IRDR Scientific Committee meeting
6th May 2016 ICSU, Paris

Outcomes of the UNISDR / STAG Conference on Science and Technology, Geneva, January 2016, and discussion of the IRDR contribution to the planned roadmap and partnership

Virginia Murray

Health consequences of El Niño

ISDR

International Strategy for Disaster Reduction

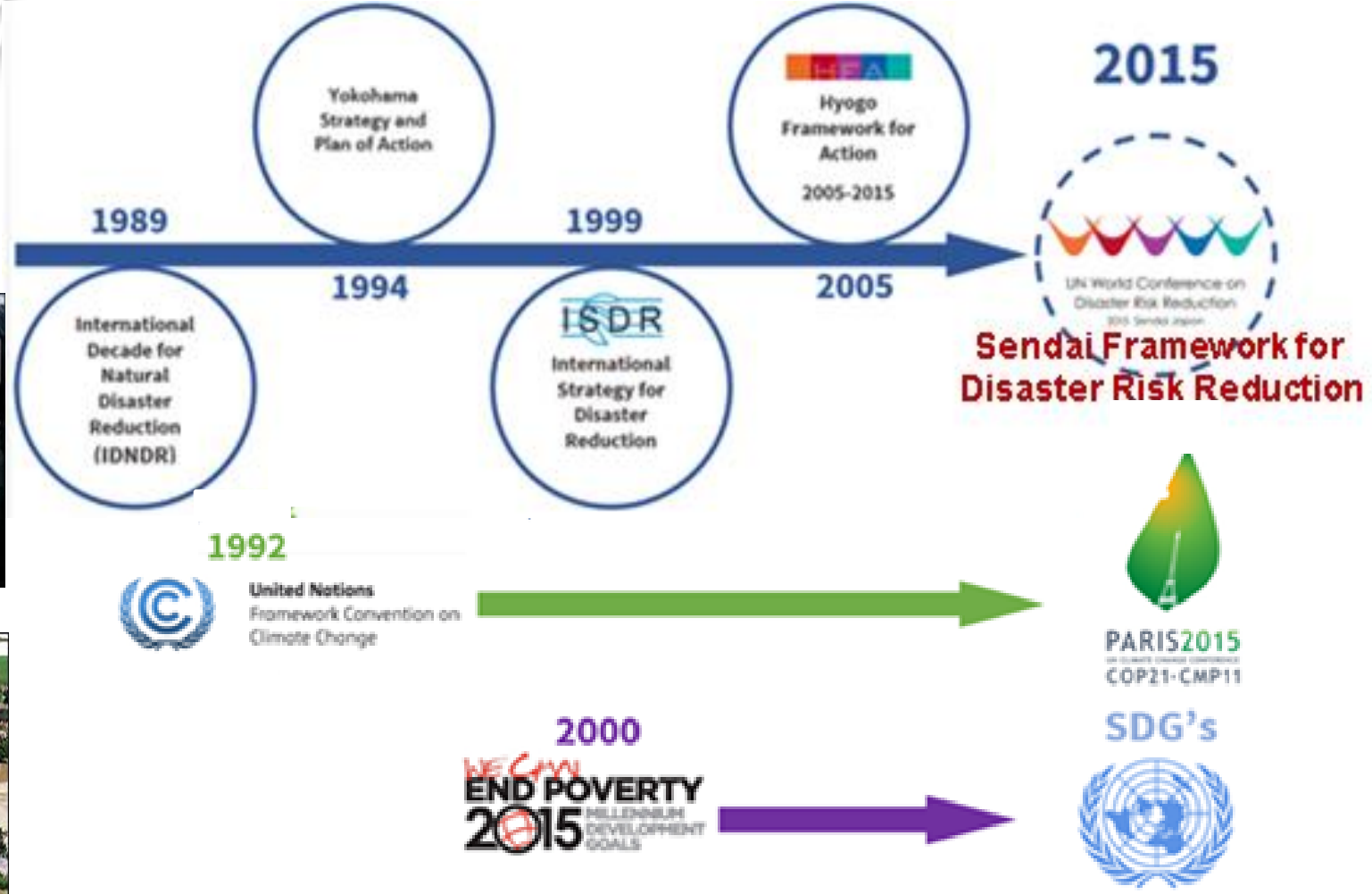
HFA

Hyogo Framework for Action 2005 - 2015:

