

12th APRU Multi-Hazards Symposium:

KYOTO DECLARATION 2016

on

Role of Science and Technology in the
Sendai Framework for Disaster Risk
Reduction

8th March 2016, Kyoto, JAPAN

Context

- A two day symposium was organized in Kyoto University with the participation from 92 number of people
- The symposium had three key note speeches, eight parallel sessions, and two plenary sessions
- There were 46 numbers of papers presented in two days
- Structure and discussion in the symposium were guided by four priority areas of the Sendai Framework for Disaster Risk Reduction (SFDRR)
- Discussion was also made on multi stakeholder partnerships
- Following is the key summary of the symposium presentations and discussion

SFDRR Priority 1: Understanding disaster risk

Possible to pursue within traditional role of science and technology:

1. Simplify the technology for all stakeholders' use
2. Develop system for transferring **trustful** disaster information
3. Assess data on economic losses/damages

Require partnership and extra efforts to achieve:

1. Conduct **participatory** risk assessment with involvement of community, local government and **scientists**
2. Enhance collaboration between different stakeholders in **designing and developing** projects.
3. Support to raise local people's awareness toward disaster, disaster risk and DRR
4. Incorporate climate change issues into the SFDRR implementation

SFDRR Priority 2: Strengthening disaster risk governance to manage disaster risk

Possible to pursue within traditional role of science and technology:

1. Science community to **verify data credibility** and help reducing a gap between the data from reports and governments' action
2. **Quantify** the level of risk and level of exposure to the risk in the community

Require partnership and extra efforts to achieve:

1. Sensitize related government agencies for **resilient constructions and other development schemes** in urban and rural areas for resilient communities.
2. Strengthen **engagement of science in national coordination mechanisms** or platform for DRR
3. Review whether information matches **local level needs** and it is useful for decision making. Link Science and Technology **with practices and policies**
4. Enhance risk perception of stakeholders

SFDRR Priority 3: Investing in disaster risk reduction for resilience

Possible to pursue within traditional role of science and technology:

1. Contribute to reducing exposure and risk in urban centers
2. Make better link of DRR research with other disciplines in line with the linkage **between the SFDRR and the SDGs**
3. Assemble facts on measurable impacts on climate change and conduct comprehensive analysis
4. Promote **evidence based studied** on private sector risk insurance
5. Involve scientists and utilize **innovative technology** such as space application **in disaster damage and loss assessment**

Require partnership and extra efforts to achieve:

1. Assist in developing **community based** risk mapping
2. Review **roles of vulnerable population**, including the aged one, as they might have good potential in increasing disaster resilience.
3. Universities, particularly local institutions, to deliver research outcomes to **local policy makers and communities** in an **understandable manner**.

SFDRR Priority 4: Enhancing disaster preparedness for effective response and to Build Back Better in recovery, rehabilitation and reconstruction

Possible to pursue within traditional role of science and technology

1. Develop visual/image notification for pre-disaster evacuation for the **lesser developed countries** having literacy problems.
2. Develop **innovative public emergency services** to reach isolated areas

Require partnership and extra efforts to achieve:

1. Assist in enhancing dialogue and collaboration among communities and between communities and local governments
2. Contribute to strengthening disaster education by supporting enhancement of school-community linkage and teachers' training
3. Strengthen **risk communication to the community**
4. Invest social capital in the process of recovery.
5. Decentralize post disaster reconstruction to ensure complete involvement for a safe, sustainable and culturally suitable built-environment.

Priority Actions: Promoting Science based decision making

- Develop **partnership, dialogue and close communication** with various stakeholders to bridge a gap between policy makers and scientific community. Integrate **local decision making** into national policy
- Create opportunities such as seminars and symposium to **share data and research results** with governments and policy makers.
- Enhance **targeted information** for decision making on land use to strengthen urban resilience, legal framework for building code, early warning and evacuation system
- Make available disaster risk and impact **data as well as scientists involvement** for making evidence based decision-making and policy.
- Science and Technology based **training for the personnel** to make them enable for science based decision-making and action
- Require **accurate and dependable disaster damage and loss data** for researchers as well as policy makers in DRR and recovery
- Establish research capacities in **less developed countries** for a better understanding of local/traditional building technologies
- Regional entity to identify **a few role models of S&T in decision making** and share them widely
- Make **open access disaster information** at local and national level before, during and after disasters for research planning and action

Priority Actions: Investment in Science and Technology

- Prove research results based on science and technology can be **practical and useful** to strengthen DRR capacity
- Require further investment of **human resource, budget, technology** from both **government as well as private foundations** before disasters
- Share good practices with **low cost and available technique**
- Ensure **private sector and civil society engagements** in DRR to innovate DRR measures and develop common terminology
- Need participation and fostering of **young researchers**
- Promote **disaster risk assessment** for awareness raising as the first step of DRR
- Invest to research innovation for **creating science based data base for DRR**
- Regional entity / mechanisms to support capacities and **link of scientific community to DRR related ministries**
- Define **elements of Build Back Better** and conduct case studies on major disasters to prove Build Back Better works.
- Assist national and local governments in developing **disaster damage and loss data**

Priority Actions: Linking Science to People

- Actively organize events for public for awareness raising and learning opportunities especially on simplified technologies based on the latest science and technology, risk identification, post needs assessment, low cost science
- Promote community participation in all the disaster management phases (i.e., community based early warning).
- Regular and routine communication between scientist, community-based organizations, local NGOs and the community to interpret S&T
- Capitalized on existing education systems to make student as an agent of change.
- Apply indigenous knowledge (both structural and nonstructural forms) with proper scientific validation and evolve the role cultural heritage for disaster risk reduction and response
- Conduct capacity development of engineers and scientist for the local context
- Develop mechanism for funding research which is linked with the local development in DRR governance context
- Promote utilization of SMS in case of emergency and for risk communication such as Facebook, Twitter, and so on
- Local and national universities to develop a systematic linkage among local media, government, and communities.

Participants agreed on and committed to:

1. Strengthen capacities of scientific community through fostering young researchers and encouraging multi-disciplinary / trans-disciplinary implementation research
2. Continue our support to S-T innovations to be included into national policy / decision making on DRR
3. Foster greater collaboration with local institutions and local governments for S-T based decision making
4. Learn from the experiences of good practices in the regional and to foster further collaboration with various stakeholders
5. Contribute to organizing/supporting periodic Science and Technology conferences/events on DRR at national/regional levels.