IMPLEMENTATION STRATEGIES FOR APPLICATION OF RESEARCH & DEVELOPMENT ON DISASTER REDUCTION

A Proposed Thematic Session in the
World Conference on Disaster Reduction (WCDR) KOBE
Thematic Cluster 3: Knowledge Management and Education

Organized by:

Ministry of Education, Sports, Culture, Science and Technology, Government of Japan (MEXT)

In cooperation with:

National Research Institute for Earth Science and Disaster Prevention, Japan (NIED)
World Seismic Safety Initiative (WSSI)
International Institute for Applied Systems Analysis (IIASA)
United Nations Education, Science and Culture Organization (UNESCO)

1. Background

Natural disasters are constant threats for both developing and developed countries. It is well accepted that while we cannot reduce the natural hazards, appropriate interventions can reduce risk and vulnerability of natural disasters. In both developed and developing countries, tremendous efforts on the research and development have been exercised. However, recent disasters examples, including that of the Great Hanshin Awaji Earthquake of Kobe of 1995, pointed out that only research development (R&D) for disaster reduction is not effective, as long as these are not implemented, and used in practice. Thus, there is an urgent need to focus on how to effectively bring the results of research and developments (R&D) on disaster reduction into practice. For this, certain strategies and involvement are essential, which are termed as "**Implementation Strategy**" and "**Stakeholder Involvement**". The proposed session will discuss how to incorporate these concepts in R&D activities, innovation of research communities, and relevant science policy issues. On this basis strategic orientations will be clarified for effective international collaboration in disaster reduction R&D.

2. Thematic Session

2.1 Implementation Strategies for R&D on Disaster Reduction

Implementation Strategies for R&D can be defined as follow:

(1) Researchers' originality remains essential element.
(2) Problem identification and methodology development should involve direct communication with stakeholders and the end-users.
(3) It is essential that stakeholders will have recognition and ownership toward the research outputs that they have participated in the process of developments.
(4) Regional characteristic should be properly incorporated, so that the technologies suit the local context in terms of available materials, cost and workmanship.

(5) Proper quality control of R&D should be maintained, so that most advanced research methodologies and processes are mobilized to generate high-quality products, and meet the actual demands of the region.
(6) Implementation strategies should be discussed substantially in the planning stage of R&D projects.

The reality tells that even developed countries that have accomplished high standard of disaster reduction technologies also suffer from severe disasters. Based on the past experiences in both developed and developing countries, following important and relevant lessons can be learned:

(1) A huge gap between the high technological caliber and level of social safety should be recognized.
(2) An effective mechanism is needed for application of research outputs to practice.
(3) The research & development programs should incorporate "implementation strategies" within themselves. Innovation of researchers and research communities is needed.
(4) Science policy should be discussed from the viewpoint of implementation strategies.
(5) The above issue is a common agenda for both developed and developing countries. Therefore, it should be one of the key factors in the international collaboration.

2.2 Agenda and Structure of the Thematic Session

The proposed Thematic Session has two specific objectives:

1) Highlight best practice and roadmap to future collaboration, and
2) List useful and implementation-oriented disaster reduction technologies

Under the Objective 1, specific activities are:

- Highlight pertinent activities.
- Identify common recognition and specific challenges.
- Develop a roadmap on proposed actions and international collaboration.

Under Objective 2, specific activities include:

- Proposal for compilation of R&D outputs incorporating implementation strategies
- Japanese list will be presented as a typical contribution (MEXT Working Group)
- Discussion for developing a World List

The proposed session will be 2.5 hours (150 minutes) duration. Following is the tentative session structure:

Welcome Address from the Chairperson: Tsuneo Katayama, NIED 5 minutes
Opening Address: Vice Minister, Ministry of Education, Sports, Culture, Science and Technology, Government of Japan 10 minutes
Best Practice Presentations: (10 minutes each) 30 minutes
Hiroyuki Kameda, NIED
Haresh Shah, WSSI
Joanne Linnerooth-Bayer, IIASA
Panel Discussion: 105 minutes
Moderator: Hiroyuki Kameda, NIED
Rapporteur: Rajib Shaw, Kyoto University
Panelists:
- Ministry of Education, Sports, Culture, Science and Technology, Government of Japan (*MEXT implementation projects and policies*)

- Ministry of Science and Technology, People's Republic of China (*Science and technology policies*)[1]
- Former Mayor of Duzge City, Turkey (*Emergency management information technology implementation in post-disaster management*)
- Mayor of Marikina City, Philippines (*Disaster planning process and implementation of technology*) [1]
- Japan Association for Disaster Medicine *(Technical issues of disaster medicine and implementation)*
- UNESCO representative (*International science policy for implementation of disaster reduction technologies*)

About the Organizers

1) MEXT, Government of Japan: MEXT has taken a leadership role in the pro-active R&D in the field of disaster reduction through special projects and initiatives over last several years. The most prominent ones are: establishment of the Earthquake Disaster Management Research Center (EDM), initiation of the multi-national, multi-stakeholder, implementation-oriented project called EqTAP (*E*arth*q*uake and *T*sunami Disaster Mitigation Technologies and their Integration to the *A*sia-*P*acific Region) and establishment of the World's largest 3-D shaking table. MEXT is committed to continue its support in incorporating implementation strategies in the R&D in its future endeavors.

2) NIED: NIED was originally national research institute, and has recently become independent research organization. NIED conducts frontier research in the field of disaster reduction with direct involvement of the stakeholders in different parts of the world. NIED has supervised and implemented the EqTAP project, with one of its research center called EDM. NIED is also in-charge of the World's largest 3-D shake table, and is committed to conduct implementation-based research in future.

3) WSSI: WSSI is a non-profit body, affiliated with the International Association of Earthquake Engineering (IAEE). WSSI consists of the leading professionals in the field of earthquake engineering. WSSI has conducted High Level Meetings (HLM) in different developing countries to influence national government policies and strategies on disaster reduction. WSSI created several networks of professionals to implement the technologies, and to share it with wider stakeholders. WSSI is committed to further progress with goal of bridging the gap between knowledge and practice.

4) IIASA: IIASA is implementation-based inter-governmental center, based in Austria. IIASA has a strong wing on risk assessment and modeling, and has conducted pioneering research in different fields targeting practical problems and issues. IIASA is committed to work with its member countries to reduce the disaster risks in the respective countries.

5) UNESCO: UNESCO Section for Disaster Reduction has been active in the field of education and research targeting different hazards, and worked closely with the wider stakeholders, including professionals, governments and non-governments, and academic institutions. UNESCO is committed to bring forward the momentum of the pro-active, implementation-based R&D on disaster reduction.

[1] Under negotiation