Building the Resilience of Nations and Communities to Disasters

http://www.unisdr.org/eng/hfa/docs/HFA-brochure-English.pdf

Why 2015 mattered so much



Sendai Framework for Disaster Risk Reduction 2015 - 2030

United Nations

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Sendai Framework for Disaster Risk Reduction 2015-2030

Main result of the 3nd UN World Conference on DRR, Sendai, March 2015

Outcome:

The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.

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Sendai Framework for Disaster Risk Reduction 2015-2030

Priorities for action

1. **Understanding** Disaster Risk
2. Strengthening disaster risk **governance** to manage disaster risk
3. **Investing** in disaster risk reduction for resilience
4. **Enhancing disaster preparedness for effective response and to 'Build Back Better' in recovery, rehabilitation and reconstruction**

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Priority 1 Understanding Disaster Risk

- 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**;

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(k) In the post-disaster recovery, rehabilitation and reconstruction p the creation of and to reduce disaster risk by "Building Back Be education and awareness of disaster risk;

(l) An effective and meaningful global partnership and the international cooperation, including the fulfilment of respectiv development assistance by developed countries, are essential management;

(m) Developing countries, in particular the least developed countri States, landlocked developing countries and African countries, and other countries facing specific disaster risk challenges, need timely provision of support, including through finance, technol building from developed countries and partners tailored to th identified by them.

IV. Priorities for action

20. Taking into account the experience gained through the impl Framework for Action, and in pursuance of the expected outcome ar focused action within and across sectors by States at local, national, r the following four priority areas:

Priority 1: Understanding disaster risk.

Priority 2: Strengthening disaster risk governance to manage disa

Priority 3: Investing in disaster risk reduction for resilience.

Priority 4: Enhancing disaster preparedness for effective response in recovery, rehabilitation and reconstruction.

21. In their approach to disaster risk reduction, States, regional and i and other relevant stakeholders should take into consideration the each of these four priorities and should implement them, as appropriat respective capacities and capabilities, in line with national laws and r

22. In the context of increasing global interdependence, concerted int enabling international environment and means of implementation ar contribute to developing the knowledge, capacities and motivation fo all levels, in particular for developing countries.

Priority 1: Understanding disaster risk

23. Policies and practices for disaster risk management should be b of disaster risk in all its dimensions of vulnerability, capacity, expos hazard characteristics and the environment. Such knowledge can be of pre-disaster risk assessment, for prevention and mitigation and implementation of appropriate preparedness and effective response

National and local levels

24. To achieve this, it is important:

(a) To promote the collection, analysis, management and use of r information and ensure its dissemination, taking into account the n of users, as appropriate;

(b) To encourage the use of and strengthening of baselines and p risks, vulnerability, capacity, exposure, hazard characteristics a effects at the relevant social and spatial scale on ecosyst circumstances;

(c) To develop, periodically update and disseminate, as appropriate, information, including risk maps, to decision makers, the gene at risk of exposure to disaster in an appropriate format by usi information technology;

(d) To systematically evaluate, record, share and publicly accou understand the economic, social, health, education, environm impacts, as appropriate, in the context of event-specific hazard information;

(e) To make non-sensitive hazard-exposure, vulnerability, risk, disa information freely available and accessible, as appropriate;

(f) To promote real time access to reliable data, make use of spa including geographic information systems (GIS), and use inform technology innovations to enhance measurement tools and dissemination of data;

(g) To build the knowledge of government officials at all levels, civ volunteers, as well as the private sector, through sharing ex good practices and training and education on disaster risk red existing training and education mechanisms and peer learning;

