Meeting Documents for Agenda Item 4

***Readers' guidance**: *I - For Information; *C - For Comment; *D - For Decision*

IRDR
Integrated Research on Disaster Risk

12th Meeting of the IRDR Science Committee
ICSU Secretariat, Paris, France, 13-15 November 2014

Item 4: Networking and Partnership Session

Item 4.1: Introduction: IRDR and the Policy Context (HFA2)

(N.B.: Input to this section will be provided by the delegates from UNISDR and ICSU, with a commentary from STAG and IRDR IPO on aspects they would like to highlight for the benefit of the SC members; the text that follows and the links and documents provided merely serve as introductory and background documents.)

The analysis of the implementation of the **Hyogo Framework for Action 2005** highlighted gaps in the formulation of goals and priorities for actions. This has brought the need for a post-2015 framework for disaster risk reduction (Hyogo Framework for Action 2/HFA2) to update and reorder the strategic goals and priorities, give visibility to all levels, and place emphasis on stakeholders and their role in advancing the priorities.

IRDR has been integrally involved in the consultations towards the development of a post-2015 disaster risk reduction framework. ICSU, one of IRDR's three Co-Sponsors, is acting as the Organising Partner for the Science and Technology (S&T) Community Major Group for the **Third World Conference on Disaster Risk Reduction (WCDRR)**. Additionally, IRDR also led the **S&T Community Major Group** on behalf of ICSU at PrepCom1, 14-15 July 2014, and has been part of the Major Group discussions ever since.

Click here for the S&T Community Major Group statement, read to the PrepCom1 plenary session of Member States. The Major Group also contributed to the technical sessions and workshops.

Key positions advocated included:

- Strengthen linkages between sustainable development goals (SDGs) and DRR, recognising DRR as a key driver for advancing SDGs;

- Better knowledge flows (co-design, advice, capacity building, etc.) between the S&T domain and civil society and government at all levels, aiming to improve communication and risk literacy among all communities;

- Ensure the emergence of a robust evidence-base for decision-making in public and private sectors at all levels (reference to indicators, targets, databases, etc.);

- Recognise, in research and action, the specific needs of both SIDS and LDCs as well as developed counties.

A summary of the meeting can be read here.

Internally, ICSU decided to use the window of opportunity also to draw up a synthesis of available DRR knowledge with the help of the **ad hoc expert group** convened earlier in 2014 to debate the usefulness of advisory mechanisms. The brief for this exercise can be seen here. The IRDR Executive Group is part of the drafting group, chaired by Alik Ismail-Zade from IUGG.

On 8 August 2014, the two co-Chairs of the Preparatory Committee for the 3rd UN WCDRR, Ambassadors Päivi Kairamo *(Finland)* and Thani Thongphakdi *(Thailand)*, released the **pre-zero draft of the post-2015 framework for disaster risk reduction**. It served as the basis for the open-ended informal consultative meetings in September and October 2014. Read the pre-zero draft here.

ICSU and IRDR consulted widely and compiled a documentation reflecting the views submitted from all sectors of the scientific community, including from the social sciences and humanities (click here).

IRDR provided **an independent collective response** to the pre-zero draft of the post 2015 framework for disaster risk reduction, which was also fed into the Major Group discussions. The text identified three primary concerns:

1. The need to reflect, on the basis of state of the art prospective knowledge, a forward-looking agenda, notably in terms of the links to sustainable development (replacing "resilience" with "transformations to sustainable and equitable development");
2. Emphasis on the strengthening of support for the science as the foundation for action-oriented cutting-edge knowledge, including all the necessary monitoring activities;
3. Emphasis on better connecting national and local levels for the collection of the necessary vulnerability and loss data as prerequisites for both responsive and proactive planning and investment.

Read the IRDR response to the pre-zero draft of the post-2015 framework for disaster risk reduction here.

These and other points were expanded and discussed in depth during subsequent sessions, where, in smaller delegations the S&T Major Group (STMG) proposed comments to all sections of the draft. In joint sessions with the other major groups, with member states, and with the co-chairs, these key positions were further developed.

A number of meetings were held that sought to explore "how science and technology can help reduce the human, economic and environmental impact of disasters and emergencies." A survey of government positions around the globe revealed that a key message was about "embedding science into the heart of the post-2015 DRR framework as a tool for implementation."

For UNISDR, the importance of strengthening mechanisms to provide scientific input (whether in the form of policy advice, capacity building, evidence or foresight) has also been

recognised as a key element for the success of HFA2. So much so in fact that UNISDR also published on their website an initial non-paper, developed by an internal working group of the STMG, on the modalities of an **international science advisory mechanism** (click here).

Having clarified concerns about the role of existing DRR science networks and resources, an ICSU-hosted meeting on 1 October suggested to baptise the format for the framework that would help advance the development and better use of DRR science **as "STEP4DRR – or Science and Technology Engagement Partnership for DRR"** emphasising both the inclusiveness and plurality needed as well as – in the acronym chosen – the notion of steady evolution and progress of the challenges to be tackled. It would be comprised of a set of four knowledge-based actions (such synthesis of the state-of-the-art of science and all relevant DRR knowledge, assessment, monitoring and review) and two cross-cutting as knowledge building actions (focusing on communication and engagement and capacity building across all sectors).

The outcome of the multiple rounds of national and regional consultations prior to PrepCom1, the exchanges during the open meetings, and initial feedback received from Major Group communities and member states allowed the co-chairs, with support from the UNISDR secretariat, to prepare **a Zero-Draft** (click here).

In October, ICSU and IRDR are planning to consult members and stakeholders for comments on the zero-draft. The MGST is working with the other Major Groups towards a joint statement. While IRDR had submitted a proposal for a public forum session (which included a request to convene funding agencies), it is also involved, with ICSU as Organising Partner for the MGST and other UN agencies, government delegations etc., in preparing a session on applying science and technology to DRR in the multi-stakeholder segment of the 3rd WCDRR. The focus of this session is expected to be on "commitments," i.e. tangible and sector-specific contributions towards the HFA2 objectives. At the time of writing, this discussion was still in the early stages.

Attachments:

4.1.1. Science and Technology (S&T) Community Major Group (STMG/MGST) statement at Prepcom 1, 14-15 July 2014
4.1.2. Outcomes of PrepCom 1, 14-15 July 2014, Geneva: Key outcomes for Science and Technology
4.1.3. Brief of the ICSU Ad Hoc Expert Group on Hazards and Disasters (Synthesis Paper)
4.1.4. Pre-Zero Draft of the Post-2015 Framework for Disaster Risk Reduction
4.1.5. S&T Major Group Summary of Comments on the Pre-Zero-Draft
4.1.6. IRDR Independent Statement on Pre-Zero Draft
4.1.7. Statements from the Science and Technology (S&T) Major Group at open-ended informal consultative meetings by the co-Chairs of the WCDRR Preparatory Committee
- 19 September 2014 – S&T Major Group Statement
- 18 September 2014 – S&T Major Group Statement

4.1.8. STMG Non Paper: "How the science and technology community can be strengthened for implementation of the post-2015 framework for disaster risk reduction"
4.1.9. Meeting on Proposal from the S&T Community to Strengthen Science in the Post-2015 DRR Framework, Paris, 1 October 2014
4.1.10. Summary of discussions with WCDRR Co-Chairs, 2 October 2014 ("Thank you

Letter")
4.1.11. Proposed "revised approach" for incorporating science into HFA2
4.1.12. Zero-Draft of the Post-2015 Framework for Disaster Risk Reduction
4.1.13. Chart of the Zero-Draft of the Post-2015 Framework for Disaster Risk Reduction

Item 4.2: Partners on the Science and Technology Major Group

A brief overview is given of the preparations for the Tokyo Conference on International Study for Disaster Risk Reduction and Resilience, including the Tokyo statement, and how this conference is going to reinforce the efforts of the STMG on strengthening the role of science and technology under HFA2.

Following the issuing of the London Statement in March 2014, which called for the establishment of an international scientific advisory mechanism for decision-making in DRR, efforts were made to accompany the ongoing debates on better interfaces between science and policy-making with evidence on existing practices.

A brief report is given of the analysis conducted through two projects commissioned by UKCDS and ODI on national mechanisms to link scientific knowledge and decision-making in DRR and on the functioning of global and international scientific advisory mechanisms in other domains.

Attachments:

4.2.1. Draft Agenda: Tokyo Conference on International Study for Disaster Risk Reduction and Resilience, 14-16 January 2015
4.2.2. Draft Tokyo Statement

Item 4.3: IRDR in 2014 (Short presentation on IRDR for the Policy Context - HFA2)

Project Co-Chairs will provide very brief introductions into their projects (including progress made, outcomes and objectives to be reached).

Representatives of the ICoEs will give a brief overview of their thematic focus, current and envisaged activities and international networks.

SC members will, as appropriate, refer to the role of affiliated projects.

SC Chair / ED will briefly report on the National and Regional Committees Workshop.

SC Chair / ED / delegates will give a very brief overview of regional activities on hazards and disasters (e.g.: ICSU ROs, UNISDR ROs).

Where appropriate, presentations should refer to possible points of contact with the external partners present at the meeting or highlight existing links to be further developed.

Attachments:

4.3.1. Composition of the ICSU ROAP Steering Group
4.3.2. Minutes, Steering Group on Natural Hazards and Risk for the AP Region 27-28 April 2014
4.3.3. Composition of the ICSU ROA Consortium on Hazards and Disasters
4.3.4. Document about the ICSU ROA Consortium
4.3.5. Swedish/Africa Consortium-Building Workshop Programme, 31 October 2014
4.3.6. Composition of the ICSU ROLAC Steering Group for DRR (check name)
4.3.7. Programme of the Central American Workshop on Natural Disasters, Volcanic Risks etc., 19-20 November 2014
4.3.8. Statements from UNISDR Regional Platforms 2014
4.3.9. UNISDR Workshop on Risk-Sensitive Investment, Bangkok, 15-17 October 2014
4.3.10. UNESCAP: Agenda and concept note, UNESCAP, Sendai, 27-29 Oct 2014

Item 4.4: Partnerships

Delegates from UN and other intergovernmental agencies will give short presentations of their ongoing activities of relevance for DRR and new or anticipated activities under HFA2. One focus will be on suggesting specific areas and formats for collaboration.

They will also briefly comment on the role they see for their organisation under the proposal of the joint statement by UN agencies.

The Executive Director, in his capacity of having been asked to lead the delegation by ICSU as Organising Partner for the STMG, will briefly report on exchanges between STMG and other Major Groups in the period between the two PrepComs, on the emerging joint statement, and on opportunities for joint activities to advance platforms for co-design on research (e.g. business and industry; municipalities).

The concept of the nine Major Groups comes from Agenda 21. In 1992, the UN Conference on Environment and Development in Rio had agreed to cluster civil society actors for the purposes of the negotiations towards sustainable development into the nine Major Groups (Chapter 23 of Agenda 21). The Major Groups as defined by Agenda 21 are:

1. Women
2. Children and Youth
3. Farmers
4. Indigenous Peoples
5. NGOs
6. Trade Unions
7. Local Authorities
8. Science and Technology
9. Business and Industry

There have been discussions—in ICSU and among active contributors from the IRDR community—about whether the inclusion of S&T into civil society stakeholders, rather than as an enabling partner, is appropriate. This discussion in the DRR domain, to some extent reflects broader debates about the relationship between science and policy-making, as

witnessed during the series of events on the sidelines of the ICSU General Assembly 2014, which focused on building a network of chief science advisors to governments (and advising organisations). It is also reflected in discussions, at the interface between DRR science and practitioners, about the usefulness, usability and actual use of scientific knowledge at local level (a topic also alluded to in the IRDR ICoE Taipei "flagship" proposal).

Representatives from invited non-governmental stakeholder organisations from different Major Groups (here: INGOs) will report on their current and envisaged activities.

Item 4.5: IRDR Consultative Forum

At the end of the session, SC and invited speakers will discuss the format and function of a "Consultative Forum" for IRDR. The Consultative Forum was initially (in the ICSU Science Plan of 2008) conceived as a platform for partner organisations from the world of scientific research. In the light of the emphasis given to co-design of research in more recent discussions in all three Co-Sponsor organisations (witness the "engagement committee" of FE), and given the positive interaction with other Major Groups, it is proposed to revisit the idea of the Consultative Forum and to design it as a platform for broad stakeholder interaction with a view to advancing the co-design of DRR research.

Attachments:

4.4.1 Joint Statement of the UN Agencies to PrepCom1
4.4.2 Joint Statement of the UN Agencies the open-ended informal consultative meetings - 2 October 2014
4.4.3 MoU IRDR/WMO WWRP/WG SERA
4.4.4 Report of the 4th Meeting of the WWRP WG SERA, 21-22 August 2014
4.4.5 UNEP (2014). Promoting Ecosystems for Disaster Risk Reduction and Climate Change Adaptation: Opportunities for Integration.
4.4.6. UNISDR STAG Platform and Network Survey (April 2014)
4.4.7. UNISDR Call for Contributions / Case Studies to STAG Report 2014
4.4.8. UN System of Major Groups
4.4.9. Draft joint statement of Major Groups (to be tabled – will only be ready just before PrepCom2)
4.4.10. GNDR Comments on Pre-Zero Draft - 8 August 2014
4.5.1. References to Consultative Forum in the Science Plan (ICSU 2008)

Action:

4.1 The SC is invited to discuss the presentations and to reflect on the input received, with a view to the relevant session on day 2, aimed at identifying elements for the 2015 IRDR Consultative Forum.

Third UN World Conference on Disaster Risk Reduction

Preparatory Committee – First Session (Geneva, 14-15 July 2014)

Science and Technology Major Group Statement (delivered by R. Klein, ICSU-IRDR)

This statement seeks to synthesize research and reflections produced by programmes and policy initiatives led by members of the S&T Major Group, in the context of HFA, but in part also independently as expression of the scientific quest for new knowledge in interaction with society. In the run-up to the first session of the preparatory committee meeting, the Organising Partner for the S&T Major Group, ICSU (the International Council for Science), had organized an open consultation process that generated further input from S&T communities worldwide, across fields of knowledge as diverse as the natural, engineering, and health sciences as well as the socio-economic and human sciences. The resulting statement focuses on an over-arching mechanism to improve the usefulness, usability and use of S&T knowledge in and by society as key action point for the post-2015 HFA-II agenda.

Scientific research and practitioner experience have revealed that disasters, sustainable development and poverty are intimately linked. It has become clear that the economic impact of disasters exceeds the costs of mitigation and preparedness, and that disasters can turn back successes in poverty alleviation. At the same time, integrated disaster risk science, that draws on the natural, engineering, and health sciences as well as on the socio-economic, and human sciences, and that works closely with affected communities, produce insights and tools that allow societies to better prepare for, mitigate and react to disasters, possibly even prevent some of them. Science is evolving rapidly and continuously so that regular reviewing and peer learning experiences are needed, across sectors and at different scales, to make best use of cutting-edge S&T in the pursuit of resilient societies.

For this to occur, we need to work towards new forms of interaction bringing together S&T knowledge, political decision-making and community involvement. New data sharing technologies, advanced observatory and ICT (Information and Communication Technology) capabilities, complex risk modeling and the development of predictive analytics, adaptation technologies, as well as the deeper engagement of communities through new communication tools, to name but a few areas, have revolutionized the ways in which S&T can help societies strengthen their resilience. Socio-economic and cultural analysis helps us to understand the root causes of disasters, assess the weight of socio-economic differentials, enhance awareness for the need to ensure business continuity in the face of disaster risk, gender-sensitive approaches,and the consideration of cultural patterns, ethnic diversity and local institutional specificities among

the factors influencing of risk literacy. The specific vulnerabilities of groups such as migrants, the elderly, different groups of disabled persons, children, etc should also be included. Already, the S&T community has demonstrated their commitment to bring about real change in disaster risk reduction, with initiatives such as the IRDR research programme and its June 2014 Beijing conference on integrated disaster risk science as a tool for sustainability. Another example is the upcoming global S&T conference in January 2015 in Tokyo, which will highlight the importance of capacity building, global education, training, and knowledge co-production worldwide.

Given the multiple factors related to DRR and the increase of disaster impacts, advancing our predictive capabilities is critical. Yet, whilst we must accept that knowledge gaps continue to exist and that not all needs for data, tools and methodologies are fulfilled, we *cannot* accept that the knowledge that we already have remains unused in policies and practices that aim at effective disaster risk management and prevention.

This is why we advocate, as a key element for an action agenda for the post-2015 world, the establishment of a mechanism that would enhance closer interaction between the S&T actors and decision-makers in the public domain. In line with the recommendations of the 2013 Global Platform for DRR, and with support from the regional consultative platforms in Africa, Asia and the Americas, we invite all governments and all stakeholders involved in the 3rd World Conference on DRR, to support our call for an international science advisory mechanism that will result in more evidence-based DRR strategies and better-informed DRR investments by governments, donors, and businesses alike. We believe that such a mechanism will make it easier for the S&T communities to understand specific knowledge gaps that address unevenly distributed vulnerabilities. We propose to make use of inclusive, consultative platforms at different levels such as the existing DRR national and regional platforms that would allow all partners to work jointly towards articulating knowledge needs that we can address together in a process of co-design and co-production of knowledge for action. The resulting integrated disaster risk science will produce better scientific assessments of disaster risk at all levels and enable a more meaningful monitoring of progress towards resilience.

The international science advisory mechanism for disaster risk reduction here proposed seeks to enhance the resilience of communities by recognising: (1) the growing and increasingly uneven

incidence of disaster risk that demands special attention for capacity building in SIDS and LDC's without, however, neglecting the exposure of middle and high-income countries; (2) the need for mutual reinforcement of DRR and SDG's in strategies for development cooperation, notably through capacity building and education at all levels; (3) the role of awareness-raising and transparency in the use of evidence with the help of educational, and monitoring efforts and cross-sectoral engagement, as well as, very pragmatically, (4) that best use be made of the existing programmes and instruments that already generate and communicate S&T evidence for DRR.

The S&T community is eager to assist in developing and strengthening science with a view to building resilient societies through curbing disaster losses. We look forward to working closely with you in the next eight months, which will be critical for the success of HFA-2.

Composition of the Major Group Delegation Science and Technology (PrepCom I, Geneva 14-15 July 2014)

Centre for Climate Change and Environmental Study, Abuja, Nigeria

Global Young Academy, Berlin, Germany / Nice, France / Japan

InterAcademy Partnership (IAP), Trieste, Italy

Integrated Research on Disaster Risk (IRDR), Beijing, China

International Council for Science (ICSU), Paris / Regional Office, Pretoria

International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria

International Tunnelling Association

International Union of Geodesy and Geophysics (IUGG), Potsdam, Germany

National Autonomous University of Mexico (UNAM), Mexico City, Mexico

Natural Environment Research Council (NERC), Swindon, United Kingdom

Public Health England, United Kingdom

United Kingdom Collaborative on Development Sciences (UKCDS), London, UK

UNISDR Science and Technical Advisory Group (STAG)

University of the West Indies, Mona, Jamaica

Outcomes of first meeting of the Preparatory Committee for the Third World Conference on disaster risk reduction

14-15 July 2014, Geneva

Key outcomes for Science and Technology

The first Preparatory Committee meeting on the post-2015 Framework for disaster risk reduction took place in Geneva on 14-15 July 2014.This two-day meeting is part of the preparatory process leading up to the Third World Conference on disaster risk reduction that will take place on 14-18 March 2015 in Sendai, Japan, where governments are expected to adopt a successor framework to the current Hyogo Framework. The Hyogo Framework for Action 2005-2015 sought to build the resilience of nations and communities to disasters.

1. The Science and Technology Major Group

The International Council for Science, as organising partner of the Science and Technology Major Group (STMG), put together a delegation comprising of 15 delegates[1] from a range of science organisations including the Integrated Research on Disaster Risk programme (IRDR), International Union of Geodesy and Geophysics (IUGG), UK Collaborative Development Sciences, UNISDR STAG, the International Institute for Applied Systems Analysis (IIASA), the Global Young Academy, the Inter Academy Partnership, and experts from Latin America, Africa and the Asia-Pacific region. A list of the STMG delegation at this meeting is available as an annex to this report.

The STMG participated in a variety of ways to the formal and informal discussions at the meeting, including through one joint plenary statement, three joint statements to the chairs' dialogues, and contributions in technical workshops.

2. Common messages of the Science & Technology Major Group

[1] See news item: http://www.icsu.org/news-centre/news/top-news/un-supports-call-for-an-international-science-advisory-mechanism-on-disaster-risk-reduction

Members of the STMG focused their interventions on the need for an international science advisory mechanism for disaster risk reduction to strengthen resilience based on a statement issued in March 2014 by UKCDS, the Wellcome Trust, UNISDR, ICSU and UNESCO.

Rudiger Klein, Executive Director of Integrated Research on Disaster Risk programme and lead of the STMG at the Prep Com 1 delivered a statement to the plenary on behalf of the Major Group highlighting also the importance of mutual reinforcement of strategies for disaster risk reduction and sustainable development, as well as the critical need for capacity building in Small Island Developing States and Least Developed Countries, without, neglecting the exposure of middle and high income countries.

Three additional statements were delivered on behalf of the STMG. Virginia Murray delivered a statement in the first Chair's dialogue with the Major Groups stressing the many contributions that science has been making towards disaster risk reduction and the need for strengthening and scaling up science in HFA-2, including through an international science advisory mechanism to support evidence-based decision-making and access to scientific information at different scales. In the second Chair's dialogue with Major Groups, Irasema Alcántara-Ayala identified the role that science can play in promoting a holistic and integrated approach to sustainable development, climate change adaptation and mitigation and disaster risk reduction. Alik Ismail-Zadeh emphasised the need for a science-driven approach to monitor, understand, and assess disaster risks at all levels. To this end, he called for an international science advisory mechanism, for strengthening integrated research on disaster risks, and for a periodic scientific assessment of disaster risks.

3. Outcomes of Prep Com 1 related to Science & Technology

Many countries, UN agencies and civil society groups stressed in their statements the importance of Science and Technology. In particular, strengthening education and capacity building, knowledge transfer and data accessibility, and innovation in HFA2 was highlighted, including at national and local levels.

A major outcome of Prep Com 1 is the joint statement by UN agencies, the International Organization for Migration (IOM) and the World Bank supporting explicitly the "establishment of an international science advisory mechanism to strengthen the evidence base for the implementation and monitoring of the new framework". The statement also identifies areas where the science and technology community has an important role to play, including around "Assessing and communicating risk that informs national and local development policies, programming and actions across sectors, and that maximize information available from the development, climate change and disaster risk management communities." See full statement here: http://www.preventionweb.net/files/globalplatform/jointunstatement%5B1%5D.pdf

Besides, many countries and regional groups in their statement[2] referred to Science & Technology. They include: League of Arab States, Austria, Bangladesh, Barbados, Benin, Brazil, Burkina Faso, Cambodia, Caribbean Community, Central Africa, Central American Integration System, China, Colombia, Costa Rica-CELAC, Dominican Republic, Ecuador, Egypt, Ethiopia, EU, Finland, Germany,

[2] Based on Julie Calkins' review of country statements posted on WCDRR's website

International Federation of the Red Cross, India, Indian Ocean Commission, Indonesia, Italy, Japan, Madagascar, Mexico, Morocco, Mozambique, Myanmar-ASEAN, Nauru, Nepal, the Netherlands, New Zealand, Nigeria, OECD, Pakistan, Panama, Philippines, Russia, South Korea, Senegal, Swaziland, Sweden, Switzerland, Thailand, Turkey, USA, West African states.

The **Business and Industry** Major Group (with whom a dedicated dialogue aimed at producing a joint statement was initiated) expressed an interest in collaborating with the STMG around a five-point agenda:

- Developing simple disaster risk metrics easily understood by businesses and policy-makers
- Mainstreaming DRR in business and policy planning, ensuring a systemic approach to DRR and resilient investments
- Ensuring that laws, rules, norms and regulations are in place and conducive to resilient investments
- Sharing data and enhancing risk modelling, through a close collaboration with the Science & Technology community
- Ensuring that HFA-2 provide a transformational and catalytic agenda

The B&I delegation also signalled that they would be able to contribute to all five elements underpinning the notion of an International Science Advisory Mechanism.

