



**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
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Short concept note: Work Stream 4, Research Funders Working Group

Research funding

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 call to the scientific community in the Sendai Framework, a notable call is to *“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”* (UNISDR 2015, p. 25g). Less specific is the call for growth in the gross content, and effectiveness, of funding to support disaster risk reduction research and innovation. Work Stream 4 will address the call to tackle research and technology gaps. Within this, Research Funders Working Group will focus on mechanisms to enhance coordination of research initiatives, and importantly the funding of coordinated research actions.

The breakout sessions for the Research Funders Working Group will be structured as open discussion sessions. Specifically, participants are invited to share their views on how local, regional and national research funding can be aligned to address priority research gaps (cf. Work Stream 4, Working Group 3); what existing initiatives can be readily utilised for implementation of the Sendai Framework; and how funding for research to address critical research gaps identified in relation to the Sendai Framework can be fed into national and international initiatives. The Research Funders Working Group will also intend to initiate a conversation around barriers to coordination of research funding.

The information we collect from this Working Group will inform mechanisms to close research gaps in relation to priority actions of the S&T Road Map through development of appropriate science and innovation. It is hoped that the Working Group will be able to produce a framework for coordination of research funding, initially focusing at the international level.

2) Stock taking

Scientific knowledge on the causes, characteristics, and consequences of hazards, disasters, and catastrophes has increased immensely over the past forty years. Even so, across the globe physical and social vulnerability and exposure have increased at all levels of development and this is thought to contribute to persistent if not increasing disaster losses (World Bank 2013; 2015; UNISDR 2015). The scope and severity of losses indicate there are fundamental gaps in our knowledge of how risk and disaster are created, distributed, and/ or reduced, as well as in our ability to transfer existing knowledge into practice to

realise the potential of better understanding of risk and new knowledge, technologies and tools.

The need to optimise national and international cooperation in relation to resourcing research and facilitating its uptake implicit in many parts of the Sendai Framework (see Annex). A number of current initiatives designed to address science prioritization and fertilization exist, but they are not currently focused on disaster risk reduction, or tend to be focused only on bilateral interests. There is a need in relation to research to enhance coherence across policies, institutions, goals, indicators and measurement systems for implementation, while respecting the respective mandates (cf. Sendai Framework Paragraph 11).

Despite efforts on the part of research and practice communities to create new understanding and be at the cutting edge of science, the vast scope and highly diverse nature of relevant research concepts, theories, methodologies, and empirical findings make it difficult to take stock of that knowledge, which is a critical step towards translating it into more effective disaster plans, policies, and programs.

While there are a variety of strategies that could be used to frame the work of the group, four major areas for reflection have been selected to guide this effort and provide different ways members of the global community might provide their input.

1. ***Mapping the disaster risk reduction priorities, organisational objectives and operational timescales of research funders.*** It is critical to identify that these are often very different between organisations and between countries, and that these interests can often seem to be more powerful than the immediate needs of the Sendai Framework. We need to reconsider the factors that both facilitate and impede global science funding and research applications. Variations in language, information access, expectations for scientific rigor, and culture influence how research is resourced and applied. Significant global differences with respect to wealth and economic well-being, political systems, governance quality (e.g., accountability, rule of law), and disaster risk reduction capacities raise questions about the extent to which research can be aligned or developed in common. Experience from many areas has shown that clear identification of these issues is invaluable in identifying where there may be genuine opportunities for collaboration, and clarifying the space within which can flourish. Discussions will also focus on questions regarding the extent to which disaster risk reduction funding activities are coordinated and mutually reinforcing or siloed and conflicting.
2. ***Mapping platforms for national disaster research cooperation, and optimising these for future international research cooperation.*** Several countries have national disaster research networks which largely facilitate cooperation between in-country institutions to support research agenda. The potential to bring several of these to support international disaster research agendas has been identified by several bodies (e.g. the IRDR, and their nurturing of national committees). How can such mechanisms be utilised to galvanise resources to support international research agendas?

3. **Mapping potential platforms for international research cooperation, and optimising the development of these.** In many areas, not necessarily confined to disasters, institutions have recognised the multiple benefits of bringing-together researcher providers and research users from multiple sectors or countries. Several platforms (e.g. IRDR, FutureEarth, Belmont, Newton Fund) have been developed to stimulate trans-sectoral or international research. How much can these existing models be tuned to address the needs of the Sendai Framework based on current principles of operation?
4. **Developing a new mechanism to facilitate improved coordination of multiple research funders.** It is highly likely that existing collaborative frameworks will be seen as a ‘step in the right direction’, but ultimately may not be appropriate for global coordination of research funding, at least without fundamental reform. Discussions are expected to include consideration of the following questions: a) upon what basis could a new, or revised, mechanism to facilitate research funding coordination be developed?; b) how can this be optimised to support funding of research over a span of 15 years for disaster risk reduction to inform next steps in the Road Map?; and c) how can this be tuned for resourcing stronger research capacities in countries with low or limited research infrastructure?

3) The way forward

Participants in this working group are invited to consider the elements of the S&T Road Map relevant to this Working Group and whether these proposals can be strengthened further. What are specific next steps to? Where should urgent and longer term investments be made in this regard?