(h) To promote and improve dialogue and cooperation among communities, other relevant stakeholders and policymakers in policy interface for effective decision-making in disaster risk m

(i) To ensure the use of traditional, indigenous and local kn appropriate, to complement scientific knowledge in disaste development and implementation of policies, strategies, plans sectors, with a cross-sectoral approach, which should be tail context;

(j) To strengthen technical and scientific capacity to capitalize knowledge and to develop and apply methodologies and mod vulnerabilities and exposure to all hazards;

(k) To promote investments in innovation and technology develo hazard and solution-driven research in disaster risk managemen interdependencies and social, economic, educational and en disaster risks;

(l) To promote the incorporation of disaster risk knowledge, in mitigation, preparedness, response, recovery and rehabilitatio education, as well as in civic education at all levels, as well as in training;

(m) To promote national strategies to strengthen public educatio risk reduction, including disaster risk information and know social media and community mobilization, taking into account needs;

(n) To apply risk information in all its dimensions of vulnerability persons, communities, countries and assets, as well as hazard and implement disaster risk reduction policies;

(o) To enhance collaboration among people at the local level t information through the involvement of community-base governmental organizations.

Global and regional levels

25. To achieve this, it is important:

(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;

(b) To promote the conduct of comprehensive surveys on multi-hazard disaster risks and the development of regional disaster risk assessments and maps, including climate change scenarios;

(c) To promote and enhance, through international cooperation, including technology transfer, access to and the sharing and use of non-sensitive data and information, as appropriate, communications and geospatial and space-based technologies and related services; maintain and strengthen in situ and remotely-sensed earth and climate observations; and strengthen the utilization of media, including social media, traditional media, big data and mobile phone networks, to support national measures for successful disaster risk communication, as appropriate and in accordance with national laws;

(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;

(e) 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;

(f) To develop effective global and regional campaigns as instruments for public awareness and education, building on the existing ones (for example, the "One million safe schools and hospitals" initiative; the "Making Cities Resilient: My city is getting ready" campaign; the United Nations Sasakawa Award for Disaster Risk Reduction; and the annual United Nations International Day for Disaster Reduction), to promote a culture of disaster prevention, resilience and responsible citizenship, generate understanding of disaster risk, support mutual learning and share experiences, and encourage public and private stakeholders to actively engage in such initiatives and to develop new ones at the local, national, regional and global levels;

(g) 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;

(h) To encourage the availability of copyrighted and patented materials, including through negotiated concessions, as appropriate;

(i) 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.

Priority 1 Understanding Disaster Risk

- **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 all regions** with the support of the UNISDR Scientific and Technical Advisory Group in order to:

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Priority 1 Understanding Disaster Risk

- strengthen the **evidence-base** in support of the implementation of this framework;
- promote **scientific research of disaster risk patterns, causes and effects**;
- **disseminate risk information** with the best use of geospatial information technology;
- use **post-disaster reviews** as opportunities to enhance learning and public policy; and disseminate studies

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UNISDR SCIENCE AND TECHNOLOGY CONFERENCE

Mobilising science to implement the Sendai Framework

27-29 JANUARY 2016 | GENEVA, SWITZERLAND

community will best support the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030.

The UNISDR Science and Technology Conference on the implementation

2015 S

2013 S

UNISDR

technic

29 February 2016

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The Science and Technology Roadmap to Support the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030

The Sendai Framework for Disaster Risk Reduction 2015-2030 was agreed at the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan in March 2015 and endorsed by the UN General Assembly in June 2015.

The goal of the Sendai Framework is to prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience.

