



**KOBE REPORT draft**  
**Report of Session 3.6, Thematic Cluster 3**

**Implementation Strategies for Application of Research and  
Development on Disaster Reduction**

**1. Summary of the Session's Presentations and Discussions**

The Session was organized by the Ministry of Education, Sports, Culture, Science and Technology (MEXT), Government of Japan 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), and The Regional Disaster Information Centre, Latin America and the Caribbean (CRID).

The subject was how to make R&D activities truly useful for actual disaster reduction. The key issues are to incorporate "Implementation Strategies" and "Stakeholder Involvements" within the framework of planning and execution of research and developments projects. We need innovation of research community, and science policies should be enhanced to support such changes.

Following is the framework of discussion and outcomes at Thematic Session 3.6. A draft of this document was distributed to participants at the Session. It was elaborated during the panel discussion by making necessary amendments, and was endorsed by the participants.

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 (R&D) have been exercised. However, recent experiences, including that of the Great Hanshin Awaji (Kobe) Earthquake Disaster of 1995, demonstrated that only research development 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 R&D on disaster reduction should be conducted so that their results will be effectively brought into practice. For this, certain strategies and involvement are essential, which are termed as "Implementation Strategies" and "Stakeholder Involvement".

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 should be learned:

- 1) A huge gap between the high technological calibre 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 enhanced from the viewpoint of implementation strategies.
- 5) The above issue is a common agenda for both developed and developing countries. Therefore, it should be a key factor in the international collaboration.

The Session was focused on how effectively to bring results of R&D on disaster reduction into practice. It was emphasized that "Implementation Strategy" and "Stakeholder Involvement" should be incorporated in R&D planning and activities. Discussion was conducted on how to realize these concepts in R&D, innovate research communities, and enhance relevant science policies. Development of an implementation oriented disaster reduction technology list was also proposed as a practical action. On this basis, strategic

orientations was clarified and action plans proposed for effective international collaboration in disaster reduction R&D.

After the opening remarks from Dr. Katayama of NIED (Session Chair), and Dr. Erdelen of UNESCO, three best practices examples were presented.

Dr. Kameda presented the experiences of EqTAP project. The EqTAP Project was conducted as a multi-lateral research project for earthquake and tsunami disaster mitigation in the Asia-Pacific region. The abbreviation EqTAP stands for "Development of Earthquake and Tsunami Disaster Mitigation Technologies and Their Integration for the Asia-Pacific Region." A policy background of the EqTAP project is based on a series of discussion in APEC (Asia-Pacific Economic Cooperation) meetings to promote multi-lateral projects for disaster mitigation. The project is recognized as part of Japan's contribution to the continuing efforts on the subject matter within the APEC framework. With this background, the geographical areas covered by the project were focused on the APEC regions. 13 Japanese institutions conducted joint research in cooperation with counterpart organizations from 13 APEC economies.

Dr. Shah presented on the activities of the WSSI (World Seismic Safety Initiative), which focused on the risk mitigation actions through high level policy meeting in different countries, as well as implementing risk reduction activities. Through its 10 years of activities, WSSI could produce several best practices examples in Nepal, Uganda, Myanmar, which are regarded as models of innovative risk reduction activities.

Dr. Bayer stated that the aim of action-oriented research is to directly influence individual or social actions, or to affect policy at the individual or social levels. A prerequisite for successfully meeting this aim is orienting research to the needs of the policy community, which means directly or indirectly involving all who are affected, that is, the stakeholders. Recent experience of stakeholder participation in action-oriented research has shown the importance of stakeholder involvement in *all stages* of the research-for-policy process: framing the issues to be researched, designing the research agenda, evaluating the evidence, and communicating and making use of the research results.

In the second part of presentation, Mr. Nakamura of MEXT of GOJ and Dr. Arai of EDM/NIED presented the Disaster Reduction Technology List on Implementation Strategies. The list is a compilation of disaster reduction technology developed under Japanese leadership, which focuses on two specific issues: implementation strategy and multi-stakeholder.

After the presentation, a panel discussion (Moderator: Dr. Hiroyuki Kameda) was organized focusing on the implementation issues and linking research and action. Dr. Wang of China presented his views on the role of IT on disaster reduction activities, Ms. Ma. Lourdes C. Fernando, Mayor of Marikina City of the Philippines demonstrated local government activities, and its link to the research initiatives, and Dr. Zervaas presented some examples of socializing research and expertise in Central America. General discussion followed to elaborate the proposed outcomes from the Session.

Finally, the activities conducted in the Session were outlined by Prof. Rajib Shaw (Rapporteur).

## **2. Primary Issues**

- (1) Researchers' originality remains essential element.
- (2) Problem identification and methodology development should involve direct communication with stakeholders and 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.

## **3. a) Suggested targets and indicators to measure accomplishments**

- (1) Develop guidelines for implementation oriented R&D policy and planning
  - Conceptual and action-based enhancement of "implementation strategies" - an important role of research community: pursue an arena to "implementation science"

- Proposal to funding agencies to incorporate implementation strategies in their decision criteria
- (2) Develop a catalogue and a database of knowledge and technologies for disaster reduction where implementation strategies are solidly incorporated
- Carefully selected sets of disaster reduction technologies will be useful to practical disaster reduction activities
  - They should include both engineering based technologies as well as institutional based technologies
  - Disaster Reduction Technology List on Implementation Strategies" compiled by Japanese WG and presented during Thematic Session 3.6 will be a good first step to start with.
  - Its extension to a "World List" is highly appropriate and strongly proposed.
- (3) Development of a strategic roadmap by combining contributions from member countries
- We should launch activities to substantiate the proposals in (1) and (2).
  - We need to establish a network of member countries who are interested in joining them. Many existing international networks, organizational as well as personal, may be utilized.
  - Solicit inputs from member countries, on which basis a strategic roadmap should be drawn to lead to next action.
- (4) Proposal for inter-governmental policy meetings
- As the step (3) progresses, inter-governmental meetings should be organized where how to enhance science policies for disaster reduction under implementation strategies.
  - Their outputs will be fed back to international actions including boosting activities described in items (1) and (2).