In addition the following points of direct relevance to Science & Technology were highlighted during the two days of the meeting:

- The need to ensure that linkages are identified between international agreements on the Post-2015 Development Agenda - the SDGs, the climate change agreement (CCA) and the Post-2015 HFA II framework on DRR – and that they be coherent and mutually reinforcing. This includes linking monitoring of disaster risk with that of climate change, vulnerabilities, etc. Science has an important role to play to elucidate interlinkages, synergies and trade-offs between these areas.
- Risk prevention, risk reduction and disaster preparedness should be given stronger emphasis under HFA2, compared to the earlier period, when attention and resources were concentrated on disaster relief. Many called for increased investments in disaster resilience as the safest path towards recovery.
- Stronger emphasis should be placed in HFA2 on community, national and regional levels
- A lot of knowledge, data and information is produced but remain under-utilised. This calls for addressing the challenge of data availability and access, and for science to become more actionable and effective in providing the evidence-base for decision-making
- More attention should be paid to slow onset, long-term disaster events, such as desertification, ocean acidification, climate change
- Enhancing DRR will require specific contributions and tools for policy-makers to take up scientific evidence
- Targets and indicators are needed to provide a focused agenda for action, as well as a clear accountability framework to review and monitor progress. Indicators should capture national and local context and allow for comparison across countries. An index on risk and

vulnerability was presented; its development involves the European Commission Joint Research Centre.

The co-chairs committed to developing a pre-zero draft for consultation with Major Groups and member states prior to the second meeting of the Preparatory Committee (17-18 November 2014, Geneva). It is available on the Conference website: http://www.wcdrr.org/home

ICSU
International Council for Science

Prep Com 1, Geneva, 14-15 July 2014
Science & Technology delegation

Delegate	Name of organization	Position
Alcántara-Ayala, Irasema	National Autonomous University of Mexico (UNAM)	Professor at the Geography Institute
Calkins, Julie	UK collaborative for development sciences (UKCDS)	Research consultant
Carby, Barbara	University of West Indies	Director DRR Centre
El Kharraz, Jauad	Global Young Academy Arab World Association of Young Scientists	Information Manager
Ismail-Zadeh, Alik	International Union of Geodesy and Geophysics (IUGG)	Secretary-General
Klein, Rudiger, (head of delegation)	Integrated Research on Disaster Risk (IRDR) -ICSU	Director
McGrath, Peter Francis	Inter Academy Partnership	Director
Mechler, Reinhard	International Institute for Applied Systems Analysis	
Mulugeta, Guenene	ICSU-ROA/SAUNET	Coordinator/Project-leader
Murray, Virginia	Public Health England UNISDR Science and Technical Advisory Group (STAG)	Consultant in Global Disaster Risk Reduction Vice chair
Papp, Nora	International Council for Science (OP)	Administrative officer
Rees, John	Natural Environment Research Council	Leader Natural Hazards Theme

Ronan, Kevin	School of Human, Health and Social Sciences Faculty of Sciences, Engineering & Health CQUniversity Australia	Professor of Psychology
Stevance, Anne-Sophie	International Council for Science (OP)	Science officer
Towashiraporn, Peeranan	Asian Disaster Preparedness Center	Director
Young, Denise	International Council for Science (OP)	Communications manager
Zakari, Aminu	Centre For Climate Change & Environmental Study	

Tentative Title:

Disaster Risks Research and Assessment to Promote Risk Reduction and Management

Content

The synthesis paper should be a concise piece of review on integrated disaster risk research and risk assessment, which should provide the policy makers with a clear and unambiguous scientific view on the current state of knowledge in disaster risk, the potential socio-economic impacts of natural hazards, and the ways to reduce significant human and economic losses. It should present the state-of-the-art, successful cases and future perspectives in research and applications.

The paper should be no longer than 20+ pages. The content of the paper is proposed below. Each section of the paper shows the names of the authors (in parentheses); the name in bold is lead author to prepare a draft of the relevant section and to circulate the draft among the authors of the section.

1. Introduction (**Gordon McBean**, Susan Cutter, Alik Ismail-Zadeh) – 1 page
2. Natural Hazards – 5 pages
    - 2.1 Geological hazards (Irasema Alcantara-Ayala, Harsh Gupta, Yujiro Ogawa) – 1.5 page. Each author writes 0.5 page on landslide hazards (Irasema), earthquakes and volcanoes (Harsh), and tsunami (Yujiro)
    - 2.2 Hydro-meteorological hazards including climatological hazards (Kunioshi Takeuchi, Guoxiong Wu) – 2 page. Kuni writes 1 page on hydrological hazards, Guoxiong writes 1 page on hydrological hazards
    - 2.3 Outer space hazards (Daniel Baker, Giovanni Valsecchi) – 1 page. Dan writes 0.5 page on space weather, and Giovanni on near-Earth object hazards.
    - 2.4 Biological hazards – 0.5 page. If we decide to have this sub-section, we can find an expert on biological hazards with assistance of IUBS.
3. Vulnerability and Exposure (**Susan Cutter**, Ailsa Holloway) - 2 pages
4. Extreme Natural Hazards, their Impacts and Disaster Losses (**David Johnston**, Alik Ismail-Zadeh, Rainer Silbereisen) – 2 pages
5. Disaster Risk Knowledge and Management: Experience with the disasters of the XXI century – 5 pages
    - 5.1 Africa experience (Ailsa Holloway) 1 page
    - 5.2 Asian and Pacific region experience (**Harsh Gupta**, Emma Porio) 1 page
    - 5.3 European experience (**Rainer Silbereisen,** Orhan Altan, Alik Ismail-Zadeh) 1 page
    - 5.4 Latin American and Caribbean experience (**Irasema Alcantara-Ayala**, Salvano Briceno) 1 page
    - 5.5 North American experience (**Susan Cutter**, Daniel Baker) – 1 page
6. Future Extreme Events, Disaster Risks, Impact and Losses – 5 pages
    - 6.1 Africa experience (Ailsa Holloway) – 1 page
    - 6.2 Asian and Pacific region experience(**Emma Porio**, Harsh Gupta) – 1 page
    - 6.3 European experience (**Orhan Altan,** Rainer Silbereisen, Alik Ismail-Zadeh) - 1 page
    - 6.4 Latin American and Caribbean experience (**Salvano Briceno**, Irasema Alcantara-Ayala) -1 page

6.5 North American experience (**Daniel Baker**, Susan Cutter) - 1 page

7. Science-driven Disaster Risk Reduction. Implications for Sustainable Development (**Alik Ismail-Zadeh**, Gordon McBean, Rudiger Klein) - 2 pages

The text should be supported by references and/or 1-2 figures (please try to use your own figures to avoid CR issues).

Participation

Here the authors (in an alphabetic order) are listed together with the sections/sub-sections they are proposed to write (numbers indicate sections, LA – lead author, A – author).

Irasema Alcantara-Ayala – 2.1 (A), 5.4 (LA), 6.4 (A)

Orhan Altan – 5.3 (A), 6.3 (LA)

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Salvano Briceno – 5.4 (A),6.4 (LA)

Susan Cutter – 1 (A), 3 (LA), 5.5 (LA), 6.5 (A)

Harsh Gupta – 2.1 (A), 5.2 (LA), 6.3 (A)

Ailsa Holloway – 3 (A), 5.1 (A), 6.1 (A)

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Kuni Takeuchi – 2.2 (A)

Giovanni Valsecchi – 2.3 (A)

Guoxiong Wu – 2.2 (A)

Timelines for writing a zero-draft paper

1. Introduction
   Gordon McBean – due 5 October
   Susan Cutter and Alik Ismail-Zadeh – comments/revisions due 12 October
   Zero-draft by 15 October
2. Natural Hazards
   2.1 Geological hazards
   Irasema Alcantara-Ayala – due 5 October
   Harsh Gupta – due 5 October
   Yujiro Ogawa – due 5 October
   Discussion by the authors to merge into coherent piece – due 12 October
   Zero draft by 15 October

   2.2 Hydro-meteorological hazards including climatological hazards
   Kunioshi Takeuchi – due 5 October
   Guoxiong Wu – due 5 October
   Discussion by the authors to merge into coherent piece – due 12 October
   Zero draft by 15 October

   2.3 Outer space hazards (Daniel Baker, Giovanni Valsecchi)
   Daniel Baker – due 5 October
   Giovanni Valsecchi – due 5 October
   Discussion by the authors to merge into coherent piece – due 12 October
   Zero draft by 15 October

3. Vulnerability and Exposure
   Susan Cutter – due 5 October
   Ailsa Holloway – comments/revisions due 12 October
   Zero draft by 15 October

4. Extreme Natural Hazards, their Impacts and Disaster Losses
   David Johnston – due 5 October
   Alik Ismail-Zadeh and Rainer Silbereisen – comments/revisions due 12 October
   Zero draft by 15 October

5. Disaster Risk Knowledge and Management: Experience with the disasters of the XXI century
   5.1 Africa experience
   Ailsa Holloway – zero draft by 15 October
   5.2 Asian and Pacific region experience
   Harsh Gupta – due 5 October
   Emma Porio – comments/revisions due 12 October
   Zero draft by 15 October
   5.3 European experience
   Rainer Silbereisen – due 5 October

Orhan Altan and Alik Ismail-Zadeh – comments/revisions due 12 October
Zero draft by 15 October

5.4 Latin American and Caribbean experience
Irasema Alcantara-Ayala – due 5 October
Salvano Briceno – comments/revisions due 12 October
Zero draft by 15 October

5.5 North American experience – 1 page
Susan Cutter – due 5 October
Daniel Baker – comments/revisions due 12 October
Zero draft by 15 October

6. Future Extreme Events, Disaster Risks, Impact and Losses
   6.1 Africa experience
   Ailsa Holloway – zero draft by 15 October
   6.2 Asian and Pacific region experience
   Emma Porio – due 5 October
   Harsh Gupta – comments/revisions due 12 October
   Zero draft by 15 October
   6.3 European experience
   Orhan Altan – due 5 October
   Rainer Silbereisen and Alik Ismail-Zadeh – comments/revisions due 12 October
   Zero draft by 15 October
   6.4 Latin American and Caribbean experience
   Salvano Briceno – due 5 October
   Irasema Alcantara-Ayala – comments/revisions due 12 October
   Zero draft by 15 October
   6.5 North American experience
   Daniel Baker – due 5 October
   Susan Cutter – comments/revisions due 12 October
   Zero draft by 15 October
7. Science-driven Disaster Risk Reduction. Implications for Sustainable Development
   Alik Ismail-Zadeh – due 5 October
   Gordon McBean and Rudiger Klein – comments/revisions due 12 October
   Zero draft by 15 October

PLEASE send zero draft to Alik Ismail-Zadeh who will compile the final zero-draft paper and circulate to the group on 20 October 2014.

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Explanation Note

1. The present document is the pre-zero draft of the post-2015 framework for disaster risk reduction. It will serve as the basis for the open-ended informal consultative meetings which the Co-chairs of the Bureau of the Preparatory Committee for the Third United Nations World Conference on Disaster Risk Reduction, mandated by the first Preparatory Committee meeting held in Geneva on 14-15 July 2014, will carry out in September and October 2014. Based on such consultative meetings, the Co-Chairs by mid-October will prepare a Zero-Draft for the second Preparatory Committee meeting, scheduled in Geneva, Switzerland, on 17-18 November 2014.

2. The UN General Assembly Resolution A/RES/68/211 decided that the World Conference will result in a concise, focused, forward-looking and action-oriented outcome document.

3. The pre-zero took into consideration sources such as: the International Framework of Action for the International Decade for Natural Disaster Reduction (IDNDR) of 1989; the "Yokohama Strategy for a Safer World" of 1994; the International Strategy for Disaster Reduction of 1999; the Hyogo Framework for Action of 2005; the HFA Mid-Term Review; relevant General Assembly resolutions; the deliberations of the fourth session of the Global Platform for Disaster Risk Reduction of 2013; the compilation report on consultations on the post-2015 framework for disaster risk reduction (A/CONF.224/PC(I)/5); the suggested elements for the post-2015 framework for disaster risk reduction (A/CONF.224/PC(I)/6); the outcomes of the 2014 regional platforms for disaster reduction of Africa, Americas, Asia, Pacific, and the European ministerial meeting on disaster risk reduction (A/CONF.224/PC(I)/7, 8, 9, 11, 12); the statements of States and major groups at the first session of the Preparatory Committee for the Third United Nations World Conference on Disaster Risk Reduction; the proposal of the Open Working Group for Sustainable Development Goals; and the 2009 UNISDR Terminology on Disaster Risk Reduction.

Contents

Provisional name

[Post-2015 framework for disaster risk reduction]

A. Preamble

1. The Hyogo Framework for Action (HFA) has provided critical guidance to reduce disaster risk and strengthen cooperation across stakeholders at local, national, regional and global levels. However, its implementation has also highlighted gaps in the formulation of goals and priorities for actions, in particular priority 4, and in the role recognized to stakeholders. Priorities 1,2,3 and 5, overlapping in some parts, were more directly actionable and specific than priority 4. This has brought to the fore the need, through a post-2015 framework for disaster risk reduction, to update and reorder the strategic goals and priorities, give the respective visibility to all levels, and to place emphasis on stakeholders and their role in advancing the priorities.

2. In particular, since the adoption of the HFA, and as reported in the HFA Monitor and in the consultations on the post-2015 framework for disaster risk reduction, countries in all regions have made gradual progress in strengthening their institutional, legislative and policy frameworks, in particular in early warning, and disaster preparedness for response. This has contributed to decreasing mortality risk, especially in the case of floods and tropical storms. There has also been significant progress in risk assessment, education, research and public awareness. Countries report increasing their investments in risk reduction, as well as developing risk-transfer mechanisms, such as insurance, index-based insurance for crop losses and hurricanes, marked disaster bonds, and family and community insurance schemes. The HFA has also inspired the identification and systemization of legal principles and rules informing disaster risk management, as exemplified by the United Nations International Law Commission's first reading draft on the protection of persons in the event of disasters. Overall, the HFA has been an important instrument in raising public and institutional awareness, and political will, and focusing and catalyzing actions by a wide range of stakeholders at local, national, regional, and global levels.

3. At the same time, however, around 300 biennial reports of countries on the HFA implementation indicate that exposure of people and assets in all countries has increased faster than vulnerability has decreased, thus generating new risk and a steady increase in disasters losses, with significant socio-economic impact in the short, medium and long terms, especially at the local and community level. There are risk factors which have not received sufficient attention and indeed constitute underlying risk drivers. Factors such as unequal economic development, poorly managed urban development and ecosystems, poverty and inequality, weak participatory governance, weak enforcement, insufficient local capacities, inadequate and inappropriate policies and resources, conflicts, and climate change and variability compound disaster risk and hence the levels of disaster loss. Moreover, these risk drivers condition the resilience of households, communities, businesses and the public sector and thus influence whether disaster loss generates a wider range of short and long-term social, political and economic impacts. Furthermore, as a consequence of disaster risk, all governments, and especially developing countries, are faced with increasing levels of hidden

potential costs and challenges to meet financial and other obligations. Disaster risk may also affect people, communities and countries' safety and security.

4. Trends, such as the increasing interconnectedness and interdependence of globalization, a world heavily-reliant on technology, patterns of consumptions and production, a changing climate, land degradation and desertification, all contribute to modify the nature and characteristics of, and amplify disaster risk. Such trends require that the actions and programs initiated under the HFA continue with perseverance and determination. The momentum generated by the HFA needs to be reinforced further by the post-2015 framework for disaster risk reduction with a much stronger focus on anticipating long-term risk scenarios and concrete measures to prevent the creation of new risk, reduce the existing risk and strengthen economic and social resilience of countries and people, by addressing both people and assets' exposure and vulnerability.

5. The consultations on the post-2015 framework for disaster risk reduction have provided clear guidance on the following:

- Investing in addressing underlying risk factors and strengthening development investments is more cost-effective than is primary reliance on post-disaster response and recovery.
- The stated commitment of the political leadership at every level in every country to manage disaster risk is a crucially important driving force for success and to strengthen cooperation.
- Disaster risk management policies and plans should be tailored to and take into account the political and administrative structure of the state.
- There is consensus across countries and stakeholders that the post-2015 frameworks for disaster risk reduction, sustainable development and climate change, while different in nature, be coherent, mutually reinforcing and pragmatic in their policy guidance and implementation mechanisms; building on the Cancun Adaptation Framework, adequate references, for implementation purposes, to the post-2015 framework for disaster risk reduction in future sustainable development and climate change instruments would be a pragmatic way forward and enable the post-2015 framework for disaster risk reduction to contribute to the sustainability of development.
- Countries are encouraged to improve governance and its articulation in institutions' powers and design, sector-specific strategies and plans, citizens' participation in decision-making and action on questions critical for the future, enabling conditions for partnerships and readiness of stakeholders to participate.
- It is necessary that all stakeholders be recognized and take on roles and responsibilities in order to play their part in close partnerships in the common endeavor, as States' institutions alone cannot tackle the challenges to manage disaster risk;
- Leadership, capacities, and resources for disaster risk reduction of local communities and authorities are essential, together with partnerships between local authorities, communities, civil society and business in the planning and implementation of local level disaster risk management;
- Small-scale disasters constitute a significantly high percentage of losses in all countries, and require full attention.

- Poverty is a main disaster risk driver, and development policies focused on reducing it do contribute to reducing disaster risk and loss and strengthen resilience of the poor and most vulnerable.
- Risk-informed investments and strengthened financial instruments are required at national and international levels.
- The mainstreaming and integration of disaster risk assessment in development cooperation programs of bilateral and multilateral nature should be promoted.
- Special attention should be given to developing countries, in particular small island developing States, landlocked developing countries, and least developed countries, and Africa. In particular, sharing of information, knowledge, technology and experience are necessary, and existing mechanisms, practices, tools should be strengthened further.
- International cooperation, through predictable, sustainable and adequate means of implementation in finance, technology transfer, technical cooperation and capacity building, is critical for all countries, in particular for developing countries.

6. This framework builds on the HFA by retaining the HFA expected outcome and integrating and strengthening the focus of the priorities for action, and giving more prominence to addressing the underlying risk factors and resilience through new strategic goals which replaces the HFA goals.

B. Purpose, Scope, Outcome and Goals

7. The purpose of the present framework is to manage disaster and climate risk in development at local, national, regional and global levels for resilience of people, communities and countries.

8. The present framework applies to the risk of small and large-scale, frequent and infrequent, disasters caused by natural hazards and related environmental and technological hazards and risks.

9. In keeping with the HFA expected outcome, the present framework aims to achieve the substantial reduction of disaster losses, in lives and in the social, economic and environmental assets of communities and countries.

10. To support the assessment of global progress in achieving the expected outcome, five global targets are identified: reduce disaster mortality by [a given percentage in function of number of hazardous events] by 20[xx], reduce the number of affected people by [a given percentage in function of number of hazardous events] by 20[xx]; reduce disaster economic loss by [a given percentage in function of number of hazardous events] by 20[xx], and reduce disaster damage to health and educational facilities by [a given percentage in function of number of hazardous events] by 20[xx], increase number of countries with national and local strategies by [a given percentage] by 20[xx].

11. To attain the expected outcome, the following three strategic and mutually-reinforcing goals are pursued:

I. The prevention of disaster risk creation which requires the adoption of risk-informed growth and development measures that aim to address increase in exposure and vulnerability.

II. The reduction of existing disaster risk which requires measures that address and reduce exposure and vulnerability, including preparedness for disaster response.

III. The strengthening of persons, communities and countries' disaster resilience which requires social, economic and environmental measures that enable persons, communities and countries to absorb loss, minimize impact and recover.

C. Guiding principles

12. The principles contained in the Yokohama Strategy and the HFA general considerations retain their full relevance and are complemented as follows to guide implementation.

a) Each State has the primary responsibility to holistically manage disaster risk, including through cooperation.

b) Managing the risk of disasters should also be aimed at protecting persons, their livelihoods and property, while respecting their human rights.

c) Disaster risk management is an essential component of governance at local, national, regional and global levels, and requires the full engagement of all state institutions of executive and legislative nature at local and central levels.

d) Disaster risk management requires an all-of-society engagement and empowerment, equality, and an inclusive and non-discriminatory participation . Gender considerations are to inform all policies and practices, and women's leadership is to be promoted. Children and youth, persons with disabilities and indigenous peoples are to be fully engaged in the determination and implementation of policies.

e) While the causes and consequences of risk may be national, transboundary or global in scope, disaster risks have local and specific characteristics and their management requires the full leadership and empowerment of local communities and administrators.

f) A clear recognition, articulation and alignment of responsibilities across public and private stakeholders, including volunteers, are essential to ensure implementation and accountability in disaster risk management.

g) Building on and leveraging the potentials, as well as taking into account the needs, of all groups of society, especially the poor and vulnerable, are a requisite for effective disaster risk management policies and practices.

h) Transparency in, and the disclosure of, disaster risk information in public and private transactions and investments are essential, together with accountability for risk creation.

i) Sound disaster risk management is based on risk-informed decision-making, which requires freely available, publicly accessible, simple and easy-to-understand, science-based, non-sensitive risk information, including on disaster losses, socio-economic impact, hazards' characteristics, and people and assets' exposure and vulnerability, at every level. Relevant, local, traditional and indigenous knowledge, culture and practices are to be taken into account.

j) Countries and communities' risk profiles need to be fully understood and differential capacities duly taken into account in the planning and implementation of disaster risk management.

k) The sustainability of development depends on the ability to manage disaster risk. Public and private investments are to be disaster-risk informed.

l) The post-disaster recovery and reconstruction phase is a critical opportunity to prevent the creation of new risk, reduce existing risk, and strengthen resilience.

m) An effective and meaningful global partnership and international cooperation are essential to allow for effective disaster risk management. Specific attention needs to be given to developing countries, in particular least developed countries, small island developing States, and landlocked developing countries, and Africa. Predictable and sustainable means of implementation including access to resource and technology are crucial in this regard and need time-bound commitments.

n) The United Nations system, through the UN Plan of Action on Disaster Risk Reduction for Resilience, and other relevant International Organizations need to work together with a view to avoid duplication and ensure optimum use of resources in support to countries and benefit of the most vulnerable.

D. Priorities for action

13. In pursuing the three strategic goals, and drawing from the knowledge and experience matured in the implementation of the HFA and the previous instruments, there is a need for focused, specific, yet mutually supportive actions in the local, national, regional and global contexts, in key priority areas, namely understanding disaster risk; strengthening governance

to manage disaster risk; preparedness for response, recovery and reconstruction; and investing in social, economic, and environmental resilience.

I. National and local context

Understanding disaster risk

14. National and local policies and practices for disaster risk management should be based on a clear understanding of risk in all its dimensions of vulnerability and exposure of persons and assets and hazards characteristics, particularly at the local level. Actions should include:

a) Systematically survey, record and publicly account for all disaster loss and economic and social impact, taking into account gender-specific and sex/age/disability-disaggregated data.

b) Periodically assess disaster risks, namely persons and economic and fiscal assets' exposure and vulnerability as well as hazards' characteristics.

c) Promote free and open availability of and access to risk, disasters and loss information, and their dissemination, at all levels, taking into account the needs of different categories of users.

d) Enhance the collection, exchange and dissemination of risk and disaster information through inclusive coordination arrangements, such as national and local platforms and community centers, and promote the engagement of the private sector for resilient investments.

e) Build the capacity of local government officials and stakeholders, especially throughtraining and learning programmes in disaster risk reduction targeted at specific sectors in order to ensure consistent implementation of disaster risk related policies and plans.

f) Strengthen networks among disaster experts, managers and planners across sectors and between regions, and create or strengthen procedures for using available expertise when agencies and other important actors develop local risk reduction plans.

g) Promote community-based training initiatives, considering the role of volunteers, as appropriate, to enhance local capacities to mitigate and cope with disasters.

h) Promote and improve dialogue and cooperation among scientific communities, including social and economic sciences, and practitioners working on disaster risk management.

i) Strengthen the technical and scientific capacity to develop and apply methodologies, studies and models to assess vulnerabilities to and the impact of geological, weather, water and climate-related hazards, including the improvement of regional monitoring capacities and assessments.

j) Promote the incorporation of disaster risk education, including preparedness, in educational curricula at all levels as well as in informal education systems.

k) Promote public education and awareness through campaigns, social media, community mobilization and other available means.