The expected outcome till 2030 is to achieve substantial reduction in disaster risk and losses in lives, livelihoods and health in the economic, physical, social, cultural and environmental

http://www.preventionweb.net/files/45270_unisdrscienceandtechnologyroadmap.pdf

Int J Disaster Risk Sci
DOI 10.1007/s13753-016-0081-x

www.ijdrs.com
www.springer.com/13753

ARTICLE

Reflections on a Science and Technology Agenda for 21st Century Disaster Risk Reduction

Based on the Scientific Content of the 2016 UNISDR Science and Technology Conference on the Implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030

Amina Aitsi-Selmi[1] · Virginia Murray[1,2] · Chadia Wannous[3] · Chloe Dickinson[1] · David Johnston[4] · Akiyuki Kawasaki[5] · Anne-Sophie Stevance[6] · Tiffany Yeung[7]

Abstract The first international conference for the post-2015 United Nations landmark agreements (Sendai Framework for Disaster Risk Reduction 2015–2030, Sustainable Development Goals, and Paris Agreement on Climate Change) was held in January 2016 to discuss the role of science and technology in implementing the Sendai Framework for Disaster Risk Reduction 2015–2030. The risk reduction (DRR) science and technology. This article describes the evolution of the role of science and technology in the policy process building up to the Sendai Framework adoption that resulted in an unprecedented emphasis on science in the text agreed on by 187 United Nations member states in March 2015 and endorsed by the United Nations General Assembly in June 2015. Contri-

http://www.evidenceaid.org/wp-content/uploads/2013/02/Aitsi-Selmi_Murray_et-al_Reflections-on-a-Science-and-Technology-Agenda-for-21st-Century-DRR_March-2016.pdf

Way forward

1) Need for formal "national DRR science-policy councils/platforms" or a form of national focal points for science to support disaster risk reduction and management plans identified. Focal points could include platforms or chief scientific advisors function.

2) Focusing more attention on understanding the root causes and underlying risk factors of disaster risk including interlinkages between DRR, sustainable development, and climate change mitigation and adaptation, and ensuring DRR is mainstreamed into other sectors, policies, and strategies. **A call for an evidence-based review** of risk assessment and its implementation was made.

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Way forward

3) Conducting a **periodic review of knowled**ge needs, new science (including implementation science), and research gaps. More effort is needed to work out how to achieve this and ensure avoiding duplication of effort.

4) Using the expanding S&T evidence base to support capacity building and ensure that capacity development for disaster risk management is interdisciplinary, shared across international boundaries, and demand-driven.

5) Leveraging science for DRR through innovative schemes that are long-term and provide opportunities to enhance the dialogue between decision makers and researchers through interdisciplinary and participatory networks to ensure integrated disaster risk governance.

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Way forward

6) Supporting integrated and holistic approaches to the use of S&T for DRR that reflect the wide scope of the Sendai Framework, which applies to **disasters caused by natural or human-made hazards, as well as environmental, technological, and biological hazards**.

7) Enhancing the role of **social science** in the multidisciplinary effort to understand behavior and decision making in DRR and the role of the wider societal context in disaster risk creation and reduction, and incorporating key markers of socioeconomic vulnerability.

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Way forward

8) Supporting open access, multi-hazard data platforms and standardized approaches and tools to map and use of data and scenarios that make science sensible to decision makers and the general public.

9) Using participatory approaches for communities to work together to co-produce risk knowledge, define options, and support evidence-based decision making. Users must be included in the earliest stages of developing research and technology, including through improved dialogues with citizen groups, involvement of local and national universities and institutions, young scientists, and the use of indigenous knowledge.

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Way forward

10) Documenting and analyzing the effects of disasters and DRR interventions, including ethical implications of scientific research.

11) Strengthening DRR science-policy and cross-sectoral dialogues to facilitate risk assessments, post disaster reviews, data sharing, and decision making.

12) Producing guidelines for evidence-based risk assessments and their implementation to support the practical application of risk assessment

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Way forward

- Other notable outcomes included the proposal to launch a Women in DRR Science platform supported by UN Women, UNISDR, and UNESCO; and the launch of the Young Scientists in DRR platform that is coordinated by the UN Major Group for Children and Youth.
- The official conference outcomes are summarized on the conference website (UNISDR 2016r).