The following table shows the relevant priorities and key actions of the Science and Technology Road Map:

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

<p>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;</p>	<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
<p>1.3 Ensure that scientific data and information can support and be used in monitoring and reviewing progress towards disaster risk reduction and resilience building.</p>	<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 implementation of Sendai Framework
<p>Priority For Action 2: Strengthening Disaster Risk Governance to Manage Disaster Risk</p>		
<p>Expected outcomes</p>	<p>Key Actions</p>	<p>Review Progress and Needs</p>
<p>2.1 Ensure a stronger involvement of science in policy- and decision-making at all levels</p>	<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
<p>Priority For Action 3: Investing in Disaster Risk Reduction for Resilience</p>		
<p>Expected outcomes</p>	<p>Key Actions</p>	<p>Review Progress and Needs</p>

<p>3.1 Provide scientific evidence to enable decision-making of policy options for investment and development planning</p>	<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
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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
<p>4.1 Identify and respond to the scientific needs of policy- and decision-makers at all levels to strengthen preparedness and resilience</p>	<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 DRR plans • Identify the special needs of women, children and old age population together with animals in national and local strategies aimed at disaster risk reduction. 	<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>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 	<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

	<p>know-how, innovation and research</p> <ul style="list-style-type: none"> • Promote research innovations in insurance sector particularly in developing regions 	
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A few elements to inform discussions of next steps in the Road Map are described below.

The most direct relevance is to the actions proposed to undertake Priority for Action 1: *Understanding Disaster Risk*. This section calls for conducting solution-driven surveys and research in disaster risk management and increase research for regional, national and local application, and for periodic reports on the state of Global Risk Knowledge. Both undertaking an analysis of knowledge gaps with regard to risk reduction, and accessing resources to support the necessary research is critical to this process.

Furthermore, this topic is central to Priority for Action 1, section 1.2 which proposes to synthesize, produce and disseminate scientific evidence in a timely and accessible manner that responds to the knowledge needs from policy-makers and practitioners, including engaging in scientific focus on disaster risk factors and scenarios, including merging disaster risks. In addition, this discussion is relevant to Priority for Action 1, section 1.3 that is focused upon ensuring that scientific data and information can support and be used in monitoring and reviewing progress towards disaster risk reduction and resilience building.

Furthermore, development of a gap analysis of existing scientific knowledge will be very relevant to Priority for Action 2: Strengthening Disaster Risk Governance to Manage Disaster Risk and Priority for Action 3: Investing in Disaster Risk Reduction for Resilience. These priorities areas stress actions to ensure stronger collaboration between scientists and policy and decision-makers, including a call for periodic reports on the state of science in DRR at national, regional and global levels.

Finally, the outcome of the Research Funders Work Group are relevant to Priority for Action: Enhancing Disaster Preparedness for Effective Response, and to “Build Back Better” in Recovery, Rehabilitation, and Reconstruction by emphasizing capacity building to ensure that all sectors and countries understand, have access to, and can use scientific information for better decision-making.

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Annex: Relevant text from the Sendai Framework

22 - In the context of increasing global interdependence, concerted international cooperation, an enabling international environment and means of implementation are needed to stimulate and contribute to developing the knowledge, capacities and motivation for disaster risk reduction at all levels, in particular for developing countries.

24h - To promote and improve dialogue and cooperation among scientific and technological communities, other relevant stakeholders and policymakers in order to facilitate a science policy interface for effective decision-making in disaster risk management;

24j - To strengthen technical and scientific capacity to capitalize on and consolidate existing knowledge and to develop and apply methodologies and models to assess disaster risks, vulnerabilities and exposure to all hazards;

24k - To promote investments in innovation and technology development in long-term, multi-hazard and solution-driven research in disaster risk management to address gaps, obstacles, interdependencies and social, economic, educational and environmental challenges and disaster risks;

24l - To promote the incorporation of disaster risk knowledge, including disaster prevention, mitigation, preparedness, response, recovery and rehabilitation, in formal and non-formal education, as well as in civic education at all levels, as well as in professional education and training;

25d - To promote common efforts in partnership with the scientific and technological community, academia and the private sector to establish, disseminate and share good practices internationally;

25e - To support the development of local, national, regional and global user-friendly systems and services for the exchange of information on good practices, cost-effective and easy-to-use disaster risk reduction technologies and lessons learned on policies, plans and measures for disaster risk reduction;

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;

25i - To enhance access to and support for innovation and technology, as well as in long-term, multi-hazard and solution-driven research and development in the field of disaster risk

management.

26 - Disaster risk governance at the national, regional and global levels is of great importance for an effective and efficient management of disaster risk. Clear vision, plans, competence, guidance and coordination within and across sectors, as well as participation of relevant stakeholders, are needed. Strengthening disaster risk governance for prevention, mitigation, preparedness, response, recovery and rehabilitation is therefore necessary and fosters collaboration and partnership across mechanisms and institutions for the implementation of instruments relevant to disaster risk reduction and sustainable development.

31c - To promote cooperation between academic, scientific and research entities and networks and the private sector to develop new products and services to help to reduce disaster risk, in particular those that would assist developing countries and their specific challenges;

31d - To encourage the coordination between global and regional financial institutions with a view to assessing and anticipating the potential economic and social impacts of disasters;

34b - To promote the further development and dissemination of instruments, such as standards, codes, operational guides and other guidance instruments, to support coordinated action in disaster preparedness and response and facilitate information sharing on lessons learned and best practices for policy practice and post-disaster reconstruction programmes;

34c - To promote the further development of and investment in effective, nationally compatible, regional multi-hazard early warning mechanisms, where relevant, in line with the Global Framework for Climate Services, and facilitate the sharing and exchange of information across all countries;

34d - To enhance international mechanisms, such as the International Recovery Platform, for the sharing of experience and learning among countries and all relevant stakeholders;

36b - Academia, scientific and research entities and networks to focus on the disaster risk factors and scenarios, including emerging disaster risks, in the medium and long term; increase research for regional, national and local application; support action by local communities and authorities; and support the interface between policy and science for decision-making;

47b - To enhance access of States, in particular developing countries, to finance, environmentally sound technology, science and inclusive innovation, as well as knowledge and information sharing through existing mechanisms, namely bilateral, regional and multilateral collaborative arrangements, including the United Nations and other relevant bodies;

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;