



**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*

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Concept note

**Supportive publishing practices in DRR:
Leaving no scientist behind**

1) Overview

The Sendai Framework for Disaster Risk Reduction 2015-2030 goes beyond the Hyogo Framework for Action 2005-2015 in the emphasis it has placed on the role of science and its dissemination (Pearson 2015). It promotes: “*the collection, analysis, management and use of relevant data and practical information and **ensuring its dissemination**, taking into account the needs of different categories of users, as appropriate*”. It also advocates moving away from silo-based knowledge management and scientific systems and data towards “*a multi-hazard approach and inclusive risk-informed decision-making based on the open exchange and dissemination of disaggregated data*”.

In order to achieve this, it calls on: “*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*”. These recommendations for wider and more open information exchange rely to a significant extent on the availability of suitable outlets for publishing Disaster Risk Reduction (DRR) research and information (UNISDR 2015a). Achieving change requires the participation of the full range of stakeholders including authors, publishers and readers.

Sharing scientific findings internationally can be a challenge due to differences in research approaches and cultural practices, with researchers in low- and middle-income countries in non-English speaking nations or with poor academic resources being at a particular disadvantage. An additional challenge is the escalating publication costs in the face of diminishing research funds.

Yet, the impact of research findings on society is dependent on the success or failure of information distribution and knowledge sharing (including the translation of scientific findings into practical information), whether in print or electronic form. Local researchers need to be able to tap into the highest quality and most up to date research, while decision-makers need to be able to access easy to understand, relevant and practical information that can support their work.

Participants in this side event are expected to discuss proposals for publishing DRR research in a manner that is inclusive and of high quality to support the generation of science that is useful, usable and used and contribute to the S&T Road Map activities for the implementation of the Sendai Framework.

2) Stock taking

Academic publishing covers many forms including journal articles, monographs and reference works both in print and electronically. It is estimated that there are about 80 journals that are largely or completely focussed on matters relating to disaster risk reduction, including natural hazards and counter-terrorism. It is also estimated that there are a further 530 or so journals that frequently or occasionally publish DRR papers. By academic

standards, the best literature is not necessarily concentrated in the first group, but is spread throughout the 600+ journals. It is therefore difficult to know which source to rely on for high quality and relevant information that local researchers can engage with. In addition, relatively new models of publications such as electronic media and open-access platforms are proliferating and may overtake printing in the near future – a phenomenon which affects other scientific disciplines and is not confined to DRR, although DRR may be more susceptible, as a relatively new discipline, to a proliferation of new journals which makes discernment of which journals provide the best quality research.

Electronic platforms can address some of the issues in DRR publishing by improving accessibility issues; promoting knowledge synthesis more diverse and inclusive research and a broader readership; and better uptake of scientific outputs resulting in more resilient science and a stronger science-policy interface. However, these new models can also perpetuate pre-existing differences in access for example between the global North and South if publishing and access costs as well as access to the internet are a factor. Cost-free, crowd-sourcing models that remove traditional barriers to entry to scientific activities are beginning to develop and produce platforms for generating, peer-reviewing and disseminating scientific findings for free (Lin 2012).

In summary, the increasingly fast pace of change in academic publishing means that the future is hard to predict, not least because present trends are unsustainable, with a growing number of journals and papers across scientific disciplines and fields including DRR. This breadth and fragmentation creates a challenge for those who need to access and use the research, particularly if they need to draw on research from multiple disciplines to support an all-hazard, multidimensional approach to disaster risk.

Stakeholders

The users of publishing media range from traditional sources such as universities to NGOs, government institutions as well as private sector organisations who often subscribe to publishing repositories as part of their business resources. Members of publishing consortia include learned societies, university presses and private companies, leaving a gap in community representation particularly at the local level and in inclusiveness of traditional and indigenous knowledge.