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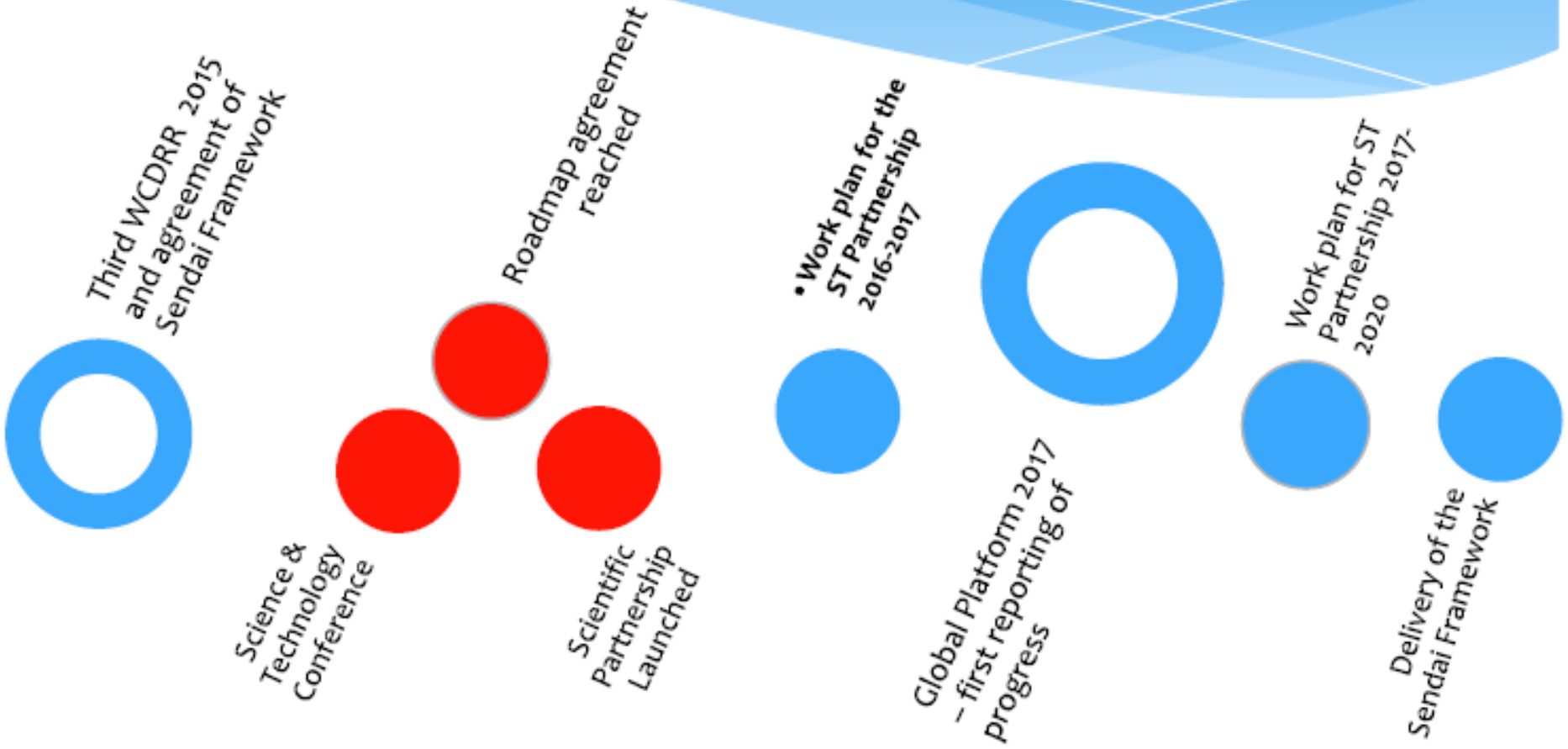
Development of the Science and Technology Roadmap – a timeline



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Implementing the Sendai Framework

389
days to go

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GLOBAL PLATFORM FOR DISASTER RISK REDUCTION - FIFTH SESSION

Versión en Español

22-26 MAY, 2017 | CANCUN, MEXICO | #MEXICOGP2017 | #SWITCH2SENDAI

ABOUT THE GLOBAL PLATFORM

The Fifth Global Platform for Disaster Risk Reduction will be held in Cancun, Mexico on 22-26 May, 2017. The Global Platform is the most important international forum dedicated to the disaster risk reduction agenda, and this will be the first time it has been staged outside Geneva.