Strengthening Governance to Manage Disaster Risk

15. Governance and its structuring is of paramount importance and conditions the effective and efficient management of disaster risk. Within countries' capacities, the strengthening of governance for disaster risk management may prioritize:

a) Adoption and implementation of specific national and local plans, with clear targets, indicators and timeframes, aimed at preventing the creation of risk, the reduction of existing risk, and the strengthening of economic resilience.

b) Availability of mechanisms to monitor, periodically assess and publicly report on progress.

c) Promotion of public and institutional debates and scrutiny, including by parliamentarians and other elected officials, on progress reports of local and national plans.

d) Develop specific mechanisms to engage the active participation and ownership of relevant stakeholders, including communities, in disaster risk management, in particular building on the recognition that persons, communities and countries need to protect their assets and development gains, as well as leveraging the spirit of volunteerism.

e) Establishment or further strengthening of all-stakeholders coordination mechanisms at national and local levels, such as national and local platforms for disaster risk reduction. Such mechanisms should have a strong foundation in the institutional set up, including through laws, regulations, standards procedures, with clearly assigned responsibilities and delegated authority for the determination and implementation of, and reporting on, national and local disaster risk management plans.

f) Empower through regulatory and financial means local action and leadership in disaster risk management by local authorities, communities, and indigenous people.

g) Promote the coherence of, and further develop as appropriate, national and local frameworks of laws, regulations and public policies that, through defining roles and responsibilities:
   - Guide the public sector in addressing disaster risk in publically owned, managed or regulated services and infrastructure, and in the environment;
   - Regulate and provide incentives for actions by households, individuals, communities, and businesses, particularly at the local level.

h) Promote the integration of disaster risk management into development policies and planning at all levels of government, including in poverty reduction strategies and sectors and multi sector policies and plans.

i) Stimulate the development, together with the private sector and professional associations and scientific organizations, of disaster risk management quality standards and mechanisms for compliance, including certification, in specific sectors.

Preparedness for Response, Recovery and Reconstruction – "Build Back Better"

16. There is a call to further strengthen early warning and preparedness systems, motivated by the increase in disaster events as well as evidence that such systems contribute to saving lives and increasing efficiency of preparedness and response. With the increase in magnitude of disaster impacts, not least in highly urbanized settings, and of disasters affecting large numbers of people and high-value national and local infrastructures and economic assets, the cost and complexity of reconstruction is rising. Actions should include:

a) Preparing or reviewing and periodically updating disaster preparedness and contingency plans and policies at all levels, with a particular focus on ensuring in the design and planning the participation of all social groups, including the most vulnerable.

b) Continuing to further strengthen early warning systems and tailoring them to users' needs, including social and cultural requirements.

c) Promoting regular disaster preparedness exercises, including evacuation drills, with a view to ensuring rapid and effective disaster response and access to essential food and non-food relief supplies, as appropriate, to local needs.

d) Adopting specific public policies, and establishing coordination and funding mechanisms and procedures to plan and prepare for post-disaster recovery, rehabilitation, reconstruction and displacement in order to mitigate and minimize losses.

e) Engaging diverse institutions, multiple authorities and stakeholders at all levels, in view of the complex and costly nature of post-disaster reconstruction. Learning from

the reconstruction programs over the HFA decade and exchange of experience is critical to provide guidance for a preparedness for reconstruction in the future.

f) Promoting the incorporation of disaster risk management into post-disaster recovery and rehabilitation processes and use opportunities during the recovery phase to develop capacities that reduce disaster risk in the medium-term, including through the sharing of expertise, knowledge and lessons learned.

Investing in Social, Economic and Environmental Resilience

17. Social, economic and environmental investments are essential to strengthen the resilience of persons, communities, countries and their assets. A continued focus on key development areas, such as health, education, food security, water, ecosystem management, housing, cultural heritage, public awareness, innovative financial and risk transfer mechanisms, especially for local governments, households, and the poor and vulnerable is required. In particular, the following may be prioritized:

a) Strengthen the implementation of social safety-net mechanisms to assist the poor and particularly exposed groups, such as older persons and persons with disabilities, and other populations exposed to disaster risk and affected by disasters.

b) Enhance recovery schemes including psycho-social training programmes in order to mitigate the psychological damage of vulnerable populations, particularly children, in the aftermath of disasters.

c) Protect and strengthen critical public facilities and physical infrastructure, particularly schools, clinics, hospitals, water and power plants, communications and transport lifelines, disaster warning and management centres, and culturally important lands and structures through proper design, retrofitting and re-building, in order to render them adequately resilient to hazards.

d) Endeavor to ensure, as appropriate, that programmes for displaced persons do not increase risk and vulnerability to hazards.

e) Allocate resources at all level of the administration for the development and the implementation of disaster risk management policies, plans, laws and regulations in all relevant sectors.

f) Review existing financial and fiscal instruments in order to integrate climate and disaster risk funding and support risk-sensitive public and private investments.

g) Strengthening policy, technical and institutional capacities in local and national disaster risk management, including those related to technology, training, and human and material resources.

h) Promote the integration of disaster risk management measures in economic valuations, cost-benefit analyses, competitiveness strategies and investment decisions, including in debt ratings, risk analysis and growth forecasts, as well as the determination of incentives, investment scale and timeliness of disbursement, and the spreading of costs over time.

i) Land-use policy development and implementation, including urban planning, informal and non-permanent housing, should be given special attention due to their direct impact on risk exposure.

j) Promote the incorporation of disaster risk assessment into rural development planning and management, in particular with regard to mountain and coastal flood plain areas, including through the identification of land zones that are available and safe for human settlement,

k) Strengthen the sustainable use and management of ecosystems.

l) Implement integrated environmental and natural resource management approaches that incorporate disaster risk reduction.

m) Encourage the revision of existing or the development of new building codes, standards, rehabilitation and reconstruction practices at the national or local levels, as appropriate, with the aim of making them more applicable in the local context, particularly in informal and marginal human settlements, and reinforce the capacity to implement, monitor and enforce such codes, through a consensus-based approach, with a view to fostering disaster-resistant structures.

II. Global and regional context

Understanding Disaster Risk

18. The understanding of disaster risk drivers and trends, and the evolution of future risk scenarios, requires an all-states and all-stakeholders effort on a number of areas for action, such as information collection, analysis and dissemination, advancement of research and development of understanding-risk services, as well as continuous monitoring and exchange of practices and learning. In that connection:

a) Common methodologies for risk assessment, monitoring, disaster recording and statistics, and sharing of information should remain a priority, together with the necessary support for data gathering and risk modelling for planning purposes.

b) Global campaigns, such as "The One Million Safe Schools and Hospitals", "Making cities resilient: my city is getting ready", and the "UN Sasakawa Award for Disaster Reduction" as well as the yearly UN International Day for Disaster Reduction, are important means to promote a culture of prevention, generating understanding of

disaster risk, support mutual learning and sharing of experience. All public and private stakeholders are encouraged to actively engage and join such initiatives, and develop new ones at local, national, regional and global levels, with similar purposes.

c) It is critical to continue promoting the use, application and affordability of information, communication and space-based technologies and related services, as well as earth observations, to support disaster risk reduction.

d) The Scientific and Technical Committee, established by the General Assembly in its resolution 44/236 of 22 December 1989, should be revitalized as an international science advisory mechanism, built on networks of national and regional institutions, in order to strengthen the evidence base in support of the implementation and monitoring of this framework; promote scientific research into risk patterns and trends and the causes and effects of disaster risk in society; to promote and support the availability and application of science to decision-making; and to use post-disaster reviews as opportunities to learn and enhance public policy.

Strengthening governance to manage disaster risk

19. The inclusive and participatory international cooperation frameworks for disaster risk management developed over the past ten years at regional and global levels have demonstrated that effectiveness in mobilizing stakeholders and contributing to a more coherent approach by international organizations in supporting countries to manage disaster risk may need to be further strengthened. In that regard:

a) Agreed regional and sub-regional strategies for disaster risk reduction should continue to guide action at regional level, including focusing funding of bilateral and multilateral cooperation initiatives.

b) Collaboration should be ensured across mechanisms and institutions for the implementation of instruments relevant to disaster risk, such as for climate change, sustainable development, and others as appropriate.

c) The Global Platform for Disaster Risk Reduction and the regional and sub-regional platforms for disaster risk reduction should remain important multi-stakeholder mechanisms to forge partnerships, periodically assess progress on implementation and share practice and knowledge on risk-informed policies, programmes and investments, including on development and climate issues.

d) Voluntary and self-initiated peer reviews among countries and cities should be given due consideration, as they may represent a very useful mechanism to support national efforts, reviews of progress, mutual learning, exchange of best practices and identification of specific areas for future technical cooperation, exchange of information, technology transfer and financial support, as relevant.

e) Monitoring is essential to assess progress and adopt the necessary corrective measures. International monitoring mechanisms, such as the HFA Monitor, are intended to support and complement national and local monitoring systems, and provide useful understanding on overall regional and global efforts to manage disaster risk. Such information may be of relevance in the consideration of progress on the sustainable development agenda and goals, and on climate change. The current HFA Monitor will be enhanced in order to more effectively measure progress, including in terms of outcome and output indicators, and to ensure coherence between the global HFA Monitor and the regional HFA Monitor processes and outcome reports, as well as support and contribute to the monitoring of progress of the sustainable development agenda and goals, as relevant.

Preparedness for response, recovery and reconstruction

20. The continued strengthening of cooperation at regional and global level on preparedness for response, recovery and reconstruction is critical and may require the following additional measures:

a) Strengthen and when necessary develop coordinated regional approaches, and create regional policies, operational mechanisms, plans and communication systems to prepare for and ensure rapid and effective disaster response in situations that exceed national coping capacities.

b) Promote the further development of standards and other guidance instruments to support preparedness and response, and contribute to the lessons learned for policy practice and reconstruction programmes.

c) Promote the development of predictable cooperation and coordination mechanisms for preparedness and response, which may include usage of business facilities and services and military assets as relevant and appropriate.

d) Promote the further development of regional early warning mechanisms to ensure that information is acted on across all relevant countries.

e) The experience of International Recovery Platform indicates that international mechanisms for the sharing of experience and learning among countries and all stakeholders, as well as the development of guidance, may need to be enhanced.

Investing in social, economic, and environmental resilience

21. Investments are needed to strengthen the capacity to record, analyze, summarize, disseminate, and exchange statistical information and data on hazards mapping, disaster risks, impacts, and losses. In that connection:

a) Access to and transfer of environmentally sound technology, science and innovation as well as knowledge and information sharing should be enhanced further through existing mechanisms, including the United Nations, and other relevant bodies, in order to support countries to manage disaster risk.

b) Disaster risk reduction measures should be mainstreamed appropriately into multilateral and bilateral development assistance programmes including those related to poverty reduction, natural resource management, urban development and adaptation to climate change.

c) Innovative opportunities should be promoted and explored for public-private partnerships and North–South, South–South, and triangular cooperation, in particular at regional level, in order to support countries' efforts to manage disaster risk.

III. Role of Stakeholders

22. The implementation of the measures at local, national, regional and global levels will require the full commitment, goodwill, knowledge, experience and resources of all stakeholders, as relevant. Effective and meaningful local, national, regional and global partnerships to manage disaster risk can greatly contribute to the further evolution of strong and predictable system for cooperation.

23. While States, building on existing relevant international instruments, may determine more specific role and responsibilities for all public and private stakeholders in accordance with national plans and priorities, some indications may include:

- Business, professional associations, private sector financial institutions and philanthropic foundations are encouraged to: actively engage with the public sector for the determination of laws, policies and plans to manage disaster risk; base investment decisions on risk considerations; integrate disaster risk management in business models and practices; develop quality standards for disaster risk management; give special attention to strengthen disaster risk management in small and medium enterprises; engage in and support research and innovation in disaster risk management; share knowledge and practices; invest in prevention and strengthen disaster risk management practices through supply chains; and advocate for disaster risk management with customers.

- Academia and research are encouraged to: focus on the evolving nature of risk and scenarios in the medium and long terms; increase research for local application and support to local communities and authorities' action; and support the interface policy-science for effective decision making.

- Media are encouraged to: take an active role at local, national, regional and global levels to contribute to raising public awareness and understanding and to disseminate risk, hazards and disaster information, including that relating to small-scale disasters,

in a simple, easy to understand and accessible manner, in close cooperation with science and academia; and stimulate a culture of prevention and strong community involvement in sustained public education campaigns and public consultations at all levels of society.

- Financial, investments, and trade institutions are encouraged to review and revise financial and trade regulations on the basis of disaster risk management considerations and disaster risk information.

- Social groups, volunteers, and civil society and faith-based organizations, are encouraged to engage with public institutions and business to, *inter alia*: provide specific knowledge and pragmatic guidance in the context of the development and implementation of normative frameworks, standards and plans for disaster risk reduction; engage in the implementation of local, national, regional and global plans and strategies, and their monitoring; contribute to and support public awareness and education on disaster risk; and advocate for an inclusive and all-of-society disaster risk management which strengthen the synergies across groups. Moreover, in particular:

    - Children and youth should be recognized for their contribution through their perspectives, knowledge, skills and needs to ensure that disaster risk plans designing, resourcing and implementation are tailored accordingly, and should be given the space and modalities to contribute.

    - Women should be recognized as critical to increase and add the availability of capacity to manage disaster risk, and to design, resource and implement gender-responsive disaster risk management.

    - Persons with disabilities should be recognized as critical in the assessment of risk and design and implementation of plans tailored to specific requirements, and in increasing the awareness and education for an accessible disaster risk management for all.

24. With reference to the UN General Assembly resolution A/RES/68/211 of 20 December 2013, the commitments are instrumental to identify modalities of cooperation and implement this framework. Commitments need to be specific, predictable and time-bound in order to support the development of partnerships at local, national, regional and global levels, and the implementation of local and national disaster risk management plans.

25. All stakeholders are encouraged to publicize their commitments in support of the implementation of this framework or of the national and local disaster risk management plans through the UNISDR website.

E. International partnership in the implementation and follow-up process

26. While it is a primary responsibility of States to manage disaster risk, there is a strong expectation on the further strengthening of international cooperation and the forging of an international partnership for disaster risk reduction. Managing disaster risk requires an all-states and all-stakeholder effort, given the complexity of the task at hand and the relevance for humanity as a whole. In this connection:

a) Developing countries, in particular least developed countries, small island developing States, and landlocked developing countries, and Africa remain most vulnerable to disasters and the impact of climate change and thus require adequate international assistance, through bilateral and multilateral channels, for the development and strengthening of their capacities in the areas of disaster prevention and building resilience, including through financial and technical assistance, and technology transfer on mutually agreed terms.

b) International cooperation efforts should continue giving priority to strengthening countries' capacity and modalities to manage transboundary disaster risk, including potential disaster-related displacement, through the further development of early-warning systems and sharing of knowledge, and the availability of climate services and other relevant earth observation systems.

c) Intergovernmental organizations of global and regional nature, including international financial institutions, such as the World Bank Group, the International Monetary Fund, and the Regional Development Banks, and the United Nations system's entities, including funds, programs, and specialized agencies, through its United Nations Plan of Action on Disaster Risk Reduction for Resilience, as well as the Red Cross and the Red Crescent Movement should be called upon to support countries and other stakeholders in the implementation of this framework, including the development of relevant sector policies and standards, monitoring mechanisms and the strengthening of capacities, through clear and focused programs that support in a balanced and sustainable manner countries' priorities.

d) Adequate voluntary financial contributions should be provided to the United Nations Trust Fund for Disaster Reduction, in the effort to ensure adequate support for the follow-up activities to this framework. The current usage and feasibility for the expansion of this fund, should be reviewed, inter alia, to assist disaster-prone developing countries to set up national strategies for disaster risk reduction.

e) The Inter-Parliamentary Union (IPU) and other relevant regional bodies and mechanisms for parliamentarians, are encouraged to support the implementation of the deliberations adopted thus far and advocate for disaster risk management.

f) The United Cities and Local Governments (UCLG) and other relevant bodies of local governments are encouraged to carry forward the implementation of the deliberations

adopted thus far, and support cooperation and mutual learning among local governments.

g) The UNISDR in particular is requested to support the implementation, monitoring and review of this framework through: preparing periodic reports on progress in the implementation; generating evidence-based guidance; supporting countries, including through the national platforms or their equivalent, in monitoring trends and patterns in disaster risk, disaster loss and impacts; convening the Global Platform for Disaster Risk Reduction and supporting the organization of regional platforms for disaster risk reduction; and reinforcing a culture of prevention through advocacy initiatives and dissemination of risk information, policies and practices.

h) International regional institutions and organizations should be encouraged to enhance cooperation and mutual reinforcement in policies, strategies, instruments and programs for the coherent implementation of this framework, the post-2015 sustainable development agenda and goals, and the climate change agreement, especially in support of developing countries.

i) This framework is open-ended and will be periodically reviewed by the United Nations General Assembly and the ECOSOC every [X] years, through existing review processes, to allow for stocktaking, formulating recommendations for further action, and introducing possible corrective measures.

j) Periodic report on progress will be provided by UNISDR for the considerations, and to support the deliberations, of the High Level Political Forum for Sustainable Development at its sessions under the auspices of the ECOSOC and General Assembly.

F. Transition phase

27. The activities suggested under the HFA priorities remain relevant and for further implementation in order to maintain the positive momentum and because significant systemic change and impact requires the persistence and perseverance of all stakeholders.

28. UNISDR will continue to lead technical consultations with countries and experts from international organizations, including the United Nations system, and other stakeholders to complete the ongoing work to review and strengthen the current HFA Monitor, including its indicators, while ensuring continuity with, and use of, data collected thus far. In particular, focus will be on its system of indicators, periodicity and modalities of reporting, and the synergy between the global, regional and national monitoring and reporting, as well as its potential synergies with other relevant monitoring and reporting systems, including for the sustainable development agenda and goals and climate change. It will also lead technical consultations in order to update the 2009 Terminology on Disaster Risk Reduction; lead the revision of the United Nations Plan of Action on Disaster Risk Reduction for Resilience; and

facilitate the revitalization and transformation of, and providing support to, the Scientific and Technical Committee.

29. Existing regional strategies, plans and programs may be adjusted, taking into account this framework.

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General Comment	• The draft document is sound and comprehensive, and **acknowledges the importance of science and evidence-based risk information for HFA-2** in order to drive disaster risk reduction activities as well as to provide a base of support for the proposed monitoring system. Given that many member states, stakeholders and UN agencies have emphasised the need to **strengthen the access to and use of scientific data and information but also better connect science to decision-making**, it is important that the references to science remains in the subsequent versions of the outcome document (post-2015 framework for DRR)
Section A	• The preamble should **lay out more explicitly the new challenges for DRR** - including emerging risks and the rapidity and scale of changes occurring across highly interconnected social and environmental systems - and the opportunities to bring DRR and development together to identify sustainable and safe development pathways. This calls upon a **mainstreaming of the DRR across the development agenda.** • A stronger recognition of the importance to include health in the post-2015 framework for DRR is needed as a key outcome. Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 1948) and the right to life, liberty and security of person is enshrined in the Universal Declaration of Human Rights. As such, **disaster risk reduction and resilience building, and the promotion of healthy communities have clear synergies**: the prevention of illness and provision of healthcare services can increase community resilience in preparing for and responding to disasters, while disaster risk reduction should minimise the risk of death, illness and injury and the burden of disease.
Section B	• The text at present talks mainly speaks to the core dimensions of existing ISDR/HFA I activity and fails at reaching out to provide a bridge into development. The **lack of a bridge between DRR/M and development** has long been recognised as a core barrier to risk reduction and HFA II is an opportunity to send a clear signal of intent and ambition by governments to address this concern. • **Raise the ambition of strategic goals 2 and 3 currently limited to returning to pre-disaster conditions** • Making some **clear connection between the global targets for DRR and those used in the Sustainable Development Goals** (SDG) will be useful to connect agendas and may allow scope for cross analysis of progress, for example on underlying development indicators and disaster loss or risk management capacity. This is especially important given the timing of the HFA II (March 2015) and SDG (September 2015). If potential targets and indicators in the SDGs are not supported in HFA II this may undermine representation of DRR/M in the SDGs (in addition to overlaps, gaps and incoherence). Building a clear connection between the HFA II and SDG processes and expected administrative architectures may also help to institutionalise data collection alongside that required for the SDGs • Move section 11 (3 strategic goals) before the global targets to **clarify the structure of the document around strategic goals, targets, and then priorities for action**
Section C	• The priorities for action need to be supported by a clear set of indicators

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	• The need for decision-making to be underpinned by scientific evidence needs to be embedded as a guiding principle. This also calls for highlighting more strongly that the effective use, accessibility and sharing of risk information including disaggregated and location-specific data and information is to enhance DRR
Section D	• As part of understanding disaster risk, the following point could be added: Develop systematic approaches to better **understand the root causes of disaster risk production and accumulation in development pathways** in order to promote development along more disaster resilient pathways. This will require close collaboration between science, policy and practitioners communities. *(paragraph 14)* • The *sub-section 'building back better'* signals an insufficient level of ambition and do not reflect the pre- and post-disaster opportunities, and the need for resilient and sustainable development choices in the first place and **prevent the creation of risks and exposure**, and the opportunities in post-disaster to enhance resilience but also sustainable development • **Supporting research and innovation** in disaster risk management should also be highlighted as a priority *(paragraph 17)* • Further strengthen the need to **invest in capacity building** including for using early-warning systems, scientific and technical capacity for risk and vulnerability assessments, and for monitoring *(paragraph 18)* • **Revise *section 18d*)** as follows : The functions of Scientific and Technical Committee, established by the General Assembly in its resolution 44/236 of 22 December 1989, should be realized by reactivating and realigning as needed existing international organizations, networks and research programmes ~~revitalized as an international science advisory mechanism, built on networks of national and regional institutions,~~ using a Science and Technology Engagement Partnership for DRR (STEP 4 DRR) in order to strengthen the evidence base in support of the implementation and monitoring of this framework; promote scientific research into risk patterns and trends and the causes and effects of disaster risk in society; to promote and support the availability and application of science to decision-making; and to use post-disaster reviews as opportunities to learn and enhance public policy • An additional **role of academia and research communities** would be to assess scientific evidence, **assess scientific evidence, synthesize and promote access to the policy-relevant results** of peer-reviewed published research on disaster risks and preparedness; in addition to the important points about increasing research for local application and supporting a more effective science-policy interface *(paragraph 23)*
Section E	• The need for an **enhanced partnership between scientists, policy-makers and practitioners** to support risk-informed decision-making at all levels should be highlighted as a key enabler / means of implementation. • The following paragraph could be added: The international scientific community including donors should be called upon to support the strengthening of integrated research into disaster risk, resilience and transformation towards sustainable development, to focus on the evolving nature of risk and scenarios in the medium and long terms; to increase research and its sharing for local application and support to local communities and authorities' action; to promote the involvement of young scientists in capacity building and science dissemination. Governments should provide support and also encourage science to partner with civil society, public bodies, those at risk and the private sector research and practice communities.

Science and Technology Major Group - Summary of comments on the pre-zero draft

Pre-zero draft of the post-2015 framework for disaster risk reduction

Consultation response

The note below is a collective response to the pre-zero draft of the post 2015 framework for disaster risk reduction prepared by the international science community of the Integrated Research on Disaster Risk programme (IRDR). The programme brings together engineering, social, behavioural, and economic sciences working across a range of approaches from ethnographic to predictive modelling, and with global representation. IRDR is co-sponsored by ICSU, ISSC and ISDR. The views presented here are those of the community members and have not included any communication with the co-sponsors. The text below first identifies three primary concerns, these are then articulated n the following text which follows the structure of the zero draft. Throughout we refer to the post-2015 framework for disaster risk reaction as the HFA II (Hyogo Framework for Action II)

Primary Concerns

We have three primary concerns. All are major issues that have not been consistently addressed in the zero draft.

- The text and its goals and priorities for action reflect existing and past DRR agendas and do not reflect the need to adjust disaster risk reduction/management (DRR/M) to a contemporary development and risk context. Current risk requires more forward looking agenda that explicitly builds risk reduction into development, and through this opens space for sustainable and equitable development – the root pathways to enhanced safety for all. We are especially concerned that the contradiction in the report which both calls for bouncing back better (improving development and risk management capacity) and resilience (protecting existing development capacities). Bouncing back better relies on a disaster moment to enhance underlying development capacity, to capture also the pre-disaster space as an opportunity for this we suggest the use of Transformation which is well established in the climate change adaptation (CCA) literature and increasingly in the DRR/M literature. Resilience and Transformation need not be in tension but it is important to include both as policy choices and illustrate how both might be achieved throughout the text.

