contributing to a sustained and transformational impact on people's resilience to climate extremes beyond the people and communities directly supported by funded projects.

3) The way forward

Participants in this side event will hear about the activities of a number of these initiatives to share disaster knowledge and bring science and policy closer together and can participate in the discussions on the role of knowledge hubs or similar structures to help to rationalise DRR information and promote the availability and dissemination of the best research to all including:

- Identify ways and methods of info sharing that bridge research to practice and policy
- Consider developing knowledge exchange principles and standards for DRR information
- Consider how to link the different knowledge hubs and platforms for the sharing of the state of knowledge of disaster science in real time
- Creating or strengthening existing knowledge hub networks related to DRR which could link with existing hubs to develop common platforms for activity for knowledge and data sharing to implement the Sendai Framework
- Considering online dissemination of existing high-quality DRR research including methodologies; reviews and evaluation of policy and practice; the sharing of tools such as standards, codes, operational guides, to support coordinated actions in disaster preparedness and response; and the facilitation of information sharing on lessons learned from post-disaster reviews to support the Sendai Framework

BACKGROUND

The following table shows the relevant priorities and key actions of the Science and Technology Road Map are considered to be relevant for knowledge hubs:

Priority for Action 1: Understanding Disaster Risk		
Expected Outcomes	Key Actions	Review Progress and Needs
1.1 Assess the current state of data, scientific knowledge and technical availability on disaster risks reduction and fill the gaps with new knowledge.	<ul style="list-style-type: none"> • Develop, update periodically and disseminate risk information, including on exposure and vulnerability, to • Conduct solution-driven surveys and research in disaster risk management and increase research for global, regional, national and local application; 	<ul style="list-style-type: none"> • UNISDR guidelines for recording disaster loss and disaggregated impact data • Methodologies and guidance for post-disaster reviews and damage assessments • Periodic national and regional surveys on disaster risk management capability
1.2 Synthesize, produce and disseminate scientific evidence in a timely and accessible manner that responds to the knowledge needs from policy-makers and practitioners;	<ul style="list-style-type: none"> • Ensure the synthesis and use of traditional, indigenous and local knowledge and practices • Promote partnership between scientists, policy makers, private sectors and community leaders to establish, disseminate and share good practices and lessons learned. • Engage scientific focus on disaster risk factors and scenarios, including emerging disaster risks; 	<ul style="list-style-type: none"> • Good practises on use of indigenous and local knowledge • Methods for tracking and reporting investments in research programmes focusing on DRR • Case studies on DRR through science and traditional, indigenous and local knowledge and practises
1.3 Ensure that scientific data and information can support and be used in monitoring and reviewing progress towards disaster risk	<ul style="list-style-type: none"> • Develop and monitor a set of core indices and indicators to measure progress • Promote the development of quality standards, such as certifications particularly at national and regional levels. 	<ul style="list-style-type: none"> • Standards and best practises for DRR • National and regional peer reviews • National peer reviews to follow-up, assess and report on progress on

reduction and resilience building.		implementation of Sendai Framework
Priority For Action 2: Strengthening Disaster Risk Governance to Manage Disaster Risk		
Expected outcomes	Key Actions	Review Progress and Needs
2.1 Ensure a stronger involvement of science in policy- and decision-making at all levels	<ul style="list-style-type: none"> Promote and improve dialogue to facilitate a science-policy interface for effective decision-making 	<ul style="list-style-type: none"> Science and technology expertise for national and regional platforms for DRR Information sharing of case studies of strong involvement of science in policy and decision-making to improve implementation
Priority For Action 3: Investing in Disaster Risk Reduction for Resilience		
Expected outcomes	Key Actions	Review Progress and Needs
3.1 Provide scientific evidence to enable decision-making of policy options for investment and development planning	<ul style="list-style-type: none"> Develop and disseminate economic, social, structural, technological and environmental impact assessments to strengthen disaster-resilient public and private investments Promote cooperation between academic, scientific and research entities and networks and the private sector to develop new products and services to help reduce disaster risk 	<ul style="list-style-type: none"> Periodic reports on State of Science in DRR at national, regional and global levels. Guidance on disaster risk and impact assessments
Priority for Action 4: Enhancing Disaster Preparedness For Effective Response, and to “Build Back Better” In Recovery, Rehabilitation and Reconstruction		
Expected outcomes	Key Actions	Review Progress and Needs
4.1 Identify and respond to the scientific needs of policy- and decision-makers at all levels to	<ul style="list-style-type: none"> Provide knowledge and guidance for the development of national and local strategies and plans for DRR Promote regional model for science and technology- based 	<ul style="list-style-type: none"> Local and national DRR strategies and plans in line with Sendai framework Local and national resilience actions plans

<p>strengthen preparedness and resilience</p>	<p>DRR plans</p> <ul style="list-style-type: none"> • Identify the special needs of women, children and old age population together with animals in national and local strategies aimed at disaster risk reduction. 	
<p>4.2 Build capacity to ensure that all sectors and countries understand, have access to, and can use scientific information for better informed decision-making</p>	<ul style="list-style-type: none"> • Build local knowledge and the use of existing training and education mechanisms and peer learning • Promote transdisciplinary work in disaster risk reduction research. • Develop the workforce capacity in all sectors in understanding disaster risk and implementing DRR approaches • Enhance knowledge and technology transfer and promote the use of global technology pools to share know-how, innovation and research • Promote research innovations in insurance sector particularly in developing regions 	<ul style="list-style-type: none"> • National and regional help desks for technical advice on risk assessment and risk management capability • National and regional training and capacity building programmes in DRR

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Annex: Relevant text from the Sendai Framework

25g - To enhance the scientific and technical work on disaster risk reduction and its mobilization through the coordination of existing networks and scientific research institutions at all levels and in all regions, with the support of the United Nations Office for Disaster Risk Reduction Scientific and Technical Advisory Group, in order to strengthen the evidence-base in support of the implementation of the present Framework; promote scientific research on disaster risk patterns, causes and effects; disseminate risk information with the best use of geospatial information technology; provide guidance on methodologies and standards for risk assessments, disaster risk modelling and the use of data; identify research and technology gaps and set recommendations for research priority areas in disaster risk reduction; promote and support the availability and application of science and technology to decision-making; contribute to the update of the publication entitled “2009 UNISDR Terminology on Disaster Risk Reduction”; use post-disaster reviews as opportunities to enhance learning and public policy; and disseminate studies;

47c - To promote the use and expansion of thematic platforms of cooperation, such as global technology pools and global systems to share know-how, innovation and research and ensure access to technology and information on disaster risk reduction;