The Global Platform will mark the first opportunity for the international community to review global progress on the implementation of the Sendai Framework for Disaster Risk Reduction, which was adopted in Japan in 2015. More than 5,000 participants are expected, including policy makers and disaster risk managers.

"It's my pleasure to extend a cheerful welcome to you all to

PRACTICAL INFORMATION

Save the date

Registration will open soon

Watch: Mexico tourism

Watch: Mexico in action during Cyclone Patricia

Sign up for updates. Send your email address to: globalplatform@un.org

DOCUMENTS & UPDATES

Global Platform 2017: Press release

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World Health Organization

INTERNATIONAL CONFERENCE ON THE IMPLEMENTATION OF THE HEALTH ASPECTS OF THE SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION 2015 – 2030

10 - 11 MARCH 2016 | BANGKOK, THAILAND

12) Producing guidelines for evidence-based risk assessments and their implementation to support the practical application of risk assessment

(e) Substantially increase the number of countries with national and local disaster risk reduction strategies

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HIWeather

A 10-year programme of the World Meteorological Organisation

Despite recent advances in forecasting & emergency preparedness, weather-related disasters continue to kill, displace populations & damage property / infrastructure, while less severe weather events place an increasing strain on society, especially in countries with fragile economies and infrastructure.

The potential of advanced weather-related hazard forecasting has been demonstrated. There is a huge opportunity to protect lives and benefit communities, if we can realise this potential across the world.

HIWeather will

"Promote Co-Operative International Research
to achieve a Dramatic Increase
in Resilience to High Impact Weather, worldwide,

through Improving Forecasts for timescales of minutes to two weeks
and Enhancing their Communication & Utility
in Social, Economic & Environmental Applications"

WMO
OMM

Karmen Poljansek

State of the art DRMKC Report 2017:

1. From Concept and Scoping to Draft Outline

Proposal:

Title: **Science for Disaster Risk Management**

Message: **Knowing better and losing less**

Expectations on the conceptual level

This report will present the **state of science in DRM**. The narrower purpose is to show **practical use of scientific knowledge in DRM actions in Europe**. The report shall provide reviews of the scientific evidence base and its practical use in various areas of disaster risk management, in a format that is intended to be accessible to the well-informed practitioner. The reviews of the scientific evidence base are summaries of (1) recent advances/outcomes

Action Plan - 6 Expected Outcomes

http://drmkc.jrc.ec.europa.eu/knowledge/Meetings/Meeting-2015

NATIONAL CENTRE FOR RESILIENCE

BUILDING SCOTLAND'S RESILIENCE TO NATURAL HAZARDS

- The Centre will be a **collaborative partnership,** bringing together many partners from the **resilience, scientific and academic fields** as well as harnessing practitioners' expertise and community knowledge.
- The Centre will provide a unique environment for **resilience partners to collaborate and continue building Scotland's resilience capabilities**

http://www.readyscotland.org/ready-government/ncr/

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IRDR Scientific Committee
Challenges and opportunities?

- The **Sendai Framework** provides opportunities **to enhance research capabilities and partnerships to plan and prepare for, respond to, and recover from natural hazards, disasters and other emergencies.**

- Offers **opportunities for partnership working on**
  - **Risk assessment and implementation peer review**
  - **JRC State of the Art Science Review**
  - **High Impact Weather**
  - **? National Centres for Resilience**

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