  Whenever resilience is used we suggest including 'transformation to sustainable and equitable development'. This will flag unambiguously the ambition of moving from resilience alone (risk management to protect existing development) to include scope for transformation (risk management that seeks to enable development to better provide for sustainable and equitable development).

- Science is recognised in the draft text but its capacity is not fully deployed. We support the inclusion of science as a key stakeholder community. However, this misses an opportunity to explicitly include science capacity across the draft as a supporting element in defining, monitoring and enhancing the HFA II. Science is both a product (new knowledge) and a community (university and non-university sectors). Aligning science and science funding to the HFA II is important and bringing science into the HFA process requires integrating science into defining goals and targets not only to provide a front of pine input or end of pipe monitoring role. The HFA I has met only limited success in expanding the science base and interest, especially when compared to the explosion of science research and interest associated with climate science and climate change adaptation. Science is not just another stakeholder, it is the one that carries and develops knowledge, and thus must be recognized and assigned a more substantive role. Science institutions need to be supported first to develop and strengthen integrated research themselves and secondly, to work in partnership with government, private sector, civil society and those at risk to systematically capture experience, advise and support use of integrated research for their policy making.

- Concerted support for administrative capacity to collect local data on vulnerability, hazard, reconstruction outcomes and most importantly on loss. Without considerable and systematic support

by nations and reaching down to local government progress will be constrained. Monitoring capacity will need to be enhanced to support the likely indicators of the SDGs and DRR/M data should be considered alongside this by governments and international agencies. Many may be preparing for likely SDG data collection needs and it is important the HFA II send out a message on data collection and monitoring, including the need to support independent – very likely academic input. This will then prefigure the SDGs which will be determined six months after the HFA II.

We discuss in the following sections the rationale for these concerns and provide example text for how they might be integrated into the framing preamble, goals and detailed priorities.

Preamble

There needs to be a stronger case made for DRR as core to the contemporary development agenda.

As Section B, paragraph 7 states: "The purpose of the present framework is to manage disaster and climate risk in development".

To match this ambition the text in the Preamble could be more outward looking and position the discussion as effectively as possible for DRR/M within the development landscape. The text at present talks only to core dimensions of existing ISDR/HFA I activity and fails at reaching out to provide a bridge into development. This demand is challenging, and especially so for UN agencies and government departments with prescribed mandates, but at the same time the lack of a bridge between DRR/M and development has long been recognised as a core barrier to risk reduction and HFA II is an opportunity to send a clear signal of intent and ambition by governments to address this concern squarely. If this could be done it would be the single most important advance in DRR/M and inform also climate change policy on adaptation (CCA) and loss and damages (L&D).

The first paragraph starts well by introducing the key challenge surfaced by monitoring of the existing HFA – to institutionalise action on risk root causes this is important, the second paragraph then establishes some successes, which is also useful to recognise. It is at this point that a presentation of the contemporary challenges facing DRR would be useful to state. These are challenges in the operating environment that are revealed by recent science advances as well as from the expression of dominant development trajectories. Alongside this concern it is recognised that root causes have not been adequately addressed by government with the HFA I regime, together these points can help to frame the direction of change needed in moving to the HFA to its successor framework.

Key dynamics in development that make the context for HGFA II distinct from HFA I and call for an approach that more clearly embraces and encourages resilience and transformation are:

(1) Systemic risk and local consequences – loss associated with natural hazard trigger events can spill over to generate vulnerability in health systems, the economy, political stability and ecosystem service provision. There needs to be better understanding of these linkages and how contagion might be contained. This includes acknowledging teleconnected risk brought about by the mediating influence of global markets and especially commodity speculation, in the past we have been interested in globalisation as a dynamic pressure shaping access to assets and vulnerability, now we also need to consider global markets and the production of local scarcity. This has been illustrated in the SREX for example through food price shocks associated initially with drought and crop failure but then magnified through commodity speculation and leading to food insecurity in distant cities.

(2) Uncertainties for risk management from climate change – the adaptation agenda and its integration with DRM has been explored in the IPCC SREX report and emphasises experimentation, information flow, accountability and flexibility in risk governance systems, accommodating DRM to climate change is not simply about raising coastal defences, it is about changing the decision-making calculus and mechanisms of everyday development and risk management as a part of this.

(3) Accelerated production of exposure and vulnerability in dominant development paths is continuing. This is articulated in the standing text but does not convey the urgency it might. We are approaching or have exceeded global limits in the Anthropocene and this is a new planning context – The HFA should have a view on underlying resource use question and the distribution of goods that result, this is a major 'root cause' issue.

(4)Shifting rights and expectations for security from risk: there is a shift in national level programming from security from disaster risk as a right, to security being only extended to specific contexts – this can be seen in coastal retreat for example. Retreat of government responsibility and the shifting of the burden of risk management onto individuals have ambiguous implications for equity and risk taking behaviour, but needs to be recognised as a process unfolding in many national contexts. Narratives on resilience and the availability of probabilistic risk forecasting methodologies have allowed this shift as noted, the equity implications beyond a shift from public to individual costs bearing is uncertain but fundamental, especially in richer country contexts.

Taken together these pressures describe the historical moment for HFA II. This moment is distinct from HFAI in the rapidity and scale of dynamism and connectedness in social and environmental systems. This requires a shift in orientation in risk management. Existing techniques and goals for disaster risk reduction are still needed but can only provide long-term risk reduction if they engage in the shifting nature of development. Key here is a move from reducing risk to enable development to bringing risk reduction and development together to identify sustainable and safe development pathways. This in turn can be summarised as a move from resilience (stability seeking) to resilience and transformation (supporting self-realisation and development). The Preamble is an important place to make this key argument in orientation and then to feed this through the detail of the remaining report. The rest of this commentary provides some guidance on how this might be achieved.

There are also key policy reasons why HFA II is important to development and these have not been articulated as clearly as they could be:

(1)Primary here is the inclusion of disaster risk across several of the targets in the draft Sustainable Development Goals. The proposed HFA II text should have as its starting point an ability to connect with these proposed targets – i.e. share text on goals, targets and indicators, and identify ways of helping to generate the institutional architecture, human resource and science to monitor. HFA II should then express the intention to go beyond this and fill in gaps where the SDGs have fallen short. The goals and gaps should be made explicit in the logic of the agenda for defining a new HFA framework.

(2)Similarly, within UNFCCC debates, and IPCC documentation, disasters and DRM have become central, through a focus in climate science and policy on extremes, adaptation to extremes and increasingly on loss and damage. All explicitly site DRM policy and science. The HFA II framework should not be driven by the climate change agenda, but should see it as a point of leverage for high level political support and integration of DRM into wider development sectors. Articulating this opportunity and ambition would be helpful to set the right trajectory for the HFA II negotiations.

Purpose, Scope, Outcome and Goals

The core purpose statement: " The purpose of the present framework is to manage disaster and climate risk in", is welcomed.

This is followed by five global targets and three goals. The global targets are quantifiable indicators, the goals are aspirations for policy guidance. It would add clarity either (1) make a very clear the utility of the global targets as a background monitoring system, because of their operating at the global scale and with difficulty of generating national level data (because of inter-annual variability), or (2) to invert the presentation so that the current policy goals are the highest order statements which then are given

expression at the global level by the global targets and this can feed into more the detailed national Priorities for Action. Of these options 2 is preferred as it maintains the profile of the global targets.

The five global targets provide quantitative outcome indicators to track progress on – reducing mortality, reducing the number affected, reducing economic loss, reducing damage to health and education facilities, and increasing the number of countries with national and local strategies. These goals provide a potentially effective mechanism of connecting HFA to the SDG indicators. This is positive (and commented on below). A trade-off is that the communicating strength of quantitative indicators may attain higher profile than the underlying three goals. This is acceptable if the individual Priorities for Action can lead to the generation clear indicators that in turn can allow some analysis of investment in DRR/M status (Priorities) and outcomes (global targets) and vision (goals). The existing text does not express this ambition, if it exists.

Following from the emphasis we give to evidence based policy an additional global goal to indicate this could be: increase number of countries with national and local loss data collection strategies by [a given percentage] by 20[xx].

A number of analytical questions are raised by the selection of global goals. It is, for example, welcomed that mortality is included as the first global goal. Despite progress, this should remain our primary motivating goal for risk reduction. More difficult is to measure (and define) people affected, and how to capture relative and indirect economic loss (ie the loss accruing to the poor which is small in aggregate terms but a huge development burden, and the systemic losses that may be larger than direct loss). Number of people affected can be a proxy for livelihood impacts at the global scale and given data constraints this is a reasonable set of indicators at the global level. Nations and cities should be encouraged through wording in the text to include additional measures of output that can better capture relative and systemic loss.

Across the loss goals, the common metric used is to reduce by a given percentage in function of number of hazardous events. No simple measure will provide a bias free indicator, and for analysis at the global scale this is a reasonable trade-off against data availability and the inter-annual variability of loss. Using percentage allows comparison between countries that will have a wide range of absolute stated losses. It will be important to define clearly the 'number of hazardous events' and the time frame for accounting. The greater the number of events against which progress is measured, the more representative the measure will be. Similarly while the ISDR may seek countries to return annual progress a better measure that can smooth out inter-annual variability would be a five year moving average. This would help absorb extreme event effects and reveal underlying risk management progress.

Making some clear connection between these indicators and those used in the Sustainable Development Goals (SDG) will be useful to connect agendas and may allow scope for cross analysis of progress, for example on underlying development indicators and disaster loss or risk management capacity. This is especially important given the timing of the HFA II (March 2015) and SDG (September 2015). If potential targets and indicators in the SDGs are not supported in HFA II this may undermine representation of DRR/M in the SDGs (in addition to overlaps, gaps and incoherence). Building a clear connection between the HFA II and SDG processes and expected administrative architectures may also help to institutionalise data collection alongside that required for the SDGs, which will presumably attract national investment given the emphasis in the draft SDGs on this, and the greater scale of national investment responding to the SDGs will likely attract. The HFAII text also needs to be aware of the UNFCCC L&D agenda so that it can align loss and damage measurement indicators in climate change with wider hazards. The aim should not be duplication but supporting goals, targets and indicators.

We suggest that this section indicates a clear role for science in developing and improving indicators, working to generate infrastructure for data collection and perhaps alternative, parallel metric systems. Text could say in a new 11:

'Support for the science community at international, national and local levels, and especially through the university sector to help in providing methodologies to determine and measure targets and to standardise quality of data. This should include addition effort in monitoring and measuring response capacities and capacities for resilience and transformation.'

Three Goals are proposed: (1) reduce prospective disaster risk through safe development (2) reduce existing and accumulated risk through preparedness and response (3) building resilience to recover. The areas and logic of these goals is good – but the presentation is unclear. These goals need to inspire national action with clear wording. A simple improvement would be to insert a full stop after the first clause of each initial statement. The goals could also be improved by providing some clear line of sight between them and the Global Goals and Priorities for Action to Goals (even if individual priorities may attribute to more than one goal).

Detailed wording in the existing goals raises two concerns:
(1)In goal II response is noted and this then requires a serious engagement with structures for response, including coordination with the humanitarian sector etc. in the subsequent sections.
(2)Goal II and III imply the end gaol is a return to pre-disaster conditions. This shows a significant lack of ambition and is out of line with a considerable body of science work and stakeholder positions that would argue for the post-disaster settlement to aim for improved development opportunity and capacity and improved risk management – through enhanced critical infrastructure, employment training, gender equity, representative governance etc. This lack of ambition for DRR is a major concern. The ambition may be difficult to achieve but this should not prevent its articulation.

Guiding Principles

The ambition of this section could be enhanced by extending the highest level of action form the national to the international. SREX included a complete chapter on the international environment. International action and cooperation is driven by national actors so falls within the scope of the HFA II. International coordination is needed for: tracking and managing teleconnected risk, cross-border hazard monitoring, and the sharing (and so shared costs) of disaster response assets, collaboration to respond to international migration associated with disaster risk and events. These are growing issues and require the HFA II to move more into this direction and beyond technology transfer (point m) and overlapping responsibilities (point n).

Issue (i) calls for accessible and better quality disaster risk information for decision-making. This should include public information on the priorities and capacity of disaster risk management. There is a moving gap between public expectations of security and a retreating public sector that through resilience planning has continued to withdraw. This gap needs to be transparent to avoid emergent risk and social tension. This is a particularly acute concern in high income countries facing economic constraints but has global application as a principle of transparent risk governance.

Issue I and II should include building capacity alongside reducing exposure and vulnerability.

Issue III uses the term 'disaster resilience', this needs to be defined as a policy object. Does it mean to connect development and risk reduction, to aim for flexible systems, to prioritise bounding back to pre-disaster conditions? Resilience is not easily compatible with the goal of 'bouncing back better', the latter implying a transformative approach to DRM. WE prefer that resilience is used to describe the ability to continue normal functions in the face of risk and impact and that transformation describes those policies aimed at seeking to build risk reduction into development and risk management (and potentially also to secure development gains though risk management. It would be useful to seek 'disaster resilience and transformation' to signal this aim.

Two new principles are proposed:

A new principle following from the clearer ambition that bouncing back is not enough: DRR and disaster recovery are opportunities to enhance sustainable and equitable development pathways, mechanisms, governance frameworks and partnerships with all actors to enable transformative and resilient development should be at the heart of DRR.

Across the guiding principles the private sector is rather mute. Following form the observations made above we recommend that the private sector be recast, as a key actor amongst local at risk communities (and including more distant up and down stream business linkages in the supply chain). A new principle could articulate this: Disaster risk management should be built into and across the relationships between business interests to include workers, customers, suppliers and regulators. A collaborative approach to risk management can identify weaknesses in production systems and allow a sharing of risk management costs across a production system.

Priorities for Action

The preamble should include

A) Acknowledgement of the need for a much improved data collection infrastructure at local and national levels to enable standardised data collection. Without this monitoring will not be possible. This is a challenge for human resources and perhaps more of political will. This challenge is a major concern.

B) Extending from resilience to include also transformation

C) Noting the need for collaboration with business and community actors and civil society.

Overall, this section misses the opportunity, and need, to encourage new engagement and positioning of actors in recognition of the changing institutional landscape of development. The result again is a lack of ambition. We have three cross-cutting concerns with this section:

(1) Alongside national level responsibility, generating support for local 'community' and local government action is recognised and continues to be important. The message though could be nuanced to move from primarily supporting capacity at these two discrete levels to a primary agenda for supporting collaboration and the exploring of barriers and capacity building for SYNERGY and collaboration. Faced with extreme events community and local DRR is very constrained and can even project a false sense of security to say nothing of generating an opportunity cost for those who have invested time and energy. Similarly developing national level structures and policy is meaningless in the face of everyday risks that are below the radar of key services and policy development. There is a real need to join up local and strategic planning, to recognise the limits of both and generate a platform for exploring this NEW, post-2015 need. From this position come a range of discrete policy agendas, perhaps most important, certainly from a science viewpoint, is the systematic collection of data on local vulnerability, extensive risk and everyday disaster loss.

(2) The private sector continues to be a Cinderella actor – there is much courting from advocacy and government groups, some responsiveness form the sector through corporate social responsibility and internal business contingency planning, but there is really no systematic approach to seeing business as part of a networked community of actors who need to adapt and reduce risk together to enable prosperity to grow, or be maintained. There are a growing number of examples where viewing private business as an isolated actor leads to risk management failure (business continuity blocked by damaged transport or communication infrastructure managed by public or other private actors or by workers (or consumers) being distracted by damages to their homes). For example, where a Japanese assembly pant relocated to Turkey deployed state of the art building technology to reduce earthquake risk. This was successful in a subsequent earthquake – although production was still stopped because workers homes, local schools and critical infrastructure were not all so well designed. Business is embedded in community and a shift from an actor to a system perspective in planning and from individual responsibility to integrated communities of

interest can offer a way past this impasse. There is also a growing concern surrounding the growth of an international for-profit sector focussed on disaster response and reconstruction. Some comment on regulation of this sector and its contemporary effect on price inflation during reconstruction is important. HFA II is an opportunity to put this on the table and so allow the HFA II to confront contemporary and emergent policy issues. This will reframe business, which moves from being a milk cow for local risk management charity or as a drain on reconstruction finance, and becomes a key partner alongside local government and community actors, potentially also national regulators.

(3) There is very little mention of disaster response and recovery towards enhanced development and risk management status. As noted above the ambition as it stands is limited to a return to pre-disaster conditions. Specific clauses of concern are:

14 A key paragraph to emphasise building back better and transformation. The latter is concerned with building back better (ie enhanced development opportunity) through all DRR/M activity, the former focuses on this through response and reconstruction only.
14 a) systematic data collection should be extended from loss and impact to the performance of emergency response and recovery, the quality of emergency, transitional and permanent housing and other facilities, including governance frameworks and decision-making.
14g) include the role of volunteers in monitoring the delivery of disaster management policy and in the quality of reconstruction.
14h) Go beyond encouraging integration in science to encouraging a closer dialogue with decision-makers and risk management practitioners to better understand the challenges that prevent the movement of science into policy and risk information into action.

New clause 14l) Promote better understanding of and action on the blockages that prevent DRR/M from enhancing underlying development goals so reducing risk in the face of a dynamic social and environmental contexts.

New clause 14m) To develop systematic approaches to better understand the root causes of disaster risk production and accumulation in development pathways and so to be able to position development along more disaster resilient pathways. Systematic work will require close collaboration between science and practitioners communities.

15a) this prioritises the strengthening of economic resilience. It is helpful that resilience is used rather than growth, but still by reducing human life down to economic resilience there is a concern this will undermine wellbeing through reduced attention being given to ecological and cultural attributes. We suggest amending to ‘ecological, cultural and economic resilience’. This larger ambition would be in line with the stated text in para 21 for ‘investing in social, economic and environmental resilience’.
15a) This is an important example where resilience should be coupled with ‘transformation to sustainable and equitable development’. This will flag unambiguously the ambition of moving from resilience alone (risk management to protect existing development) to include scope for transformation (risk management that seeks to enable development to better provide for sustainable and equitable development)

15h) Integration here could mention also connection to the SDG process.

15i) Professionalization is a useful agenda, but this should be paralleled with the extension of ‘barefoot’ and ‘appropriate’ technology. This opens considerable opportunity in large informal urban settlements and in conditions of weak or failing states. This is not a poor sister to professional risk management it is a more appropriate methodology for increasing people’s access to safer living conditions. The issue is sensitive but to ignore the need to enhance the quality of risk management technology – even where formal systems are absent – is important. Recall hat in many large cities more than 50% of the population reside in informal settlements in many ways are beyond the reach of government.

16. It is excellent to see a title which expresses the aspiration of 'build back better'. However under a title which has the aspiration to build back better it is curious that the introductory text speaks only of early warning. There is a he need – and here is the opportunity – to enhance response, reconstruction and movement into the post-disaster development space. This is where large gains can be made in HFA II following the success of HFA I in supporting expansion in early warning which has saved many many lives. This is really quite an inconsistent paragraph. Build back better refers to post-disaster action, the policy sites (early warning) is pre disaster and also unlikely to enhance development gain. Greater clarity would come from using transformation instead of build back better to describe pre-and post-disaster opportunity.

16d: This is an opportunity to support risk reduction to enhance development options (ie reduce vulnerability and build capacity). The text could read 'mitigate losses and enable sustainable development'

16e is the only item to focus on reconstruction and its logic is cost saving. This is laudable but again curious. The aim here should be to enhance reconstruction to improve human opportunity and wellbeing – to enhance sustainable and equitable development opportunity through reconstruction. This indicates the need for a further point to articulate this.

17 and 21 we are concerned about the limited scope of '*Investing in Social, Economic and Environmental Resilience'* The paragraph contradicts the aim of building back better, instead it is aligned to a 'return to normality' vision. To emphasise the vision of the HFAII to build risk reduction that can cope with a changing future and reduce risk through enhanced development we suggest the title change to:

Investing in Social, Economic and Environmental Resilience and Transformation

This will require the insertion of more forward looking language in each discussion point that can capture the ambition of creating resources to enhance development and through this to reduce risk – not only to recover from impact.

17 for example, the introduction should include livelihoods, which is probably the most defining cause of vulnerability and source of capacity and should be the first item in the list of local priorities.

18: Understanding Disaster Risk
This is a weak title and could be renamed: *Understanding Disaster Risk and Action*

Focus is on supporting existing risk assessment tools, global campaigns for risk awareness, remote sensing and UN administration for ISDR science input. This is all useful but limited. We suggest explicit support for innovation in science, especially to develop and invest in better methodologies and frameworks to understand why science is not always connected to policy and to catalyse science and evidence based policy making, at all levels of government and into the private and civil sectors. There is a need also to better understand how risk root causes generate risk and loss, and how governments and other actors can move development pathways beyond risk production. Thee require new ways of doing science, ways that allow closer contact between practitioners and scientists but also the maintaining of critical independence.

A call for national government to support funding for basic research into hazard and risk and more importantly perhaps to support collaboration and integration across the sciences and with policy and practice would be key to move science to the next stage for supporting DRR.

23: Role of Stakeholders
Academia is included but very narrowly prescribed. Science needs to enhance its focus on integrated research for DRR/M and also seek new relationships to enhance the ability of science and other stakeholders to communicate and learn.

This agenda needs to include work on governance, poverty, engineering, medicine, and economics. Overall there must be a clear support for building integrated science models that can address local and structural

concerns. Science advances and mainstreaming of science into development sectors including though new partnerships and roles for the university sector will be a major advantage in generating systematic and coordinated monitoring systems – systems that can be independent, rigorous and decentralised, and for maintaining a critical and independent perspective on DRR/M and its relationship to development.

It would be helpful to include (1) explicit mention of root causes as an area where academia can support policy development, and (2) understanding of communication and science-policy gaps as part of a more serious engagement with risk governance as a subject for study (3) scope for developing integrated modelling work to push forward decision-making capacity on multi-hazard risk contexts, to model indirect impact and teleconnected risks (4) to push forward good enough science agendas where research users including those at risk can coproduce the kind of science that is useful with knowledge providers, (5) emphasise the need for context specific local analysis, as well as scenario based science (6) developing an array of methods and frameworks for monitoring risk and its management at different scale and from different actor viewpoints to support stakeholders in monitoring performance in the HFA II and in consideration of goals proposed by the SDGs.

International Partnership in the Implementation and Follow-Up Process

For any of the comments raised above to gain traction additional emphasis is needed in this section. We suggest the opening paragraph (26) include the following edits:

While it is a primary responsibility of States to manage TO BUILD RESILINECE AND TRANSFORMATION, there is a strong expectation on the further strengthening of international cooperation and the forging of an international partnership THIS TO BE BUILT THROUGH disaster risk reduction. Managing disaster risk requires an all states and all-stakeholder effort, given the complexity of the task at hand and the relevance for humanity as a whole. BUILDING A SAFER AND MORE FULFILLING DEVELOPMENT PATHWAYS REQUIRES POLICY BUILT ON EVIDDENCE. In this connection:

New paragraph 26 c):
The international scientific community including donors should be called upon to support strengthening of integrated research into disaster risk, resilience and transformation. Governments should facilitate support and also seek to facilitate and encourage science to partner with civil society, public bodies, those at risk and the private sector research and practice communities. This can build on existing international science networks such as the Belmont Forum, Future earth, ICSU (and its programme for Integrated Research on Disaster Risk). Governments are encouraged to establish national disaster research committees to enable cooperation, integration coproduction with science users and the international community and provide the institutional and human capital for evidence based policy making and practice.

Transition Phase

28: This statement is restricted to focus only on the Science and Technology Committee of the IRDR. An additional statement and commitment is needed to ensure wider support for international mechanisms for science in DRR/M. We suggest insertion of: "...facilitate the revitalization and transformation, and providing support to, the Scientific and Technical Committee and strengthening existing international scientific mechanisms focusing on risk".

Mark Pelling
14 September 2014

18 September 2014: 09:30-13:00, Room XIX
MGST Intervention for Consultation: Pre-zero Draft section D para 13-17
Delivered by Anne-Sophie Stevance, Mark Pelling and Virginia Murray

Co-Chair, Excellencies, colleagues,

The Science and Technology Major Group, representing the international scientific community, the International Council for Science and its members, wishes to record its appreciation to the Co-chairs, Bureau Members and to all Member States for the opportunity to participate in the Informal Consultations and to comment on Section D of the pre-zero draft.