### **3. b) Existing indicators with reference**

N/A

### **4. Partnerships**

**Name:** Science Policy Initiative for Implementation Strategies

**Proposed by:** MEXT (GOJ), NIED, DPRI, UNESCO, ISDR and Other agencies

**Contents:** The initiative will focus on policy enhancement and necessary actions to effectively utilize R&D results into disaster reduction practices. For this purpose, implementation strategies and stakeholder involvement will be incorporated in research planning and execution. Action plan will include development of a world list of implementation oriented technologies for disaster reduction.

### **5. Any other relevant and brief comments**

Please refer to hand-outs and Disaster Reduction Technology List.

### **6. a) Name, affiliation and contacts of presenters and titles of presentations**

See Attachment 2 (title of presentation) and 3 (contact details)

### **6. b) Name, affiliation and contact of person filling in the form**

Rajib Shaw, Associate Professor, Graduate School of Global Environmental Studies  
KYOTO UNIVERSITY, Yoshida Honmachi, Sakyo-ku, Kyoto 606-8501, JAPAN

Tel/ Fax: 81-75-753-5708 (Direct) Fax (Office): 81-75-753-9187

## Attachment –1

- 0. Chairman's Introduction Tsuneo Katayama, NIED
- 1. Opening Remarks Walter Erdelen, UNESCO
- 2. Best Practice Presentations (from researchers' side)
  - 2-1 EqTAP - Research Innovation under Implementation Strategies  
Hiroyuki Kameda, NIED
  - 2-2 WSSI Activities - Connect the "Last Mile" Haresh Shah, WSSI
  - 2-3 A Research-based Stakeholder Process for Flood Risk Management  
Joanne Linnerooth-Bayer, IIASA
- 3. Introduction to the Disaster Reduction Technology List on Implementation Strategies
  - 3.1 Disaster Reduction Technology List on Implementation Strategies  
Takayuki Nakamura, MEXT (GOJ)
  - 3.2 Contents of Disaster Reduction Technology List Hiroshi Arai, EDM-NIED
- 4. Panel Discussion (comments from stakeholders' side)
  - 4.1 To Push for Wider Application and Dissemination of Information Technology  
in line with Practical Needs in Disaster Reduction  
Wang Zhengyao, Ministry of Civil Affairs (GOC)
  - 4.2 Marikina Safety Program Its Benefits and Implementation  
Ma. Lourdes C. Fernando, City Mayor
  - 4.3 Let Knowledge be Known: Some Examples of Socializing Research and Expertise  
in Central America  
Dave Paul Zervaas, CRID

## Attachment –2

### Participants List:

1. **Tsuneo Katayama**, President, National Research Institute for Earth Science and Disaster Prevention (NIED) 3-1 Tennodai, Tsukuba Science City, 305-0006, Japan
2. **Walter Erdelen**, Assistant Director-General for Natural Sciences, UNESCO
3. **Hiroyuki Kameda**, Professor Emeritus, Kyoto University/ Visiting Researcher, National Research Institute for Earth Science and Disaster Prevention (NIED)/ EqTAP PI, EDM-NIED, 1-5-2 Wakinohama, Chuo-ku, Kobe, Hyogo 651-0073, Japan, [kameda@bosai.go.jp](mailto:kameda@bosai.go.jp)
4. **Haresh Shah**, WSSI, [HareshS@riskinc.com](mailto:HareshS@riskinc.com)
5. **Joanne Linnerooth-Bayer**, Program Leader, Risk, Modeling and Society, International Institute of Applied Systems Analysis (IIASA), Laxenburg, Austria , [bayer@iiasa.ac.at](mailto:bayer@iiasa.ac.at)
6. **Takayuki NAKAMURA**, Director, Office for Disaster Reduction Research, Research and Development BureauMinistry of Education, Culture, Sports, Science and Technology (MEXT) JAPAN
7. **Hiroshi Arai**, EDM-NIED, ([aria@edm.bosai.go.jp](mailto:aria@edm.bosai.go.jp))
8. **Wang Zhengyao**, National Disaster Reduction Center of China, The Ministry of Civil Affairs of the People's Republic of China, No. 7 Baiguang Road, Xuanwu District, Beijing 100053, P. R. China, [wzhy@cndr.gov.cn](mailto:wzhy@cndr.gov.cn)
9. **Ma. Lourdes C. Fernando**, Mayor, the City of Marikina, Metro Manila, Philippines, [mcf@marikina.gov.ph](mailto:mcf@marikina.gov.ph)
10. **Dave Paul Zervaas**, General Coordinator, Regional Disaster Information Center for Latin America and the Caribbean (FUNDACRID/CRID), Apdo. 1455-1011, Y Griega, San José, Costa Rica, [dave.zervaas@crid.or.cr](mailto:dave.zervaas@crid.or.cr)
11. **Rajib Shaw**, Associate Professor, Graduate School of Global Environmental Studies, KYOTO UNIVERSITY, Yoshida Honmachi, Sakyo-ku, Kyoto 606-8501, JAPAN, Tel/ Fax: 81-75-753-5708 (Direct) Fax (Office): 81-75-753-9187