Taking stock of the needs of the various stakeholders:

Publishers need to cater to their audiences and disseminate the results of high quality research in the fields of science and technology including social science. They also need to engage with national and international organisations (governmental and professional) bodies and communications industries in the electronic environment in improving the dissemination, storage and retrieval of scientific and technical information. Identifying optimal publishing models, which generate revenue while meeting the wider needs of their users and of society, is a more recent concern.

Researchers/authors face their own challenges with two particular aspects of note being 1) peer-review systems that can be difficult to navigate and appear unfair; and 2) publishing fees. Shaping research questions and data analysis strategies that make the best use of the data available can also be difficult due to the unavailability and inaccessibility of relevant and most up to date research outputs to inform research questions.

Searching for literature in order to keep abreast of the latest scientific developments requires considerable experience and judgement. There is a clear need for talented and well-trained people who can do this in order to direct users towards the sources of the knowledge that they need - skilled intermediaries. Institutions including libraries have a key role in supporting their local researchers and a number of initiatives have been set up to address this such as Research4Life (<http://www.research4life.org>), EIFL (Electronic Information for Libraries - <http://www.eifl.net>) and INASP (<http://www.inasp.info/en/>) in order to promote access to journals for free or at low cost in low resource settings. Such initiatives should be disseminated across various geographical regions in order to increase awareness of them among researchers, scientists and policy makers.

Other potential challenges for researchers include:

- a. The shift to electronic publishing
- b. Containing the cost of purchasing electronic and/or print subscriptions from for-profit commercial publishers
- c. Copyright of electronic publications, and their permanence for the future
- d. Limiting monopolies of open-access publishing
- e. Language and other publishing biases in the publications

Users of research outputs including researchers, other technical communities, policy makers and practitioners face challenges in accessing research that is not overly technical and has practical applications. Decision-makers are often concerned that the best research in terms of quality does not address the problems they face in their roles. Closing the gap between research and policy/practice can be supported by an improved dialogue between the different stakeholders (see Work Stream 4, Working Group 1 for a complementary discussion). Similarly, translating research that is already available into practical messages is a critical function in improving DRR.

3) The way forward

The UNISDR S&T Road Map for the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 (UNISDR 2015b) is informed by six scientific functions (UNISDR 2015c):

- (1) **Assessment** of the current state of data, scientific knowledge and technical availability on disaster risks and resilience (what is known, what is needed, what are the uncertainties, etc.);
- (2) **Synthesis** of scientific evidence in a timely, accessible and policy-relevant manner;

(3) Scientific **advice** to decision-makers through close collaboration and dialogue to identify knowledge needs including at national and local levels, and review policy options based on scientific evidence;

(4) **Monitoring and review** to ensure that new and up-to-date scientific information is used in data collection and monitoring progress towards disaster risk reduction and resilience building.

(5) **Communication and engagement** among policy-makers, stakeholders in all sectors and in the science and technology domains themselves to ensure useful knowledge is identified and needs are met, and scientists are better equipped to provide evidence and advice;

(6) **Capacity development** to ensure that all countries can produce, have access to and effectively use scientific information.

These proposals have been endorsed at high level international meetings including by the Science Council of Japan, UNISDR, IRDR and Tokyo University (SCU, UNISDR, IRDR, TU 2015).

Initial proposals, which will be highlighted at the side event, to meet the above include:

- 1) Promoting **capacity building** among all stakeholders including producers of knowledge, publishers and librarians and making the most of online media to facilitate access:
 - a) Enhancing the quality of publication by providing guidance on writing peer-reviewed papers at the grassroots level and advertising relevant courses including through online programmes and encouraging the use of free-to-access and free-to-submit publishing resources;
 - b) Considering establishing regional and local networks to support capacity building in accessing and disseminating research in addition to national and international ones. For example, examining how to overcome language and entry to publishing barriers could be achieved through regional strategies and mentoring by regional DRR experts with experience in publishing;
 - c) Examining how research and other initiatives in the corporate and NGO sectors support access to publications and journals through existing platforms free or at low cost and how researchers, decision-makers and librarians can be informed and supported in accessing these in low- and middle-income countries.