The Science and technology community would like to highlight that the post-2015 framework for disaster risk reduction in general, and the priorities for action section in particular, should fully recognize that disaster risk reduction and disaster recovery are opportunities to enhance sustainable and equitable development as well as partnerships with all actors to put transformative and resilient development at the heart of disaster risk reduction strategies. Transformative development in this case meaning that DRR activities are an opportunity to build back better while also recognizing the need to move beyond resilience to embrace change in development and enable wellbeing. In this way, HFA2 should recognize that all DRR activities and especially response and reconstruction are key opportunities to enhance risk reduction and enable sustainable development.

This calls for joining up local and strategic planning in response to this new post-2015 context to address systemic and interconnected complex risk, that cause secondary impacts in other countries. This also calls for developing strategies for managing future risks including those linked to climate change, and for collaboration across all actors to allow for concerted and mutually reinforcing action to support risk reduction and enable prosperity to grow or be maintained.

The role and value of scientific information in all-hazard disaster risk reduction and resilience has long been recognized. However, it is vital that research becomes more directly actionable, coupled with more effective ways of providing evidence-based advice to support disaster policy and practice. Given the coalescence in 2015 of three major international instruments, a post-2015 framework for disaster risk reduction, a post-2015 sustainable development goals and a renewed agreement on climate change, there needs to be an immediate step change in the ways science is produced and used through close partnership with government, private sector, civil society and those at risk.

1. We feel that multisectorial stakeholders should be included and engagement across sectors and themes encouraged at the level of national and local platforms. Specifically In Para 14, we suggest an additional section to “promote collaboration between science, policy, practice and those at risk to help coproduce knowledge and facilitate science policy communication for evidence-based DRM”. This would ensure the participation of all stakeholders and sectors with interests and responsibilities for DRM activities be recognized. Also in 14d we applaud the explicit recognition of private sector engagement for resilient investments, and would also hope to see explicit recognition of science for evidence-based resilient investments. In 14i we support more encompassing text to emphasise “single and multiple hazard contexts and from everyday to extreme events”.

2. Throughout the text we encourage recognition of the role for DRM to open opportunity for development through transformation in addition to guarding development gains through resilience. In particular in section 15a we encourage emphasizing a holistic understanding of resilience including “to strengthen ecological, cultural, social and economic resilience and transformation”.

3. In 17: investing in social, economic, environmental resilience, We encourage support for resilience and transformation building with those in fragile regions and states. . We propose a new clause “ To collaborate with social actors to strengthen local livelihoods, access to basic needs, the rule of law and good governance, to build resilience with marginal urban and rural population where state capacity is limited. We also suggest the additional point to invest in capacity building, technology

transfer mechanisms and in co-design and co-production mechanisms with communities and local level actors.

We wish to reiterate that the Science Community is committed to, and is already discussing practical steps to support the new framework.

In support of this consultation and drafting process of the post-2015 DRR framework, the Science and Technology Major Group in partnership with representatives from UNISDR and UNESCO have been discussing the contribution of science.

The Major Group (MGST) calls upon governments and other stakeholders to strengthen science in helping to inform decision-making on disaster risk reduction, including data collection and sharing, observations capacity, integrated research, and science advice to decisions-makers. In particular, the development of an international science advisory mechanism for disaster risk reduction to strengthen resilience will enable to better tackle the challenges of integration, communication, and application of scientific evidence to decision-making at all levels, addressing local level needs.

The 'mechanism' will serve as an internationally recognised reference point to improve links between science, public policies and all societal stakeholders on DRR, to support the implementation of the post-2015 framework for disaster risk reduction, in coordination with the UNISDR and other key stakeholders. Working with, and drawing on existing programmes and initiatives across scientific, including health, arts and humanities domains, the mechanism would seek to strengthen and support decision-making on DRR at all scales.

We intend to circulate a draft paper laying out the potential scope and functions of such a mechanism and hope to foster discussion with members states and major groups with a view to ensure that science can support in the most effective ways the implementation of the post-2015 framework for action on disaster risk reduction.

Thank You.

Additional comments from Mark Pelling

1. To help explain the scope and direction of global science and its close fit to the discussion in the room, and indeed the opportunity this brings the HFA II to push a momentum in science. There is already well developed formal science acting on big questions - risk assessment, modelling etc; now coming through we have science on decision-making, working with local community at risk to help understand better the social and cultural institutions that constrain the movement of science to practice. This is something the HFA II can support and where science would be interested to build.

2. Reflecting on the historical moment of the HFA II and in particular the need to be clear on the linkages the HFA II can have between health and technological risks, perhaps also conflict. At a minimum - and very usefully - the HFA II could explicitly support better understanding and policy on integrated risk management that can focus on transmition and amplification of risk between health, disasters etc - a systemic risk approach and one that reflects the way local people experience and have to management risk.

3. Scale and loss, welcoming extensive risk as being important but also that we need reinvigourated attention on the coordination and regulation of reconstruction for large disasters.

Additional comments made by Virginia Murray

The Science and Technology would like to acknowledge the comments from the other major groups on NGOs (disabilities),industry, gender, children and youth, trade unions and others on the value of science and thank them for the collaboration suggested

The concept of the Ebola impact on workers described by the MGTU would point to the value of including the International Health Regulations into the zero draft of the DRR framework

Major Group Science and Technology
19 Sept 2014
Statement to Joint Session made by Anne-Sophie Stevance, Julie Calkins and Virginia Murray

Thank you for the opportunity to provide comment and for an interactive session yesterday; welcome the opportunity to engage with members states and UN agencies

We commend the Co-Chairs for a balanced and comprehensive document in this historical context where post-2015 agenda can foster transformation beyond resilience to sustainable development. The draft acknowledges the importance of science and its ability to provide evidence, technology and data to inform DRR/M activities as well as to underlie the proposed monitoring system.

To fully contribute to DRR decision-making at all levels including by national and local governments, business, and local communities, science must be recognized for its full potential to support evidence-based decision-making.

1-The nature of science: All that science can be and do

Science is about understanding, science is about generating knowledge in a rigorous and verifiable fashion, it is about casting an impartial and objective lens to identify trends and issues. But it is also about problem-solving, supporting the design and the implementation of solutions. Science in its broad sense, encompasses natural, economic, health, social sciences, and engineering, produce and on data, draw on knowledge from practitioners and local communities.

Science can:

- Help to develop critical insights into understanding underlying risk factors
- Help assess risks, vulnerability as well as economic, social and environmental impacts of disaster.
- Help explore options to mitigate, prevent, and manage risks.
- Help develop metrics, methodologies and frameworks to monitor progress towards risk reduction and resilience building
- Help to build capacity to manage and communicate risk, and best practice for reducing exposure

Despite many advances in science, impacts of natural and human-induced disasters continue to increase. Science can only fulfill its potential to benefit societies by enhancing collaboration with governments and key actors to identify the critical questions that need to be answered, and co-produce knowledge and suitable solutions that can effectively support decisions and actions.

In this process to develop the post-2015 framework for disaster risk reduction, we have been trying to learn from experience in HFA, mobilise scientific and research communities working on DRR, and listen to needs from members countries and major groups.

2-What countries have said they need

Consultations on the post-2015 sustainable development agenda and on the disaster risk reduction (DRR) agreements have seen the global science community, governments and

international agencies[1,2] call for a better mobilization of science and technology to disaster risk reduction efforts.

Key messages have emerged including:

1. As mentioned by many speakers, knowledge management standards, data access and monitoring at all levels, and the sharing of science-based risk information
2. As well as technology transfer, innovation and provisions for continued technical support once applied.

Additionally ongoing consultations with Member States to align Science and Technology to Countries' priorities for HFA2 and implementation challenges have shown that:

72% of member state respondents feel that their country does not currently have access to sufficient science and technical information and capacity to inform DRR/M policy and practice. A similar percentage feel that the requirement/need for S&T presents a national challenge to the implementation of HFA and DRR policy.

Hence there is a strong case for greater S&T engagement that can significantly benefit local and national at risk population, policy actors, and economies.

3-The Draft

Our overall suggestions for the pre-zero draft are that it takes into account

Education and capacity building. Greater priority should be put on sharing and disseminating scientific information and translating it into practical methods that can readily be integrated into policies, regulations and implementation plans concerning disaster risk reduction. Education on all levels, comprehensive knowledge management, and greater involvement of science in public awareness-raising and education campaigns should be strengthened.

Integration- We would like to support member States and other Major Groups calls for HFA2 to be human-centred, for meaningful engagement across scales and sectors, for integration to be a guiding principle for the new framework, and also taking an integrated approach to interconnected risks, to better understand and manage cascading effects.

-including to Better connect early warnings to practitioner communities and users of information, including through developing a better understanding of how people respond and how decision-making process work.

-Mobilization and developing working collaborations across different actors, particularly encouraging young local scientists in co-designing and co-producing the science that better address needs on the ground, and mobilizing resources to support these collaborations.

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[1] Statements that have called for greater role of science and access to science-based evidence for DRR from: European Ministerial Meeting and Regional Platform Meetings in Africa, Asia, the Americas, and the Pacific. Countries included in the following networks: ASEAN, CELAC, League of Arab Nations, and CARICOM. Angola, Australia, Bahamas, Cook Islands, Cuba, Egypt, Ethiopia, Finland, G-77 and China, Gabon, Gambia, Germany, India, Indian Ocean Commission, Indonesia, Italy, Jamaica, Madagascar, Myanmar, Netherlands, New Zealand, Norway, Pakistan, Panama, Peru, Philippines, Singapore, South Africa, Thailand, Tonga, Trinidad Tobago, Uganda, West African States, Zambia, United Kingdom. As well as the Major Group on Business and Industry, Major Group on Women

[2]The national and union membership at the ICSU General Assembly (GA) in Auckland August 2014 agreed to to work closely with UNISDR and other international and intergovernmental bodies to integrate scientific knowledge and assessment into decision-making and actions related to disaster risk reduction, and to invite individual ICSU National Members to actively encourage their governments to support the proposed intergovernmental disaster risk assessment process. With this in mind, ICSU will:

- advocate the establishment of intergovernmental/ international science advisory and assessment mechanisms for DRR which will provide scientific advice, evidence and information to support countries implementation of DRR and resilience building by countries and non-state actors at all levels (community, national, regional and global), and identify needs for additional scientific evidence.
- produce a synthesis of current, integrated disaster risk science, which will be available to inform the WCDRR meeting in Sendai and act as a review of the state of the art of DRR research (to feed into to the international science advisory and assessment mechanisms and to inform a future co-designed research agenda for DRR).

-Further develop the architecture for local level data collection on vulnerability, loss and connect up the vast amount of data and information that actors and institutions hold, so that it can be effectively used in decision-making by public and private sectors actors in a timely manner.

Transformation- The post-2015 framework for action in general, and the priorities for action in particular should fully recognize that DRR and recovery are opportunities to enhance sustainable and equitable development as well as partnerships with all actors to put transformation at the heart of DRR strategies. Transformation in this case meaning that DRR activities are an opportunity to build back better while also recognizing the need to move beyond resilience to embrace change in development and enable wellbeing.

The final suggestion is Coordination- Making science more readily available and accessible. More science is needed to continue deepen our understanding, forecasting and ability to respond to disaster needs but getting more knowledge out is not enough. Science needs to become more relevant to decision-making needs and decision-makers, equally communities needs to engage in the process of science generation. This is partly about connecting the dots and enhancing coordination, collaboration, and dialogue towards a shared goal of reducing disaster risks and building resilience of societies.

4-Mechanism

From our consultations, member states feel that improved international coordination and support for exchange of S&T would be useful in achieving DRR goals. Additionally in a recent survey by the UNISDR STAG, of DRR Networks and ISDR Thematic Platforms, greater than 90% also see a need for better coordination of the existing efforts and activities.

Governments and the science community believe it is necessary to consider a mechanism to deliver this coordination, as a way of strengthening DRR decision-makings taken at community, local, national and international level by providing a robust and accessible science and evidence-base as recognized in particular in section 18 d) of the pre-zero draft.

We intend to circulate a draft paper laying out the potential scope and functions of such a mechanism and hope to foster discussion with members states and major groups with a view to ensure that science can support, in the most effective ways, the implementation of the post-2015 framework for action on disaster risk reduction.

In conclusion, science is committed to act as a partner to Member States, alongside other stakeholders, addressing needs, developing (in consultation) the solutions, and supporting the actions for implementation which will lead to the success of HFA2.

Non-paper

How the science and technology community can be strengthened for implementation of the post-2015 framework for disaster risk reduction

A submission from the Science and Technology Major Group to inform Member States and Stakeholders at the Second Preparatory Committee for the United Nations World Conference On Disaster Risk Reduction.

24th October 2014

Summary

The release of the Co-Chairs' zero draft of the post-2015 framework for disaster risk reduction (DRR) recognizes the critical role and value of scientific information and technology in achieving successful DRR and resilience. Member States and other stakeholders should be able to rely on accessible technology, research and evidence, to enable the development and implementation of national and local DRR policies and practices. **Governments should call for a strengthened international partnership involving science and technology organisations and networks and other stakeholders to advance the actions identified in the zero draft.**

Given the coalescence in 2015 of three major international instruments: 1) a post-2015 framework for DRR; 2) post-2015 sustainable development goals; and 3) a new agreement on climate change, there is an urgent need for a step change in the use of science and technology to support the implementation of these international efforts.

To reflect the inclusive, action-oriented, and collaborative nature of the science and technology community aiming to enhance the contributions and impacts of science and technology for DRR, the ***Major Group for Science and Technology*** (MGST) calls on governments and other stakeholders to endorse the **Science and Technology Engagement Partnership for DRR (STEP-4-DRR)**

The MGST invites all stakeholders around the world to share ideas and actions for advancing this paper, which sets out the background, principles, function and form of STEP-4-DRR.

Background

1. Consultations on the post-2015 sustainable development agenda and on the disaster risk reduction (DRR) agreement have seen the global science and technology community, governments and international agencies[1,2] call for a better mobilisation of science and technology to support DRR efforts (see Annex I). Governments and the science and technology community believe that to strengthen DRR decisions taken at community, local, national and international level, it is necessary to provide a robust and accessible science and evidence-base[3].

2. The Co-Chairs' zero draft[4] also reflects this analysis in the many calls to 'enhance the scientific and technical work on disaster risk reduction' which are distributed in many sections of the document[5]. The renewed approach needs to take into account the extraordinary, dynamic and localised nature of disasters and needs to be able to deliver relevant information to decision-makers in a timely manner, including at national and local levels.

[1] Statements that have called for greater role of science and access to science-based evidence for DRR from: European Ministerial Meeting and Regional Platform Meetings in Africa, Asia, the Americas, the Pacific, the League of Arab States and the European Forum on Disaster Risk Reduction. Countries included in the following networks: ASEAN, CELAC, League of Arab Nations, and CARICOM. Angola, Australia, Bahamas, Cook Islands, Cuba, Egypt, Ethiopia, Finland, G-77 and China, Gabon, Gambia, Germany, India, Indian Ocean Commission, Indonesia, Italy, Jamaica, Madagascar, Myanmar, Netherlands, New Zealand, Norway, Pakistan, Panama, Peru, Philippines, Singapore, South Africa, Thailand, Tonga, Trinidad Tobago, Uganda, West African States, Zambia, United Kingdom. As well as the Major Group on Business and Industry, Major Group on Women

[2] The national and union membership at the ICSU General Assembly (GA) in Auckland August 2014 agreed to work closely with UNISDR and other international and intergovernmental bodies to integrate scientific knowledge and assessment into decision-making and actions related to disaster risk reduction, and to invite individual ICSU National Members to actively encourage their governments to support the proposed intergovernmental disaster risk assessment process. With this in mind, ICSU will:

- advocate the establishment of intergovernmental/ international science advisory and assessment mechanisms for DRR which will provide scientific advice, evidence and information to support countries implementation of DRR and resilience building by countries and non-state actors at all levels (community, national, regional and global), and identify needs for additional scientific evidence.
- produce a synthesis of current, integrated disaster risk science, which will be available to inform the WCDRR meeting in Sendai and act as a review of the state of the art of DRR research (to feed into to the international science advisory and assessment mechanisms and to inform a future co-designed research agenda for DRR).

[3] A summary of the science and technical calls from the Member States and the global science community is included in Annex 1

[4] Zero draft available: http://www.wcdrr.org/preparatory/

[5] Zero draft paras 15h,22e-h, 23a-d, 23f, 25h, 26e, 28i, 32a, 33a-b, 34d, 38, 40b, 40g

3. The value of a scientific evidence-base for advancing DRR has long been recognised by governments, the international science community and other stakeholders[6]. With the gravity of disaster risk escalating around the globe it is now vital that such knowledge is shared and becomes accessible in a form that can directly support coordinated action, for example, in the form of scientific advice to support the design of interventions, assessments and monitoring mechanisms, as well as to inform policy development related to DRR. The science of hazards, exposure and vulnerability also provides evidence of what makes effective DRR.

4. Many existing programmes, initiatives and resources[7] already seek to generate and communicate evidence on DRR at all levels. Building on, reinforcing and informing their important and extensive work at international, regional, national and local level will be essential. Innovative, fast-acting, and forward-thinking approaches are urgently needed by Governments, the global science community and other societal stakeholders to strengthen links between scientific information and evidence-based decision making; particular care must be taken to ensure that those countries which, currently appear to possess little science capacity locally can benefit from such stronger links, and acquire locally-based capacity over time.

5. Notwithstanding these strong foundations, science and technology are not yet having a sufficient impact on DRR initiatives; and livelihoods are being affected at an increasing rate which could be reduced through a more robust, science-informed approach to DRR. There are many gaps and overlaps in the provision of science knowledge in key areas, such as disaster response, recovery and reconstruction. This is due to a lack of coordination of the global scientific community for DRR and the absence of a formally mandated liaison between governments, platforms and organizations. An enhanced coordination approach with a clear mission to communicate and match the needs of Member States to the resources offered by the science and technology community could overcome the current barriers to optimal integration of science and technology in DRR.

6. Governments and stakeholders need to make full use of, and hold to account, the existing organisations, networks, and research frameworks that contribute to DRR and enhancing resilience, notably by improving their coordination and supporting knowledge exchange and peer-to-peer learning. There is a wide consensus amongst Governments, the global science and technology community and other stakeholders that by reinforcing the capacity of these organisations and institutions and informing them of Governments' priorities for evidence, they will increase the efficiency and effectiveness of interventions and investments, both now and in the future.

7. This non-paper[8] presents the principles, function and form of an enhanced approach for evidence-based progress towards DRR and resilience (referred to henceforth as the Science and Technology Engagement Partnership for DRR – STEP-4-DRR), as called for by the Co-Chairs in the Pre-Zero Draft. It is informed by a range of activities including those by the International Council for Science (ICSU) scientific unions and national members, Integrated Research on Disaster Risk (IRDR) projects, and the UNISDR Scientific and Technical Advisory Group (STAG). In addition, UK Collaborative on Development Sciences (UKCDS) is supporting two projects that provide a foundation for STEP-4-DRR. The first maps existing international, regional, and key national organisations with interests in DRR science and technology and their functions in relation to identified country needs and in response to national DRR strategies. The second analyses the establishment, processes and current operations of existing international science

[6] The Science and Technology *Major Group* recognises the following conclusions reached in the Chair's Summary of the Global Platform for Disaster Risk Reduction (May 2013):
1. *The gravity of disaster risk facing many high, middle and low income countries is escalating*.
2. *Disaster risk reduction is important in achieving Sustainable Development Goals, in tackling the impacts of climate change, and in building resilience to extreme events.*
3. *The critical role of science and education is central in supporting the disaster risk reduction and resilience efforts of governments and other stakeholders.*
4. *Existing efforts to strengthen scientific information and evidence should be utilised in supporting disaster risk reduction.* (4)
5. *Co-ordinated, consolidated approaches to scientific information and evidence in the management of present and future disaster risks are important.* These are required for the effective implementation and monitoring of disaster risk reduction and resilience, and in meeting the demands for such information from communities, governments and other stakeholders.
6. *The diversity, representation, and independence of science are important to disaster risk reduction and resilience.*

[7] These include, but are not limited to, the important work of the (i) United Nations International Strategy for Disaster Reduction (UNISDR) Science and Technical Advisory Group, (ii) the Integrated Research on Disaster Risk programme (IRDR) of the International Council for Science (ICSU), the International Social Science Council and UNISDR, (iii) the Group of Experts on Disaster Risk Assessment, working under ICSU sponsorship to provide expert assessments on disaster risk reduction science, (iv) UNESCO's intergovernmental scientific and research programmes related to DRR in water (such as the International Flood and Drought Initiatives), oceans (Tsunami Early Warning Systems) and geohazards (IGCP) (v) the UNISDR Biannual Global Assessment Report, (vi) the Intergovernmental Panel on Climate Change's Special Report on Managing the Risks of Extreme Events and Disasters for Advancing Climate Change Adaptation and the 5th Assessment Report, and (vii) current and existing programmes and initiatives of specialised UN agencies and other international agencies Mapping work is currently underway to identify the key organisations and initiatives that could be served by such a Mechanism to avoid duplication and increase the impact of available resources.

[8] The non-paper has been informed and prepared by representatives from ICSU, IRDR, UNISDR, UNESCO and DRR experts including the UNISDR STAG and in consultation with many individuals, organisations from a wide range of countries

coordination bodies in contiguous fields, such as health, environment and biodiversity, to identify successful practice and lessons learnt.

8. This non-paper offers a basis for further discussion and iteration with all other interested parties, notably other major groups, governments, the science community and other stakeholders, with a view to reaching consensus on support for STEP-4-DRR in Sendai at the World Conference for Disaster Risk Reduction[9]. It seeks to assist governments in recognising, reinforcing and making best use of the existing and emerging science and technology capabilities at all levels, from communities to the global scale. This it does, notably in response to requests made during regional meetings of UN Member States and articulated by many civil society partners, and in the spirit of social and economic inclusiveness.

Principles

9. It is proposed that STEP-4-DRR should:

   (a) collaborate with government policy-makers and other key stakeholders to meet their knowledge and evidence needs, applying the principles of being 'policy relevant, but not policy prescriptive' and through 'co-design, co-production and co-delivery'

   (b) promote the development of, access to and use of credible, independent science-based information and technological tools for application to DRR

   (c) promote consistency, applicability and availability of risk information through thematic international assessment of DRR research, open information, standards, guidelines and best-practice documentation - from local to global levels

   (d) capitalise on existing risk information and risk management organisations and infrastructure so as to minimise the need for new organisations and processes; this would include those taken forward by UN bodies, international science organisations and their networks of scientists, as well as by regional intergovernmental bodies and by governments. It will be critical to incorporate initiatives and capabilities developed and supported by the private and corporate sectors, civil society organisations and NGOs, communities and many other stakeholders

   (e) draw on all relevant disciplines, including social, economic, natural, health, and engineering sciences, and humanities, and integrate different spatial and time scales in its analyses.

   (f) acknowledge and deepen the understanding of the role of education, of the arts and of cultural knowledge for public risk literacy, DRR and resilient societies and the importance of representation of geographies and levels of vulnerabilities (such as, gender, age, disabilities, and minorities)

   (g) have a simple governance and implementation structure to enable flexible, dynamic and responsive working approaches with clearly defined mandates and work plans, reflecting a good understanding of the full cycle of disaster prevention, preparedness, response and recovery

   (h) make the best use of existing national, sub-regional and regional formal assessments and other knowledge, as appropriate, and encouraging the contribution of indigenous and local knowledge to DRR and resilience building.

Functions

10. In order to enable the integration of science and technology into DRR and resilience building fully and scale up their positive impacts, there is a need to strengthen coordination across scientific and research organisations, institutions and networks currently delivering scientific information on DRR and connect them to policy-makers and practitioners. Cooperating with other science and evidence co-ordination mechanisms (e.g. IPCC or IPBES) and other Post-2015 initiatives, such as those for the implementation of the Sustainable Development Goals or climate

[9] The Tokyo Statement https://www.restec.or.jp/geoss_ap7/public/TokyoStatement.pdf

change agreements, will be crucial to avoid duplication and optimise and complement the use of resources. It will be important for STEP-4-DRR to take account of these sources of evidence and build and strengthen the lines of communication and collaboration with other bodies and partnerships necessary to achieve this. Furthermore, the specific nature of advisory and/or advocacy functions should be explicitly addressed, considering the range of options reflected in the findings of the review of existing bodies.

11. It is important to give careful consideration to the position of STEP-4-DRR with respect to the policy - science and technology interface. In particular, the link between the generation and/or assessment of science and the use of science as evidence for policymaking needs to be well-defined and effectively coordinated if the challenges faced by the IPCC, for example, are to be avoided. The findings of the review of existing bodies and partnerships suggest that STEP-4-DRR should allow as much as possible for continuous engagement between scientists and policy-makers in its procedures and reporting, such that the needs of governments and other stakeholders can be met.

12. Such an enhanced policy – science and technology interface in the Post -2015 Framework for Disaster Risk Reduction Framework– currently referred to mainly under Priority 1 of the zero draft - would focus the contribution of science around four functions, namely:

    a. Assessment of the current state of scientific knowledge on disaster risks and resilience (what is known, what is not known, what the uncertainties are, what the most useful tools and methods are, etc.)

    b. Synthesis and translation of scientific evidence in a timely and accessible manner for a wide audience of policy-makers and DRR practitioners

    c. Provision of scientific advice to decision-makers through close collaboration and dialogue to identify needs from policy- and decision-makers, including at national and local levels, and review policy options based on scientific evidence.

    d. Monitoring and review, ensuring that scientific research and technological development is aligned with DRR needs and can support and be used in monitoring progress on reducing disaster risk and building resilience.

In addition, two cross-cutting capabilities would need to be strengthened to ensure an effective science/technology-policy interface:

    e. Communication and engagement of policy-makers and stakeholders in science and technology to ensure needs are identified and met, and conversely, a stronger involvement of scientists in policy processes to provide scientific evidence and advice. The current lack of effective communication and engagement results in science and technology being under-valued and a low perception of utility to the user. It also imposes barriers towards creating a shared language to span the policy and science and technology arenas.

    f. Capacity building to ensure that all countries can develop, access and effectively use scientific information. STEP-4-DRR should consider its objectives with respect to capacity building and consult with stakeholders to ensure these match with priority needs. Based on the review of existing bodies, achieving capacity-building objectives requires clearly identifying the link between need and action, as well as the ownership and support of all those involved. It will be necessary at this stage to recognise the flexibility required to respond to differing needs.

Form

13. The form of governance and operation of such an effort will be derived from lessons learnt from the analysis of existing international frameworks for science and technology advice and coordination and from a needs analysis in terms of necessary DRR science and technology capabilities at all levels. This should ensure that STEP-4-DRR will add value and be an efficient, responsive and effective tool for DRR and for the strengthening resilience.

14. Mechanisms established in recent years, e.g. Future Earth and UNSDSN, have tended to take more inclusive approaches to engagement, involving the private sector, local communities, UN bodies, academia and many other stakeholders in their governance structures and procedures. STEP-4-DRR should follow these examples, actively engaging with a wide range of actors with a stake in DRR to harvest knowledge of different types and to

communicate it effectively. The governance structure for STEP-4-DRR must be such that the necessary levels of participation with all stakeholders will be enabled.

15. While STEP-4-DRR should be embedded in the post-2015 framework for DRR, under which all members will sign up to universal procedures, there is potential to consider flexible structures including voluntary working groups around key themes or issues of best practice. This approach would not provide a barrier to government participation but would create opportunities to enable champions to engage in specific initiatives and get these started relatively quickly. This would help to establish best practices while providing for others to become involved at a later stage once the benefits are clear. A relevant example from this review is SDSN's Solutions Initiatives, which have been taken up by additional governments once the evidence has been demonstrated.

16. For such a partnership to be influential at an intergovernmental level as provided by the post-2015 Framework for DRR, its steering structure must reflect global regions, but be supported by national governments, and be visibly inclusive. At the operational level, for example, STEP-4-DRR would draw from existing global and regional platforms on DRR and science, technology and evidence networks. It would be responsible, among other things, for resource sharing and interfacing with initiatives on DRR, including multilateral agreements, UN bodies and networks of governments, private sector, communities and others stakeholders alongside research and technology institutions, organisations and networks.

17. Activities of STEP-4-DRR should:

- draw on the best available international scientific, technical and socio-economic expertise as well as other forms of knowledge as guided by the principles set out above;
- reinforce and partner with existing scientific, technological and evidence networks on DRR, to ensure the best tools, platforms and experts are accessible and supported;
- recognise critical legal constraints that may apply in some contexts (as well as opportunities arising out of supra-national collaboration); and
- work in a forward-thinking, horizon scanning system, towards identifying challenges and opportunities in the medium to long term.

18. Reflections on funding for science and technology tools in the domain of DRR should be informed by the assessment of the state of science and technology and a consolidated assessment of current needs as well as priorities in the capacity building strategy. There is an opportunity for STEP-4-DRR to benefit from more recent innovations in funding. While country contributions and UN support will be an important element, new modalities for leveraging private sources of funding should also be considered, particularly given the close links between parts of the private sector and DRR (e.g. the insurance and construction industries). The financing of the strengthening of the science and technology responsibilities of existing DRR institutions and the establishment of STEP-4-DRR will need to be discussed and balanced with the needs of international and national government and other key stakeholders including the private sector.

ANNEX I Key messages from Member States

At the Regional Platforms and the 1st Preparatory Committee for the Post-2015 framework for Disaster Risk Reduction (DRR), many Member States[10], regional groups, IGOs and thematic major groups at Prep Com 1 emphasized the importance of greater science and technology knowledge, innovation and education as necessary tools for effective DRR decision-making as well as for the Post-2015 framework for DRR. In total, 70 out of 89 Member State and Country Group Interventions and 7 of 9 Major Group Interventions expressed such calls.

This note summarises the calls for science, information and technology; and the potential role and functions that a science and technology engagement partnership could perform as expressed by Member States. This analysis is based on a review of the Statements from Regional Platforms and Statements at Prep Com 1.

These statements represent the range of current views on the role of science and technology in the post-2015 framework for DRR. Clearly this does not capture nuances of views or differences within countries, groups or disciplines; however it is indicative of the level of support for a greater role of science and technology and the differing area of interests, priorities, and scales of needs. There are significant areas of agreement among the regions, member states and thematic major groups which recognized the need for science to support implementation. The key messages that have emerged are:

1. **Promote scientific research and practitioner engagement[11]:** Promote scientific research into risk patterns and trends, as well as the causes and effects of disaster risk in society; and engage with the National/Sub-National research and practitioner community involved in DRR to strengthen the science-policy interface
2. **Increase coordination[12]:** Increasing coordination of international and national partnerships, cross-disciplinary working and the benefit of existing initiatives, including to strengthen and increase the benefit of existing regional hubs/centres of excellence.
3. **Increase national capacity[13]:** To increase national ability to consider evidence-based risk assessment in investing for DRR and formulating evidence-based risk management policies.
4. **Successful Practice[14] Methodologies and Data Standardization:** Synthesis and communication of best practice in science and technology to inform and support the timely availability, easy accessibility and ready application of understandable science and evidence for decision-making;
5. **Open data access, knowledge management and sharing[15]**: The collection, sharing and use of data on disasters and on DRR. Member states clearly requested to 'make information available and accessible at regional, national, and local levels'.
6. **Technology Transfer and Innovation[16]:** To promote the development, accessibility and transfer of technology and innovation, and continued technical support once applied.
7. **Communication and education[17]:** To support and expand information campaigns and public education on DRR leading to greater community resilience.
8. **Local empowerment[18]:** To facilitate local access to data and increase collection and exchange of local and traditional knowledge in DRR i.e. ability to feed national and local information 'up'

[10] http://www.wcdrr.org/preparatory/prepcom1/statements
[11] France, Gabon, Germany, India, Jamaica, Morocco, Myanmar, Netherlands Thailand, Uganda, CELAC, Africa Group, IGAD, and statements from Asia and the Pacific Regional Platforms.
[12] Egypt, Madagascar, Panama, Algeria, Jamaica, New Zealand, Angola, Brazil, South Korea, Singapore, G-77 and China, Africa Group and and statements from Africa, Asia and the Pacific Regional Platforms and the Major Group for Business and Industry.
[13] Czech Republic, Cook Islands, Gabon, Indonesia, Nepal, UK, South Africa, Armenia, Australia, Algeria, Myanmar, France, India, West African States, Zambia G-77 and China, ASEAN, and statements from Asia and the Pacific Regional Platforms and Major Groups for NGOs, Farmers and Women.
[14] Cook Islands, Finland, Italy, Jamaica, Singapore, Thailand, Trinidad and Tobago , UK, League of Arab States, and Japan, Peru, Australia, Georgia, ASEAN, CARICOM, and statement from the Americas Regional Platform and Major Group for Business and Industry.
[15] Bangladesh, Barbados, Madagascar, Algeria, League of Arab States, Central American Integration System, Australia, Egypt, Ethiopia, Finland, India, Madagascar, Morocco, Mozambique, Netherlands, Philippines, New Zealand, Switzerland, Trinidad and Tobago, Armenia and Major Group for Business and Industry
[16] League of Arab States, Bolivia CELAC, Cuba, Dominican Republic, Egypt, Ethiopia, India, Indian Ocean Commission, Madagascar, Pakistan, Morocco, Netherlands, Panama, Philippines, South Africa, Thailand, Tonga, W. African States, Zambia, Algeria, Mozambique, New Zealand, Gambia, India, Norway
[17] Angola, Fiji, Finland, IGAD, India, Sri Lanka, and statement from the Americas Regional Platform and Major group for Indigenous People
[18] Brazil, Indonesia, Nigeria, Norway, League of Arab States, Africa Group and Major group for Indigenous People

Meeting on proposal from the Science and Technology community to strengthen science in the post-2015 framework for disaster risk reduction
01 October 2014, hosted at ICSU in Paris

Participants: Delilah Al-Khudhairy, Pedro Basabe, Joern Birkmann, Julie Calkins, Elizabeth Carabine, Rudiger Klein, Alexandros Makarigakis, Virginia Murray, Nora Papp, John Rees, Badaoui Rouhban, Anne-Sophie Stevance, Steven Wilson, Soichiro Yasukawa

Main outcomes

- Convergence across the various institutions / groups represented at the meeting on the functions and overall framing of the new approach for enhancing role of science in HFA2 through a partnership realising the full potential of existing institutions and initiatives working on DRR to enhance the accessibility and application of scientific knowledge to decision-making, rather than establishing a new mechanism
- Agreement of the participants to collaborate closely for a strong and common message of the scientific community, especially for the Tokyo Conference and Sendai Conference
- Agreement of a way forward to further develop the objectives, scope, governance, modalities

Main discussion points

In order to scale up impacts of science on disaster risk reduction and resilience building, there is a need to strengthen coordination across scientific and research organisations and networks currently delivering scientific information on DRR and connect them to policy-makers. Such an enhanced science-policy interface in HFA2 – currently referred to in paragraph 18d) of the pre-zero draft - would focus the contribution of science around four main functions, namely:

1. Assessment of current state of scientific knowledge on disaster risks and resilience (what is known, what is not known, what are the uncertainties, etc.)
2. Synthesis of scientific evidence in a timely and accessible manner
3. Scientific advice to decision-makers through close collaboration and dialogue to identify needs from policy- and decision-makers, including at national and local levels, and review policy options based on scientific evidence
4. Monitoring and review, ensuring that scientific data and information can support and be used in monitoring progress towards disaster risk reduction and resilience building.

In addition, two cross-cutting capabilities would need to be strengthened to ensure an effective science-policy interface:

- Communication and engagement of policy-makers and stakeholders in science to ensure needs are identified and met, and conversely, a stronger involvement of scientists in policy processes to provide scientific evidence and advice.
- Capacity building to ensure that all countries can have access and use effectively scientific information

To reflect the inclusive, action-oriented, and collaborative nature of the proposal from the science and technology community to enhance the contributions and impacts of science for DRR, it was suggested to refer to this approach as the Science and Technology Engagement Partnership for DRR (STEP 4 DRR).

It is proposed that section 18d) of the pre-zero draft of the post-2015 framework be revised as follows:

> The functions of Scientific and Technical Committee, established by the General Assembly in its resolution 44/236 of 22 December 1989[1], should be realized by reactivating and realigning as needed existing international organizations, networks and research programmes ~~revitalized as an international science advisory mechanism, built on networks of national and regional institutions,~~ using a Science and Technology Engagement Partnership for DRR (STEP 4 DRR) in order to strengthen the evidence base in support of the implementation and monitoring of this framework; promote scientific research into risk patterns and trends and the causes and effects of disaster risk in society; to promote and support the availability and application of science to decision-making; and to use post-disaster reviews as opportunities to learn and enhance public policy

Based on a slide prepared by Professor Onishi and Professor Koike and colleagues from Japan, there is a consensus on the need to make a better use, reinforce and better coordinate the work of existing institutions, bodies, initiatives working on DRR to deliver stronger scientific support for decision-making on DRR. They include science advisory bodies (such as the STAG), monitoring processes (HFA Monitor), assessment (GAR), research programmes (such as IRDR), etc. – recognising that no single institutions can meet the needs from countries and stakeholders for a more effective use of scientific data and information, and stronger science-policy interface on DRR - and connect them to policy-makers (including through the global, regional and national platforms on DRR) established by UNISDR.

The new approach needs to take into account the extraordinary, dynamic and localised nature of disasters and needs to be able to deliver in a timely manner, relevant information to decision-makers, including at national and local levels. It was also noted that in addition to responding to knowledge needs, the approach needs to promote a mainstream of DRR in development policies and routine activities to prevent the creation of risks.

Julie Calkins presented her analysis of the needs related to science and technology expressed from countries, UN agencies, and stakeholders in the preparatory process to the Sendai conference as well as the main providers of information on DRR. Elizabeth Carabine presented her research project aimed at reviewing existing models and organisations delivering a function of scientific coordination and support to decision-makers that could inform the further development of the approach to science support and advice in the context of HFA 2, and in particular its governance. Participants agreed that these two pieces of work are very valuable in informing further progress on the definition of the scope, functions, governance of the science approach for DRR.

Way forward

The next steps to continue developing a common message from the Science and Technology Community in the run-up to Sendai was discussed. The main actions are summarised in the table below.

Comment [AS1]: See annex 1 the text of the resolution. It is not clear that the form proposed for the S&T Committee in the resolution and its functions correspond to the objectives and functions discussed for the S&T Engagement Partnership (especially around assessment, synthesis, scientific advice and monitoring to decision-makers from governments and stakeholders at all levels, including national and local levels)

Comment [AS2]: Does it need to reformulated around the 4 functions

[1] See Annex 1 for the relevant text from resolution 44/236

Outcomes of the Co-chairs consultation 02 October, Geneva

Anne-Sophie Stevance ICSU, Rudiger Klein, John Rees, Julie Calkins and Virginia Murray attended the consultation meeting at the UN in Geneva.

At 08.45, the Science and Technology Major Group delegation met with the Co-Chairs and their representatives to discuss the contribution of science in HFA2. The Co-chairs highlighted that there is a strong support for S&T in the preparatory discussions on the post-2015 framework for DRR and that the challenges will be in implementing a stronger science-policy interface to support evidence-based decision-making. Ideas for supporting the successful implementation of a strong science-policy interface were discussed. Please see below as annex 2 the thank you letter sent to the Co-chairs summarising the main discussion points.

The Co-Chairs consultation meeting with all Major Groups offered the possibility for the delegation to discussing the contributions of science. Other Major Groups and Member States expressed their support for a strong S&T in HFA2 as it underpins decisions and actions across many sectors and levels.

The following revision for section 18d) was proposed as a result of the discussion the day before in Paris by Virginia Murray:

- 18.d) The functions of Scientific and Technical Committee, established by the General Assembly in its resolution 44/236 of 22 December 1989, should be realized by reactivating existing international organizations, networks, or research frameworks using a science and technology engagement partnership for DRR (STEP 4 DRR) ~~revitalized as an international science advisory mechanism, built on networks of national and regional institutions,~~ in order to strengthen the evidence base in support of the implementation and monitoring of this framework; promote scientific research into risk patterns and trends and the causes and effects of disaster risk in society; to promote and support the availability and application of science to decision-making; and to use post-disaster reviews as opportunities to learn and enhance public policy.

The meeting also provided an opportunity to exchange with the Japanese delegation in Geneva and clarify the intentions of the S&T Major Group in relation to 18d), and in particular that the proposal is about building a coordinated approach drawing on existing initiatives to make science more useful and more used by decision-makers, but it not about creating a completely new mechanism. Please find as Annex 3 the text that supported the inputs from the S&T delegation throughout the consultation meeting.

ICSU
International Council for Science

To: H.E. Ambassador Thani Thongphakdi and H. E. Ambassador Päivi Kairamo (and her representative Renne Klinge)
Cc: Margareta Wahlström, Natapanu Nopakun, Neil McFarlane, Pedro Basabe, Dizery Salim

07th October 2014

Excellencies,

Our representatives, Ms. Anne-Sophie Stevance, International Council for Science (ICSU) as organising partner of the Science and Technology Major Group; Dr. Rudiger Klein, Executive Director, Integrated Research on Disaster Risk (IRDR); Professor Virginia Murray, Public Health England and vice-chair of UNISDR Science and Technical Advisory Group (STAG); Professor John Rees, Research Councils UK; and Dr Julie Calkins, U.K. Collaborative for Development Science would like to thank you for the opportunity to meet with you on 02 October to discuss the contribution of science in the post-2015 framework for disaster risk reduction.

We are very grateful for the rich and open discussion that we had and would like to highlight some of the key discussion points that we will be working on over the coming months in the run up to the Conference in Sendai, and beyond.

We share a common objective of ensuring that decision-making on disaster risk reduction is underpinned by scientific evidence. While this is recognised in principle in the pre-zero draft of the post-2015 framework for disaster risk reduction, we also realise that the challenge ahead lies with developing effective science-policy interfaces at global, national, regional and local level. Our involvement in the preparatory process for the Third World Conference for Disaster Risk Reduction is precisely focusing on the need for a Science & Technology Partnership for DRR that would mobilise existing institutions and initiatives, enhance their respective strengths, promote access to and application of science and technology, and scale up impacts of science-based decision-making on DRR and resilience building.

As outlined during our discussion and during the co-chair's consultation meetings with the Major Groups, the Science and Technology communities have focused, in addition to their ongoing research and educational work, on improving the coordination across scientific and research organisations and networks that deliver DRR science and on better connecting them to policy-makers. Such an enhanced science-policy interface in HFA2 is currently referred to in paragraph 18d) of the pre-zero draft as an "international scientific advisory mechanism". We discussed that such

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International Council for Science

an improved interface should, in effect, focus the contribution of science around four main functions, namely:

- **Assessment** of current state of scientific knowledge on disaster risks and resilience (what is known, what is not known, what are uncertainties etc.);
- **Synthesis** of scientific evidence in a timely and accessible manner that responds to the knowledge needs from policy-makers and practitioners;
- **Advisory work** aimed at identifying and responding to needs of policy- and decision-makers at all levels, and at highlighting scientific evidence that can better enable choices between different policy options;
- **Monitoring and review**, ensuring that scientific data and information can support and be used in monitoring and reviewing progress towards disaster risk reduction and resilience building.

To make this possible, two cross-cutting capabilities would need to be strengthened:

- C**ommunication and engagement**, aimed at better understanding both the available and the needed scientific knowledge thereby ensuring a stronger involvement of science in policy- and decision-making at all levels;.
- **Capacity building** to ensure that all sectors and countries understand, have access to, and can use scientific information for better informed decision-making.

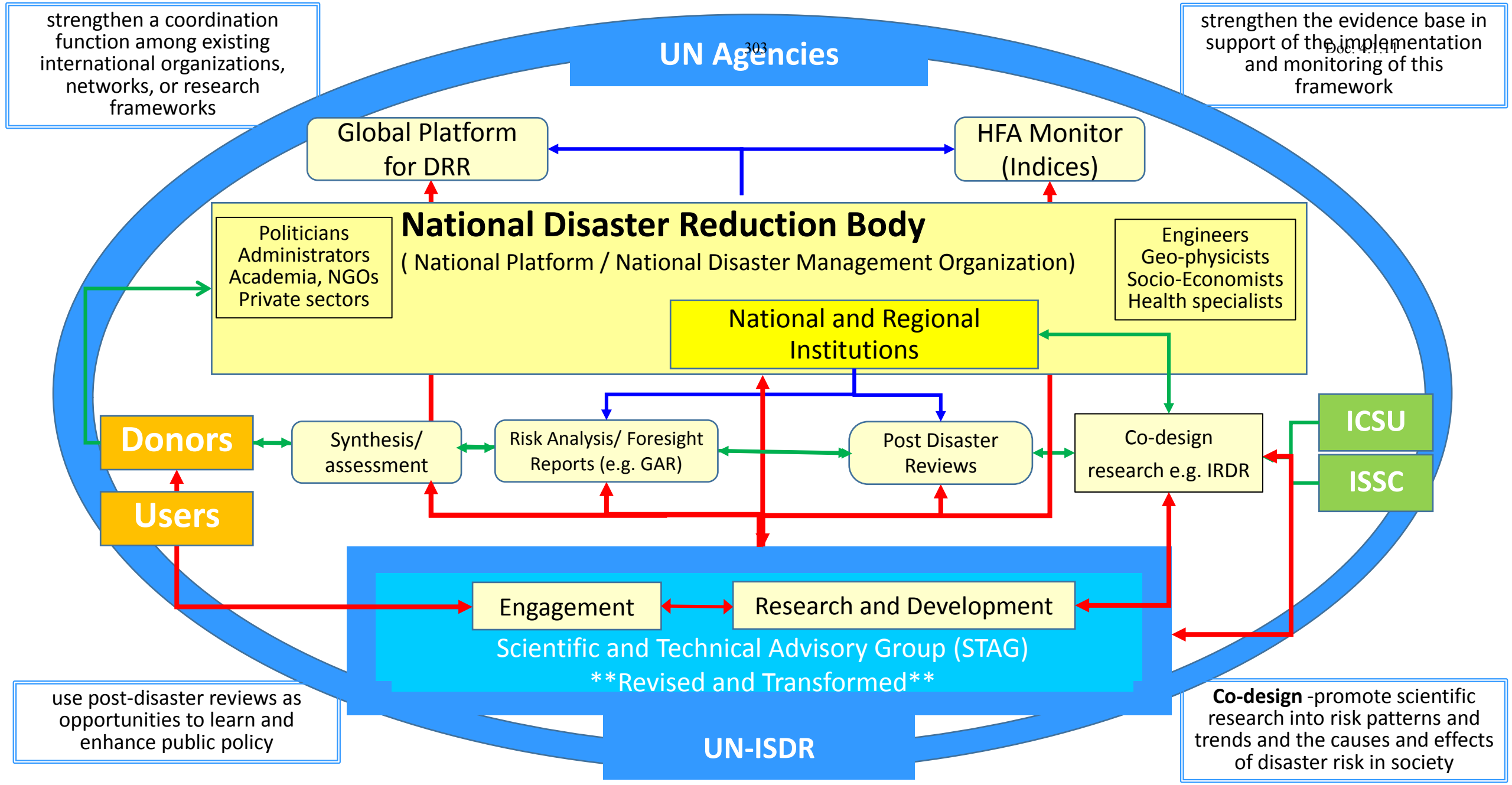
We very much welcome the opportunity for the Scientific & Technological community to contribute through the Major Group to the preparatory process and ensure that science remains strongly embedded in the post-2015 framework for disaster risk reduction.

Also we look forward to contributing to a post 2015 handbook and any relevant processes and deliverables related to the effective implementation of HFA2. In this regard, we are very keen to follow up with you after the Sendai conference on the following suggestions from our discussions:

- to organise regional capacity building workshops around the concrete modalities to implement a stronger science-policy interface, particularly in the Asian region, and
- a workshop or other mechanism to work with national DRR partners and scientists and Ministries of Finance to consider the cost benefits of DRR

We look forward to continue working with you towards an ambitious post-2015 framework for disaster risk reduction and to ensuring that science fully contributes to its implementation.

Peter Liss (Interim Executive Director, International Council for Science)
On behalf of the Science & Technology Major Group



Revised Approach to Strengthen and Support Decision-Making on DRR

Image of Revitalization of the Scientific and technological Committee to Strengthen Evidence-based decision making for Disaster Risk reduction

- 18.d) The functions of Scientific and Technical Committee, established by the General Assembly in its resolution 44/236 of 22 December 1989, should be realized by reactivating existing international organizations, networks, or research frameworks ~~revitalized as an international science advisory mechanism, built on networks of national and regional institutions,~~ in order to strengthen the evidence base in support of the implementation and monitoring of this framework; promote scientific research into risk patterns and trends and the causes and effects of disaster risk in society; to promote and support the availability and application of science to decision-making; and to use post-disaster reviews as opportunities to learn and enhance public policy.