- 2) Promoting **rationalised or streamlined knowledge dissemination systems while preserving diversity in publishing** including:
 - a) Joint efforts with the scientific and technological community, academia and the private sector to establish special issues to disseminate and share good practices at international level;
 - b) Collation, appraisal, management and use of relevant and practical DRR information and its dissemination, taking into account the needs of different categories of users, as appropriate;
 - c) Publication of location-based disaster risk information, including risk maps, for decision makers, the general public and communities at risk of exposure to disaster in an appropriate format,

- 3) Exploring the possibility of specific **DRR publishing platform(s)** that may help to centralise and rationalise or streamline DRR information and promote the availability and dissemination of the best research to all including:
 - a) Considering an online outlet promoting: the 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;
 - b) Creating or strengthening existing consortia of publishers or Journals related to DRR along sub-themes to enhance the publication of DRR materials;
 - c) Considering a mapping exercise of the top 80 or so journals in DRR and relevant disciplines that would map existing research/NGO initiatives that promote access to published resources.

Finally , 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). The Knowledge Hubs Side Event focuses on the challenge of sharing ‘know-how’ information, expertise and knowledge through the development of specific disaster knowledge hubs to support UN member states on the use of science and technology for disaster risk management policies and operations – to do this most effectively it requires high quality evidence based or evidence informed science. The following will be considered in the Knowledge Hub side event to help to rationalise DRR information and promote the availability and dissemination of the best research to all including:

- Consider how to identify all the Knowledge Hubs already in existence that hold DRR/DRM information
- Consider how to provide links to the platforms for the sharing of the state of knowledge of disaster science in real time
- 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
- Creating or strengthening existing knowledge hub networks related to DRR to develop common platforms for activity for knowledge and data sharing to implement the Sendai Framework

The overlap between the knowledge access mechanisms proposed in this side event and the aspirations of the knowledge hub side event is likely to be mutually beneficial in delivering the expected outcomes of both of these groups.

It is hoped that all stakeholders including the publishing sector, researchers and users of scientific information will support the implementation of the S&T Road Map by promoting the highest quality of outputs, while ensuring diversity and inclusiveness are taken into account.

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Guiding Principles

19(g) Disaster risk reduction requires a multi-hazard approach and inclusive risk-informed decision-making based on the open exchange and dissemination of disaggregated data.

Priority 1: National and Local Level

24. (a) To promote the collection, analysis, management and use of relevant data and practical information and ensure its dissemination, taking into account the needs of different categories of users, as appropriate;

(c) To develop, periodically update and disseminate, as appropriate, location-based disaster risk information, including risk maps, to decision makers, the general public and communities at risk of exposure to disaster in an appropriate format by using, as applicable, geospatial information technology;

(f) To promote real time access to reliable data, make use of space and in situ information, including geographic information systems (GIS), and use information and communications technology innovations to enhance measurement tools and the collection, analysis and dissemination of data;

(o) To enhance collaboration among people at the local level to disseminate disaster risk information through the involvement of community-based organizations and nongovernmental organizations.

Priority 1: Global and Regional Levels

25 (a) To enhance the development and dissemination of science-based methodologies and tools to record and share disaster losses and relevant disaggregated data and statistics, as well as to strengthen disaster risk modelling, assessment, mapping, monitoring and multi-hazard early warning systems;

(d) 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;

(g) disseminate risk information with the best use of geospatial information technology; contribute to the update of the publication entitled “2009 UNISDR Terminology on Disaster Risk Reduction

Priority 2: National and Local Level

27 (g) build awareness and knowledge of disaster risk through sharing and dissemination of non-sensitive disaster risk information and data, contribute to and coordinate reports on local and national disaster risk

Priority 4: Global and Regional Levels

34(b) 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;

Role of Stakeholders

36 (d) Media to take an active and inclusive role at the local, national, regional and global levels in contributing to the raising of public awareness and understanding and disseminate accurate and non-sensitive disaster risk, hazard and disaster information, including on small-scale disasters, in a simple, transparent, easy-to-understand and accessible manner