United Nations A/CONF.224/PC(II)/L.3

General Assembly

Distr.: General
20 October 2014

Original: English

ADVANCED COPY FOR INFORMATION PURPOSES ONLY

Third United Nations World Conference on Disaster Risk Reduction

Preparatory Committee
Second session
Geneva, 17-18 November 2014
Item 5 of the provisional agenda
Considerations on the post-2015 framework for disaster risk reduction

Post-2015 framework for disaster risk reduction

Zero draft submitted by the Co-Chairs of the Preparatory Committee

Transmitted herewith is the zero draft of the post-2015 framework for disaster risk reduction, brought to the attention of the second session of the Preparatory Committee of the Third United Nations World Conference on Disaster Risk Reduction to be held in Geneva from 17 to 18 November 2014.

The present zero draft has been prepared by the co-Chairs of the Preparatory Committee to serve as the basis for negotiations during the second session of the Preparatory Committee.

The zero draft builds on the pre-zero draft, which in turn drew on the views of Member States and major groups expressed during the first meeting of the Preparatory Committee, held in Geneva from 14 to 15 July 2014, as well as the outcome of the six regional platforms for disaster risk reduction and the reports of the multi-stakeholders consultations on the post-2015 framework for disaster risk reduction held since March 2012.

Importantly, the zero draft takes into consideration the views and comments (available at http://www.wcdrr.org/preparatory/viewsandcomments) expressed during the ten open-ended informal consultative meetings with Member States and five consultations with major groups, held in Geneva from 5 September to 13 October 2014, as mandated by the first meeting of the Preparatory Committee. In addition, a joint meeting with Member States and major groups was held on 19 September 2014.

Following the decision of General Assembly resolution 68/211 of 20 December 2013, which called for a concise, focused, forward-looking and action-oriented outcome document, the zero draft proposes a stand-alone document that builds substantively on and supersedes the Hyogo Framework for Action in order to offer a single reference document to policymakers and practitioners. It also attempts to strike a balance between, on the one hand, the need for precise and detailed guidance on a variety of critical issues of a cross-cutting nature that are relevant to all States and other stakeholders and, on the other hand, the need to produce a concise, focused and practical outcome document.

Contents

[Post-2015 framework for disaster risk reduction]

Provisional name

A. Preamble

1. This post-2015 framework for disaster risk reduction was adopted at the Third United Nations World Conference on Disaster Risk Reduction, held from 14 to 18 March 2015 in Sendai, Miyagi, Japan. The World Conference represented a unique opportunity for countries to: i) adopt a concise, focused, forward-looking and action-oriented post-2015 framework for disaster risk reduction and ii) identify modalities of cooperation and the periodic review of its implementation based on the assessment and review of the implementation of the Hyogo Framework for Action (HFA) and the experience gained through the regional and national strategies, institutions and plans for disaster risk reduction, as well as relevant regional and multilateral agreements.

The Hyogo Framework for Action: lessons learned and gaps identified

2. Since the adoption of the HFA in 2005, and as documented in national and regional progress reports on HFA implementation as well as in other global reports, progress has been achieved in reducing disaster risk at local, national, regional and global levels by countries and other stakeholders. This has contributed to decreasing mortality risk in the case of hazards,[1] such as floods and tropical storms. There is growing evidence that reducing disaster risk is a cost effective investment in preventing future losses. Countries have enhanced their capacities. International mechanisms for cooperation, such as the Global Platform for Disaster Risk Reduction and the regional platforms for disaster risk reduction have been instrumental in the development of policies, strategies, the advancement of knowledge and mutual learning. Overall, the HFA has been an important instrument for raising public and institutional awareness, generating political commitment, and focusing and catalyzing actions by a wide range of stakeholders at local, national, regional and global levels.

3. Over the same 10-year time frame, however, disasters have continued to exact a heavy toll. Over 700 thousand people lost their lives, over 1.4 million were injured, and around 23 million were made homeless as a result of disasters. Overall, more than 1.5 billion people were affected by disasters in various ways. The total economic loss was more than $1.3 trillion. In addition, between 2008 and 2012, 144 million were displaced by disasters. Disasters are increasing in frequency and intensity, and those exacerbated by climate change are significantly impeding progress toward sustainable development. Evidence indicates that exposure of people and assets in all countries has increased faster than vulnerability[2] has decreased, thus generating new risk and a steady rise in disasters losses with significant socio-economic impact in the short, medium and long term, especially at the local and community level. Recurring small scale, slow-onset and

[1] Hazard is defined as: "A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Hazards can include latent conditions that may represent future threats and can have different origins: natural (geological, hydrometeorological and biological) or induced by human processes (environmental degradation and technological hazards)" UN/ISDR. Geneva 2004.

[2] Vulnerability is defined as: "The conditions determined by physical, social, economic, and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards". UN/ISDR. Geneva 2004.

extensive disasters particularly affect communities, households and small and medium enterprises and constitute a high percentage of all losses. All governments — especially those in developing countries where the mortality and economic losses from disasters are disporportionately higher — and businesses are faced with increasing levels of possible hidden costs and challenges to meet financial and other obligations. The security of people, communities and countries may also be affected.

4. We are at a crossroads. It is urgent and critical to anticipate, plan for and act on risk scenarios over at least the next 50 years to protect more effectively human beings and their assets, and ecosystems.

5. There has to be a broader and a more people-centred preventive approach to disaster risk. Enhanced work to address exposure and vulnerability and ensure accountability for risk creation is required at all levels. More dedicated action needs to be focused on tackling underlying risk drivers and compounding factors, such as demographic change, the consequences of poverty and inequality, weak governance, inadequate and non-risk-informed policies, limited capacity especially at the local level, poorly managed urban and rural development, declining ecosystems, climate change and variability, and conflict situations. Such risk drivers condition the resilience of households, communities, businesses and the public sector. Moreover, it is necessary to continue increasing preparedness for response and reconstruction and use post-disaster reconstruction and recovery to reduce future disaster risk.

6. Disaster risk reduction practices need to be multi-hazard based, inclusive and accessible to be efficient and effective. It is necessary to ensure the engagement of all stakeholders and the participation of women, children and youth, persons with disabilities, indigenous peoples, volunteers, the community of practitioners, and older persons in the design and implementation of policies, plans and standards. There is a need for the public and private sectors to work more closely together and create opportunities for collaboration, and for business to integrate disaster risk into their management practices, investments and accounting.

7. Global, regional and transboundary cooperation remains pivotal in supporting States, local authorities, communities and businesses to reduce disaster risk. Existing mechanisms require further strengthening. Developing countries, in particular small island developing States, landlocked developing countries, least developed countries and Africa need special attention and support through bilateral and multilateral channels for capacity building, financial and technical assistance, and technology transfer.

8. Overall, the HFA has provided critical guidance to reduce disaster risk. Its implementation has, however, highlighted gaps in addressing the underlying risk factors and in the formulation of goals and priorities[3] for actions and the need to update and reorder them. It also highlighted the need to give the necessary visibility to all levels of implementation, and place emphasis on stakeholders and their role.

9. The concurrent post-2015 processes on sustainable development, climate change and disaster risk provide the international community with a unique opportunity to ensure coherence and alignment across policies, practices and partnerships for implementation.

[3] The Hyogo Framework Priorities (2005-2015) are: 1) Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation; 2) identify, assess and monitor disaster risks and enhance early warning; 3) use knowledge, innovation and education to build a culture of safety and resilience at all levels; 4) reduce the underlying risk factors; and 5) strengthen disaster preparedness for effective response at all levels.

10. Against this background, and in order to reduce disaster risk by addressing existing challenges and preparing for future ones, there is a need to: focus action on understanding risk and how it is created; strengthen governance mechanisms at all levels; invest in economic, social, cultural and environmental resilience; and enhance preparedness, response, recovery and reconstruction at all levels.

B. Expected outcome and goal

11. Whereas some progress in reducing losses has been achieved, a substantial reduction requires perseverance and persistence with a more explicit focus on persons and measuring progress. Building on the HFA, the present framework aims to achieve the following outcome over the next 20 years:

The substantial reduction of disaster losses, in lives, and in the social, economic and environmental assets of persons, communities and countries.

The realization of this outcome requires the stated commitment and involvement of the political leadership at every level in every country. Responsibilities should be shared by central governments and subnational governing components and all stakeholders, as appropriate to their national circumstances and systems of governance.

12. To attain the expected outcome, the following goal is pursued:

The prevention of disaster risk creation and the reduction of the existing disaster risk through economic, social, cultural, and environmental measures which address exposure and vulnerability, and thus strengthen resilience.

13. To support the assessment of global progress in achieving the expected outcome, five global targets are identified: reduce disaster mortality by [a given percentage in function of number of hazardous events] by 20[xx]; reduce the number of affected people by [a given percentage in function of number of hazardous events] by 20[xx]; reduce disaster economic loss by [a given percentage in function of number of hazardous events] by 20[xx]; reduce disaster damage to health and educational facilities by [a given percentage in function of number of hazardous events] by 20[xx]; and increase number of countries with national and local strategies by [a given percentage] by 20[xx].

14. The present framework applies to the risk of small scale and large scale, frequent and infrequent, and slow onset disasters caused by natural hazards and related environmental and technological hazards and risks and aims to guide the multi-hazard management of disaster risk in development at local, national, regional and global levels.

C. Guiding principles

15. Drawing from the principles contained in the Yokohama Strategy[4] and the HFA, the implementation of the present framework will be guided by the following principles:

a) Each State has the primary responsibility to holistically reduce disaster risk, including through cooperation.

b) Managing the risk of disasters should be aimed at protecting persons, their property, livelihoods and productive assets, while respecting their human rights.

[4] The Yokohama Strategy for a Safer World: Guidelines for Natural Disaster Prevention, Preparedness and Mitigation and its Plan of action, adopted in 1994.

c) Disaster risk reduction depends on governance mechanisms across sectors and at local, national, regional and global levels and their coordination. It requires the full engagement of all State institutions of an executive and legislative nature at national and local levels, and a clear articulation of responsibilities across public and private stakeholders, including business, to ensure mutual outreach, partnership and accountability.

d) The leadership and empowerment of local authorities and communities are required to reduce disaster risk, and decision-making powers, resources and incentives require to be allocated accordingly. The enabling and coordinating role of central government is essential.

e) Disaster risk reduction requires an all-of-society engagement and empowerment, equality, and inclusive, accessible and non-discriminatory participation, paying special attention to at-risk groups in line with internationally agreed human rights. A gender, age, disability, and cultural perspective should be integrated into disaster risk management.

f) Addressing underlying risk factors through risk-informed public and private investments is more cost-effective than primary reliance on post-disaster response and recovery, and contributes to the sustainability of development.

g) While the drivers of risk may be local, national, transboundary or global in scope, disaster risks have local and specific characteristics which must be understood, given the differential capacities of countries and communities, for the determination of measures to reduce disaster risk.

h) Disaster risk reduction requires transparent risk-informed decision-making based on open and gender-specific/sex/age/disability-disaggregated data, and freely available, accessible, up-to-date, easy-to-understand, science-based, non-sensitive risk information complemented by local, traditional and indigenous knowledge, as relevant.

i) The development, revision and implementation of relevant national and international policies, plans, practices and mechanisms needs to aim at coherence and mutual reinforcement across sustainable development and growth, climate change and variability, environmental management and disaster risk reduction agendas. Disaster risk reduction mainstreaming is critical to the sustainability of development.

j) The post-disaster recovery and reconstruction phase is critical to reduce disaster risk and for public education and awareness on disaster risk.

k) Global, regional and transboundary cooperation is essential and requires further strengthening in accordance with international obligations.

l) Developing countries, in particular least developed countries, small island developing States, and landlocked developing countries, and Africa require specific support tailored to their needs and priorities.

D. Priorities for action

General considerations

16. Each State has the primary responsibility for its own sustainable development and for taking effective measures to reduce disaster risk, including for the protection of people on its territory, infrastructure and other national assets from the impact of disasters. At the same time, in the context of increasing global interdependence, concerted international cooperation and an enabling international environment are required to stimulate and contribute to developing the knowledge, capacities and motivation needed for disaster risk reduction at all levels.

17. All actors are encouraged to build multi-stakeholder partnerships, at all levels, as appropriate, and on a voluntary basis, to contribute to the implementation of this framework. States and other actors are also encouraged to promote the strengthening or establishment of national, regional and international volunteer corps, which can be made available to countries and to the international community to contribute to addressing vulnerability and reducing disaster risk.

18. The promotion of a culture of prevention, including through the mobilization of adequate resources for disaster risk reduction, is an investment for the future with substantial returns.

Priorities for action

19. Taking into account the experience gained through the implementation of the HFA, and in pursuit of the expected outcome and goal, there is a need for focused action across sectors by States at local, national, regional and global levels in the following priority areas:

1) Understanding disaster risk;

2) Strengthening governance and institutions to manage disaster risk;

3) Investing in economic, social, cultural and environmental resilience;

4) Enhancing preparedness for effective response, and building back better in recovery and reconstruction.

20. In their approach to disaster risk reduction, all stakeholders should take into consideration the key activities listed under each of these four priorities and should implement them, as appropriate, to their own circumstances and capacities.

Priority 1: Understanding disaster risk

21. Policies and practices for disaster risk management should be based on an understanding of risk in all its dimensions of vulnerability, capacity and exposure of persons and assets and hazards characteristics. This requires an all-states and all-stakeholders effort on a number of areas for action, such as collection, analysis and dissemination of information and data, advancement of research, and the development and sharing of open-source risk models, as well as continuous monitoring and exchange of practices and learning.

National and local levels

22. It is important to:

a) Establish baselines and periodically assess disaster risks, including vulnerability, exposure and hazard characteristics, at the relevant spatial scale, such as within a river basin and along coastlines;

b) Systematically survey, record and publicly account for all disaster losses and the economic, social and health impacts;

c) Make non-sensitive risk, disasters and loss information free, openly available, and accessible, and ensure its dissemination, at all levels, taking into account the needs of different categories of users. It is important to ensure real-time access to reliable data, and use ICT innovations to enhance collection, analysis and dissemination of data;

d) Build the capacity of local government officials, public servants, communities and volunteers through sharing of experience, training and learning programmes on disaster risk reduction, targeting specific sectors to ensure consistent

collection, analysis and use of risk assessment, and implementation of disaster-risk related policies and plans;

e) Promote and improve dialogue and cooperation among scientific communities, including social, health, economic and environmental sciences, practitioners, businesses, people at risk and policymakers;

f) Ensure the use of traditional and local knowledge to complement, as relevant and appropriate, scientific knowledge in disaster risk assessment and the development and implementation of policies, plans and programs;

g) Strengthen technical and scientific capacity to develop and apply methodologies, standards, metrics and models to assess vulnerabilities and exposure to all hazards, taking into account landscape and watershed level considerations and ecosystem functions and services to reduce disaster risk in risk assessment protocols;

h) Invest in research, innovation and technology and promote a long-term multi-hazard approach and solution-driven research for disaster risk management to better address gaps, societal challenges and emerging risks and interdependencies;

i) Promote the incorporation of disaster risk education, including preparedness, in educational curricula at all levels and in informal education systems, as well as in professional education;

j) Promote national strategies to strengthen public education and awareness of risk information and knowledge through campaigns, social media, community mobilization and other available means, taking into account specific audiences and their needs.

Global and regional levels

23. It is important to:

a) Share and cooperate on the development of science-based and common methodologies and standards for risk modelling and assessment, monitoring, early warning, disaster recording and statistics, and disaggregated data collection;

b) Continue promoting the use, application and affordability of, and access to, information, communication and space-based technologies and related services, as well as maintaining and strengthening in-situ and remotely-sensed earth observations, to support disaster risk reduction at all levels, and strengthen the utilization of social media and mobile phone networks to support successful risk communication;

c) Promote common efforts in partnership with scientific community and the private sector to establish good international practices;

d) 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;

e) Continue global campaigns as instruments for public awareness and education (e.g. “The One Million Safe Schools and Hospitals”, “Making Cities Resilient: my city is getting ready!”, the “United Nations Sasakawa Award for Disaster Reduction”, and the yearly United Nations International Day for Disaster Reduction) that promote a culture of prevention, generate understanding of disaster risk, support mutual learning and share experiences, and encourage all public and private stakeholders to actively engage and join such initiatives, and develop new ones at local, national, regional and global levels, with similar purposes;

f) Enhance the scientific and technical work on disaster risk reduction through the mobilization of existing networks of scientific and research institutions at national, regional and international levels in order to strengthen the evidence base in support of the implementation and monitoring of this framework, promote scientific research into risk patterns and trends and the causes and effects of short and long-term disaster risk in society, utilize available good practices and lessons learned, provide guidance on methodologies and standards for risk assessments, risk modelling and the use of data, identify research and technology gaps and set recommendations for research priority areas in disaster risk management, promote and support the availability and application of science to decision-making, contribute and cooperate on the update of the 2009 Terminology on Disaster Risk Reduction, and use post-disaster reviews as opportunities to learn and enhance public policy.

Priority 2: Strengthening governance and institutions to manage disaster risk

24. Governance conditions the effective and efficient management of disaster risk at all levels. Clear vision, plan, guidance and coordination across sectors and participation of all stakeholders, as appropriate, are required. Strengthening the governance of disaster risk management is therefore necessary.

National and local levels

25. It is important to:

a) Promote the coherence of, and further develop as appropriate, national and local frameworks of law, regulation and public policy, including for development, poverty reduction, climate change adaptation and environmental management, which through defining roles and responsibilities guide the public sector in: (i) addressing disaster risk in publically owned, managed or regulated services and infrastructure, and (ii) regulate and provide incentives for actions by persons, households, communities and businesses;

b) Adopt and implement national and local plans, across different timescales aimed at addressing short, medium and long term disaster risk, with targets, indicators and timeframes;

c) Strengthen mechanisms to monitor, periodically assess, ensure compliance, and publicly report on progress on national and local plans by all public and private stakeholders;

d) Enhance, as appropriate, relevant normative frameworks and mechanisms to strengthen disclosure of and, accountability for, disaster risk;

e) Promote public scrutiny and institutional debates, including by parliamentarians and other elected officials, on progress reports of local and national plans;

f) Establish or further strengthen all-stakeholder coordination mechanisms at national and local levels, such as national and local platforms for disaster risk reduction It is necessary for such mechanisms to have a strong foundation in national institutional frameworks with clearly assigned responsibilities and authority to, inter alia, identify sectoral and multisectoral risk, build awareness and knowledge of risk through sharing and dissemination of risk information and data, contribute to and coordinate reports on local and national disaster risk, coordinate public awareness campaigns on disaster risk, facilitate and support local multisectoral cooperation (e.g. among local governments), contribute to the determination of and reporting on national and local disaster risk management plans. These responsibilities and authority should be established through laws, regulations, standards, and procedures, as appropriate;

g) Empower, through regulatory and financial means, local action and leadership in disaster risk management by local authorities, communities and indigenous people;

h) Stimulate, in accordance with national practices, the development of quality standards and mechanisms, including certifications, for disaster risk management, with the participation of the private sector and professional associations and scientific organizations.

Global and regional levels

26. It is important to:

a) Continue to guide action at the regional level through agreed regional and subregional strategies for disaster risk reduction, adjusted, as appropriate, in light of the framework;

b) Foster collaboration and partnership across mechanisms and institutions for the implementation of instruments relevant to disaster risk, such as for climate change, sustainable development, environment, health and others, as appropriate;

c) Continue to actively engage in the Global Platform for Disaster Risk Reduction, the regional and subregional platforms for disaster risk reduction and thematic platforms, which represent effective multi-stakeholder mechanisms to forge partnerships, periodically assess progress on implementation and share practice and knowledge on risk-informed policies, programmes and investments, including on development and climate issues;

d) Continue to strengthen capacities and mechanisms, such as hazard-focused disaster risk reduction forums, to reduce transboundary disaster risk, including displacement risk;

e) Promote and use voluntary and self-initiated peer reviews among countries and local governments as they may represent a useful mechanism to support local and national efforts, reviews of progress, mutual learning, exchange of good practices and identification of specific areas for future technical cooperation, exchange of information, technology transfer and financial support, as appropriate;

f) Strengthen cooperation and call for contribution to the development of international monitoring mechanisms, such as the HFA Monitor, that are intended to support and complement national and local monitoring systems, and provide a practical understanding of overall regional and global efforts to manage disaster risk. Such information is of relevance in the consideration of progress on the sustainable development agenda and goals, and on climate change.

Priority 3: Investing in economic, social, cultural, and environmental resilience

27. Investing in risk prevention and reduction through structural and non-structural measures is essential to enhance the economic, social, cultural resilience of persons, communities, countries and their assets as well as the environment. Such measures are cost-effective and instrumental to save lives and prevent and reduce losses. A continued integrated focus on key development areas, such as health, education, agriculture, water, ecosystem management, housing, cultural heritage, public awareness, financial and risk transfer mechanisms, is required.

National and local levels

28. It is important to:

a) Allocate resources at all levels of administration for the development and the implementation of disaster risk reduction policies, plans, laws and regulations in all relevant sectors;

b) Strengthen public investments in critical facilities and physical infrastructures, particularly disaster prevention and reduction structural measures, schools, clinics, hospitals, water and power plants , communications and transport lifelines, disaster warning and management centres through proper design, including the Principles of Universal Design, building better from the start, retrofitting and re-building, taking into account economic, social, and environmental impact assessments.

c) Protect or support the protection of museums and other sites of historical, cultural and religious interest, as well as of work places;

d) Give land-use policy development and implementation, including urban planning, informal and non-permanent housing, special attention due to their direct impact on risk exposure;

e) Promote the incorporation of disaster risk assessment into rural development planning and management, in particular with regard to mountain and coastal flood plain areas, including through the identification of land zones that are available and safe for human settlement;

f) Encourage the revision of existing or the development of new building codes, standards, rehabilitation and reconstruction practices at the national or local levels, as appropriate, with the aim of making them more applicable in the local context, particularly in informal human settlements, and reinforce the capacity to implement, monitor and enforce such codes, including through a consensus-based approach;

g) Enhance the resilience of health systems by integrating disaster risk reduction into primary health care, especially at local level developing the capacity of health workers in understanding risk, applying and implementing disaster risk reduction approaches in health work, and supporting and training community health groups in disaster risk reduction approaches;

h) Strengthen the implementation of social safety-net mechanisms to assist the poor and at-risk groups, such as older persons, persons with disabilities, displaced persons, migrants and other populations exposed to disaster risk and affected by disasters;

i) Strengthen policy, technical and institutional capacities in local and national disaster risk management, including those related to technology, training, and human and material resources;

j) Review existing financial and fiscal instruments in order to support risk-sensitive public and private investments, and promote the integration of disaster risk reduction considerations and measures in economic valuations, investment tracking, cost-benefit analyses, competitiveness strategies, investment decisions, debt ratings, risk analysis and growth forecasts, budgeting and accounting, and the determination of incentives;

k) Strengthen the sustainable use and management of ecosystems and implement integrated environmental and natural resource management approaches that incorporate disaster risk reduction.

Global and regional levels

29. It is important to:

a) Mainstream disaster risk reduction measures appropriately into multilateral and bilateral development assistance programmes including those related to poverty reduction, natural resource management, urban development and adaptation to climate change.

b) Recognizing the different multilateral processes, work through the United Nations and other relevant institutions and processes, as appropriate, to promote coherence at all levels and across sustainable development, climate change and disaster risk reduction policies, plans and programs;

c) Promote the development and strengthening, as relevant, of financial, risk transfer and risk sharing mechanisms in close cooperation with business and international financial institutions;

d) Enhance the engagement with institutions involved with financial regulation in an effort to better understand the impacts of disasters on the financial stability of countries, companies and individuals, and thereby promote key policy developments around financial stability and inclusion.

Priority 4: Enhancing preparedness for effective response, and building back better in recovery and reconstruction

30. The steady growth of disaster risk, including the increase of people and assets exposure, combined with the learning from past disasters, indicate the need to further strengthen preparedness for response at all levels. Disasters have demonstrated that the recovery and reconstruction phase needs to be planned ahead of the disaster and is critical to building back better and making nations and communities more resilient to disasters.

National and local levels

31. It is important to:

a) Prepare or review and periodically update disaster preparedness and contingency plans and policies at all levels, with a particular focus on preventing and responding to possible displacement, and ensuring the participation of all sectors and stakeholder groups, including the most vulnerable, in the design and planning;

b) Continue to further strengthen early warning systems and tailor them to the needs of users, including social and cultural requirements;

c) Promote regular disaster preparedness exercises, including evacuation drills, with a view to ensuring rapid and effective disaster response and access to essential food and non-food relief supplies, as appropriate, to local needs;

d) Make new and existing hospitals and health facilities safe and operational during disasters;

e) Adopt public policies and establish coordination and funding mechanisms and procedures to plan and prepare for post-disaster recovery and reconstruction;

f) Ensure the engagement of diverse institutions, multiple authorities and stakeholders at all levels, in view of the complex and costly nature of post-disaster reconstruction;

g) Learn from the recovery and reconstruction programs over the HFA decade and exchange experience knowledge and lessons learned in order to develop guidance for

preparedness for reconstruction, including on land use planning and structural standards improvement;

h) Promote the incorporation of disaster risk management into post-disaster recovery and rehabilitation processes and use opportunities during the recovery phase to develop capacities that reduce disaster risk in the medium term, including through the sharing of expertise, knowledge and lessons learned.

Global and regional levels

32. It is important to:

a) Strengthen and, when necessary, develop coordinated regional approaches, regional policies, operational mechanisms, making use of best technology and innovation, which may include the use of business facilities and services and military assets upon request, as well as plans and communication systems to prepare for and ensure rapid and effective disaster response in situations that exceed national coping capacities;

b) Promote the further development of standards, codes and other guidance instruments to support preparedness and response, and contribute to the lessons learned for policy practice and reconstruction programmes;

c) Promote the further development of effective regional early warning mechanisms to ensure that information is acted on across all relevant countries;

d) Enhance international mechanisms, such as the International Recovery Platform, for the sharing of experience and learning among countries and all stakeholders;

e) Develop practical guidance and compile good practices to support planning, investments and policy development and decisions.

E. Role of stakeholders

33. While States have the overall responsibility to reduce disaster risk, stakeholders play a critical role as enablers in providing support to States in accordance with national policies, in the implementation of the framework at local, national, regional and global levels. Their commitment, goodwill, knowledge, experience and resources will be required.

34. While States, building on existing relevant international instruments, may determine more specific roles and responsibilities for all public and private stakeholders in accordance with national plans and priorities, the following actions should be encouraged:

a) Business, professional associations, private sector financial institutions, including financial regulators and accounting bodies, and philanthropic foundations to integrate disaster risk management, including business continuity, in business models and practices, especially in micro, small and medium enterprises, engage in awareness-raising and training for their employees and customers, engage in and support research and innovation as well as the full use of technology in disaster risk management, share and disseminate knowledge, practices and data, actively engage with the public sector for the development of normative frameworks, quality standards, regulations, as well as policies and plans to incorporate disaster risk reduction;

b) Academia and research entities to focus on the evolving nature of risk and scenarios in the medium and long terms, increase research for local application and support action by local communities and authorities, and support the interface between policy and science for effective decision-making;

c) Social groups, volunteers, civil society and faith-based organizations to engage with public institutions and business to, inter alia, provide specific knowledge and

pragmatic guidance in the context of the development and implementation of normative frameworks, standards and plans for disaster risk reduction; engage in the implementation of local, national, regional and global plans and strategies, and their monitoring; contribute to and support public awareness and education on disaster risk ; advocate for an inclusive and all-of-society disaster risk management which strengthen the synergies across groups. On this point, it should be noted that:

i) Children and youth are agents of change and can contribute their experience and should be given the space and modalities to do this;

ii) Women are critical to effectively managing disaster risk, and designing, resourcing and implementing gender-responsive disaster risk reduction policies, plans and programs;

iii) Persons with disabilities are critical in the assessment of risk and design and implementation of plans tailored to specific requirements in line with the Principles of Universal Design;

iv) Older persons have years of knowledge, skills and wisdom which are invaluable assets to reduce disaster risk and should be included in the design of policies, plans, and mechanisms, including for early warning;

v) Indigenous peoples through their experience and traditional knowledge provide an important contribution to the development and implementation of plans and mechanisms, including for early warning.

d) Media to take an active role at local, national, regional and global levels in contributing to raise public awareness and understanding, and to disseminating risk, hazard and disaster information, including on small-scale disasters, in a simple, easy-to-understand and accessible manner, in close cooperation with science and academia; adopt specific disaster risk reduction communication policies; support, as appropriate, early warning systems; and stimulate a culture of prevention and strong community involvement in sustained public education campaigns and public consultations at all levels of society.

35. With reference to the General Assembly resolution 68/211 of 20 December 2013, the commitments are instrumental to identify modalities of cooperation and implement the framework. Commitments need to be specific, predictable and time-bound in order to support the development of partnerships at local, national, regional and global levels, and the implementation of local and national disaster risk management plans. All stakeholders are encouraged to publicize their commitments in support of the implementation of the framework, or of the national and local disaster risk management plans, through the UNISDR website.

F. International cooperation and global partnership

General considerations

36. Given their differential capacities, developing countries require enhanced global partnership for development, adequate provision and mobilization of all means of implementation and continued international support to reduce disaster risk.

37. Disaster-prone developing countries, in particular least developed countries, small island developing States, and landlocked developing countries, and Africa, warrant particular attention in view of their higher vulnerability and risk levels, which often greatly exceed their capacity to respond to and recover from disasters. Such vulnerability urgently requires the strengthening of international cooperation and ensuring genuine and durable

partnerships at the regional and international levels in order to support developing countries to implement this framework in accordance with their national priorities and needs.

38. Enhanced international cooperation, including North-South complemented by South-South and triangular cooperation has proved to be key to reduce disaster risk and there is a need to strengthen them further. Partnerships will play an important role by harnessing the full potential of engagement between governments at all levels, businesses, civil society and a wide range of other stakeholders, and effective instruments for mobilizing human and financial resources, expertise, technology and knowledge and can be powerful drivers for change, innovation and welfare.

39. Financing from all sources, domestic and international, public and private, the development and transfer of reliable, affordable, modern technology on mutually agreed terms, capacity-building assistance and enabling institutional and policy environments at all levels are critically important means of reducing disaster risk.

Implementation and follow-up

40. Support to countries in the implementation of this framework may require action on the following recommendations:

a) Developing countries, in particular least developed countries, small island developing States and landlocked developing countries, and Africa require predictable, adequate, sustainable and coordinated international assistance, through bilateral and multilateral channels, for the development and strengthening of their capacities, including through financial and technical assistance, and technology transfer on mutually agreed terms.

b) Enhance access to, and transfer of, environmentally sound technology, science and 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

c) Mainstream disaster risk reduction measures appropriately into multilateral and bilateral development assistance programmes, including those related to poverty reduction, natural resource management, urban development and adaptation to climate change.

d) States and regional and international organizations, including the United Nations and international financial institutions, are called upon to integrate disaster risk reduction considerations into their sustainable development policy, planning and programming at all levels.

e) States and regional and international organizations should foster greater strategic coordination among the United Nations, other international organizations, including international financial institutions, regional bodies, donor agencies and nongovernmental organizations engaged in disaster risk reduction. In the coming years, consideration should be given to ensuring the implementation and strengthening of relevant international legal instruments related to disaster risk reduction.

f) United Nations system entities, including funds, programs, and specialized agencies, through the United Nations Plan of Action on Disaster Risk Reduction for Resilience, other relevant International Organizations and treaty bodies, including the Conference of the Parties of the United Nations Framework Convention on Climate Change, international financial institutions at the global and regional levels, and the Red Cross and the Red Crescent Movement, are called upon to ensure optimum use of resources and support to developing countries, at their request, and other stakeholders in the implementation of this framework in synergy with other relevant frameworks, including

through the development and the strengthening of capacities, and clear and focused programs that support States' priorities in a balanced and sustainable manner.

g) The UNISDR, in particular, is requested to support the implementation, monitoring and review of this framework including through: preparing periodic progress reports on implementation; supporting the development of coherent global and regional monitoring mechanisms in synergy, as appropriate, with other relevant mechanisms for sustainable development and climate change, and updating the existing web-based HFA Monitor accordingly; generating evidence-based and practical guidance for implementation in close collaboration with, and through mobilization of, experts; reinforcing a culture of prevention in all stakeholders, through support to standards development by experts and technical organizations, advocacy initiatives, and dissemination of risk information, policies and practices; supporting countries, including through the national platforms or their equivalent, in developing national plans and monitoring trends and patterns in disaster risk, loss and impacts; convening the Global Platform for Disaster Risk Reduction and supporting the organization of regional platforms for disaster risk reduction; leading the revision of the United Nations Plan of Action on Disaster Risk Reduction for Resilience; facilitating the enhancement of, and continuing to service, the ISDR Scientific and Technical Advisory Group in mobilizing science and technical work on disaster risk reduction; leading and coordinating the update of 2009 Terminology on Disaster Risk Reduction; and maintaining the stakeholders' commitment registry

h) Adequate voluntary financial contributions should be provided to the United Nations Trust Fund for Disaster Reduction, in the effort to ensure adequate support for the follow-up activities to this framework. The current usage and feasibility for the expansion of this Fund, should be reviewed, inter alia, to assist disaster-prone developing countries to set up national strategies for disaster risk reduction.

i) The Inter-Parliamentary Union and other relevant regional bodies and mechanisms for parliamentarians are encouraged to continue supporting, and advocating for, disaster risk reduction and the strengthening of legal frameworks.

j) The United Cities and Local Governments and other relevant bodies of local governments are encouraged to continue supporting cooperation and mutual learning among local governments for disaster risk reduction and the implementation of this framework.

k) The implementation of this framework will be periodically reviewed by the United Nations General Assembly and the Economic and Social Commission through and in alignment with existing processes and mechanisms, such as the High Level Political Forum for Sustainable Development, to allow for stocktaking, identifying new emerging risk, formulating recommendations for further action, and introducing possible corrective measures.

Chart of the zero draft of the post-2015 framework for disaster risk reduction

Expected outcome

The substantial reduction of disaster losses, in lives, and in the social, economic and environmental assets of persons, communities and countries.

Goal

The prevention of disaster risk creation and the reduction of the existing disaster risk through economic, social, cultural and environmental measures which address exposure and vulnerability, and thus strengthens resilience.

Priorities for action

Actions will focus on local and national levels as well as on regional and international levels

Priority 1: Understanding disaster risk	Priority 2: Strengthening governance and institutions to manage disaster risk	Priority 3: Investing in economic, social, cultural and environmental resilience	Priority 4: Enhancing preparedness for effective response, and building back better in recovery and reconstruction
Policies and practices for disaster risk management should be based on a understanding of risk in all its dimensions of vulnerability, capacity and exposure of persons and assets and hazards characteristics. This requires an all-states and all-stakeholders effort on a number of areas for action, such as collection, analysis and dissemination of information and data, advancement of research, and development and sharing of open-source risk models, as well as continuous monitoring and exchange of practices and learning.	Governance conditions the effective and efficient management of disaster risk at all levels. Clear vision, plan, guidance and coordination across sectors and participation of all stakeholders, as appropriate, are required. Strengthening the governance of disaster risk management is therefore necessary.	Investing in risk prevention and reduction through structural and non-structural measures is essential to enhance the economic, social, cultural resilience of persons, communities, countries and their assets as well as the environment. Such measures are cost-effective and instrumental to save lives and prevent and reduce losses. A continued integrated focus on key development areas, such as health, education, agriculture, water, ecosystem management, housing, cultural heritage, public awareness, financial and risk transfer mechanisms, is required.	The steady growth of disaster risk, including the increase of people and assets exposure, combined with the learning from disasters, indicate the need to further strengthen preparedness for response at all levels. Disasters have demonstrated that the recovery and reconstruction phase needs to be planned ahead of the disaster and is critical to building back better and making nations and communities more resilient to disasters.

Role of stakeholders

Stakeholders play a critical role as enablers in providing support to States, in accordance with national policies, in the implementation of this framework at local, national, regional and global levels. Their commitment, goodwill, knowledge, experience and resources will be required.

Business, professional associations, private sector financial institutions and philanthropic foundations	Academia and research	Social groups, volunteers, and civil society and faith-based organizations, in particular: children, women, persons with disabilities, older persons and indigenous peoples	Media

International cooperation and global partnership

Disaster-prone developing countries, in particular least developed countries, small island developing States, and landlocked developing countries, and Africa, warrant particular attention in view of their higher vulnerability and risk levels, which often greatly exceed their capacity to respond to and recover from disasters. Such vulnerability urgently requires the strengthening of international cooperation and ensuring genuine and durable partnerships at the regional and international levels in order to support developing countries to implement this framework in accordance with their national priorities and needs.

Tokyo Conference on International Study for Disaster Risk Reduction and Resilience

---Towards a new science and technology to consolidate disaster risk reduction and sustainable development---

Date: 14th – 16th, January, 2015

Venue: Ito Hall, The University of Tokyo, Tokyo, JAPAN

Organizers: Science Council of Japan (SCJ); United Nations International Strategy for Disaster Reduction (UNISDR); Integrated Research on Disaster Risk (IRDR); and Ito International Research Center Conference, The University of Tokyo (UTokyo)

Objectives

The negative consequences of natural hazards are on the rise. Manmade factors such as population growth, poverty, urbanization, changes in land use, globalization and climate change are aggravating these consequences. The losses in human lives and in properties and other economic resources are increasing both in developed and developing countries. The progress in science & technology and economic development are not necessarily leading to substantial reduction of disaster risk. We have made progress in understanding hazards and risks both in natural and social sciences. However the fruits of these sciences seems to be underutilized, and hence the losses are increasing. Why is it that we cannot fully exploit the advanced science and technology to solve this critical issue? The science and technology community has not found the answer yet.

The 3rd World Conference on Disaster Risk Reduction (3rdWCDRR) will be held in Sendai, Japan in March 2015, and the successor arrangement of the Hyogo Framework for Action (HFA2) which will serve as the global guiding principle for the following years is expected to be adopted on this occasion. In addition, the negotiations on Sustainable Development Goals (SDGs) will be conducted in autumn 2015. Taking this opportunity, it is critically important to discuss integrated strategies for DRR based on science and technology to be embodied in HFA2 and to identify effective methods for its implementation. It is also indispensable to clarify the role of science and technology for DRR in sustainable development and include DRR strategic goals in the expected SDGs. Japan, due to geographical and geological conditions, has been tormented by natural disasters in the course of her history, and most recently hit by the Great East Japan Earthquake (GEJE) in 2011. However her people has overcome these difficulties and

based on the lessons of GEJE, the country is in the process of strengthening the societal resilience and re-establishing her land management and social infrastructure. The Japanese scientific community, in cooperation with Integrated Research on Disaster Risk (IRDR) is ready to share the lessons learnt and to illustrate a roadmap and introduce concrete examples towards integrating disaster risk reduction and sustainable development.

IRDR, which has been co-initiated by the International Council for Science (ICSU), the International Social Science Council (ISSC), and the United Nations International Strategy for Disaster Reduction (UNISDR), is a scientific challenge on natural and human-induced environmental hazard aiming at identifying better solutions for disaster prevention & mitigation and disaster preparedness. In IRDR, data and information are systematized and integrated regardless of the hazard type and beyond the academic confines, and shared across different stakeholders. Knowledge, experiences, and methods are exchanged to pursue an establishment of a methodology for a disaster risk reduction through an in-depth discussion. This is considered to be an essential step to build a resilient society and enable us to follow a sustainable development path.

Therefore, we would like to invite world leaders and top scientists to our Tokyo meeting prior to the 3rdWCDRR to discuss and formulate how the science and technology could help in disaster risk reduction and hence fostering sustainable development. The discussions will be based on the following three viewpoints.

First of all, it is highly likely that the global loss by natural disasters to increase in the future, with the economic loss predicted to rise to US$ 20 billion per year by 2030. Considering that it is vital for the sustainable development to take early action in recognition of disaster risks and build secure, healthy, wealthy and resilient nations and communities, we seek the possibilities to collaborate with the “Future Earth” in the field of earth environmental sciences, and with the Group on Earth Observations (GEO), and consolidate cooperatively a concept to contribute to the SDGs goal-setting for disaster reduction.

Secondly, to reduce disaster risks, it is necessary to implement disaster preventive measures based on scientific findings at regional, national, local, community levels and at residential neighborhoods. However real practices at any of these levels are below our expectations. We will demonstrate several tested “best practices” of disaster reduction that are based on scientific findings and simultaneously organize discussions with participants from all relevant stakeholder groups (trans-disciplinary study approach).

Thirdly, we have learned from the recovery processes after the GEJE that it is essential to take a comprehensive multi-hazards approach in order to implement effective

and efficient disaster preventive measures in our society. We would like to identify better ways of scientific collaboration for avoiding hazards being converted to disaster risks, and for upgrading disaster risk awareness to decision-making & implementation process. We would like to propose concrete initiatives to support such processes and discuss our directions for the scientific community in this regard. We will also discuss common indicators to measure our progress based on science and to drive HFA2 forward.

Bearing these viewpoints in mind, we will make proposals, as a product of the conference, for establishing close coordination between sustainable development and disaster risk reduction at all aspects of policy-making, planning and programming of infrastructure and social systems, human resources mobilization, and for creation of structures and mechanisms to implement disaster risk reduction at all levels of society, and for incubating innovative science and technology that would guide us in all phases of disaster management cycle.

Draft Agenda

Day 1 (Wednesday, 14 January, 2015)

1. Opening Ceremony 13:00-14:30

1.1 Opening Remarks

- Prof. Takashi Onishi, President, SCJ
- Ms. Margareta Wahlström, Special Representative of the Secretary-General (SRSG) for Disaster Risk Reduction
- Prof. David Johnston, Chair of IRDR Scientific Committee (SC)
- H.E. Mr. Kenichi Suganuma, Ambassador in charge of the 3rd World Conference on Disaster Risk Reduction (WCDRR)
- Prof. Junichi Hamada, President, UTokyo

1.2 Keynote Speech

- Dr. Han Seung-Soo, UN Special Envoy for Disaster Risk Reduction and Water, UN Special Envoy on Climate Change
- Prof. Gordon McBean, President, International Council for Science (ICSU)

(Coffee break 14:30-14:50)

2. High Level Panel Session 14:50-16:50

2.1 Organizing Committee Report

Prof. Takashi Onishi, President, SCJ

2.2 High Level Panel

Moderator:

- Ms. Margareta Wahlström, SRSG for Disaster Risk Reduction

Panelist:

- Prof. David Johnston, Chair, IRDR SC
- Representatives of International Social Science Council (ISSC)
- Mr. Rolf Alter, Organisation for Economic Co-operation and Development (OECD)
- Prof. Dennis Wenger, Chair of UNISDR Scientific and Technical Advisory Group (STAG)
- WMO representative
- UNESCO representative
- EU representative
- Representatives of National Countries in Asia

- Dr. Ede Ijjasz-Vasquez, World Bank
- ADB representative
- Prof. Akihiko Tanaka, President, JICA (Japan International Cooperation Agency)
  Mr. Kiyoshi Higuchi, President, IAF (International Astronautical Federation) / Senior Vice President, JAXA (Japan Aerospace Exploration Agency)

(Coffee break 16:50-17:10)

3 Session on Recovery from Great East Japan Earthquake (GEJE) and Tsunami 17:10-18:10

- Prof. Makoto Iokibe, Chair, GEJE Reconstruction Conference
- Prof. Masako Yoneda, Member, Science Council of Japan, Academic Society Liaison Association Corresponding to the Great East Japan Earthquake, Keio University

Reception 18:30-20:30

Day 2 (Thursday, 15 January, 2015)

AM:

4. Session on Coordination with Environmental and Health Activities
-towards green growth and sustainable development (*by invited speakers*)

5. Poster Introduction Session

PM:

6. Session on Trans-Disciplinary Study Approach for Disaster Risk Reduction
-towards achieving resilience (*by invited speakers*)

7. Session on Inter-Disciplinary Study Approach for Disaster Risk Reduction
-towards driving risk management (*by invited speakers*)

8. Poster View Session

Day 3 (Friday, 16 January)

AM:

9. Panel Discussion on "Tokyo Recommendation"

10. Closing Session

- Representative of Cabinet Office, Government of Japan

PM:

Excursion: (Tokyo Rinkai Disaster Prevention Park, Ariake)

International Organizing Committee

Chair

Takashi Onishi, President, Science Council of Japan

Local Organizing Committee

Co-chairs

Toshio Koike, Professor, The University of Tokyo

Fumiko Kasuga, Vice-President, Science Council of Japan
Director, National Institute of Health Sciences

Members

Yusuke Amano, Division Head, Ministry of Land, Infrastructure, Transport and Tourism

Hiroyuki Fujiwara, Director, National Research Institute for Earth Science and Disaster Prevention

Shigeko Haruyama, Professor, Mie University

Haruo Hayashi, Professor, Kyoto University

Fumihiko Imamura, Professor, Tohoku University

Akiyuki Kawasaki, Project Associate Professor, The University of Tokyo

Kenzo Hiroki, Division Head, Ministry of Land, Infrastructure, Transport and Tourism

Ryota Koyama, Associate Professor, Fukushima University

Hiroko Minami, President, University of Kochi

Satoru Nishikawa, Vice-President, Japan Water Agency

Junko Obata, Professor, Sophia University

Yuichi Ono, Professor, Tohoku University

Kaoru Saito, Counsellor, Cabinet Office, Government of Japan

Kenji Satake, Professor, The University of Tokyo

Kuniyoshi Takeuchi, Director, International Centre for Water Hazard and Risk Management

Kennichi Tsukahara, Professor, Kyushu University

Mitsuo Yamakawa, Professor, Teikyo University

Masako Yoneda, Project Professor, Keio University

Important Date:

Closing date for Poster Abstracts submission: 15th October 2014

Closing date for Online Registration: 30th November 2014

Conference Web Site:

http://monsoon.t.u-tokyo.ac.jp/AWCI/TokyoConf/en/

Tokyo Statement (Draft Bullet Proposal: 23/06/2014)
-Towards a new science and technology to consolidate disaster risk reduction and sustainable development-

1. Our assessment of the present status

- Manmade factors such as globalization, population growth, poverty, urbanization and changes in land use are aggravating negative consequences of natural hazards. The losses are increasing in both developed and developing countries.
- In this inter-connected world, the impact of an event immediately crosses borders and can lead to cascading consequences, even to geographically remote areas.
- Although we have increased scientific knowledge and technology, we have not been successful in demonstrating concrete methodologies for disaster risk reduction and in convincing those who are not familiar with disaster risk.
- In pursuit of human security, we need to consolidate disaster risk reduction and sustainable development.

2. Our key directions for addressing problems through solidarity towards building resilience

- Policy-makers and practitioners should be fully aware of the latest scientific knowledge on disasters, and be capable of utilizing those scientific findings.
- National platforms should be empowered as focal fora to incorporate science and technology into real practice.
- Science should play an important role in disaster risk reduction by developing collaborative frameworks with Earth environmental sciences and global Earth observations, thus promoting inter- and trans-disciplinary approaches for human well-being.
- National and local governments should improve their preparedness for better response and better recovery of households and communities.

3. Our findings and recommendation

- We need to adopt a common methodology on data collection and economic analysis of disasters which can be practiced by national platforms to realize evidence-based policy making on disaster risk reduction to be practiced globally.
- We need to enhance numerical pre-assessments of damage by various hazards based on inter-disciplinary knowledge to formulate preventive policies and strategies
- We need to fully share these valuable “best practices” of disaster risk reduction that are based on scientific findings.

4. Our proposals for concrete initiatives to be taken in cooperation with national and international stakeholders

- Governments need to empower national platforms so that they can practice evidence-based disaster risk reduction for sustainable development
- The science community needs to enhance forecasting and visualization capabilities of new risks and their potential social impacts in order to prevent further disasters due to intensification of hazards.
- The disaster management community and the Earth observation community need to collaboratively enhance their capability to monitor existing risks and their social impacts and to mitigate disasters due to augmentation of vulnerabilities.
- IRDR and Future Earth need to bring practitioners and researchers together in collaborative efforts to improve disaster resilience.
- The international community needs to set up a process of encouraging existing and future programs and initiatives to create research networks and practices for promoting evidence-based disaster risk reduction for sustainable development.