



Outline

Research Center for Disaster Mitigation, under the coordination of Institute for Research and Community Service – Institute of Technology Bandung, was established since 2003 with the name of Research Group on Disaster Mitigation and then changed into Center for Disaster Mitigation (in 2005) before its current name. The change of name in 2011 brought wider authority and responsibility.

The missions of RCDM ITB now are to enhance fundamental and applied research activities, which are able to anticipate, respond to and mitigate the disaster risk; to promote fundamental and applied research results that can strengthen the policy development in disaster management in order to achieve sustainable development; and to support the formation of disaster mitigation expert-communities in Indonesia through education.

Research Area:

RCDM ITB is a multidiscipline area. Many experts from many expertise, such as seismology, active tectonic, tsunami, infrastructure, geodesy, geology, volcanology, disaster management, regional policy, technology failures, and disaster instrument, which is represented by board of researcher. Besides, the center is also supported by Advisory Board, which consisting of respected head of several institutions related with disaster mitigation.

As part of university, the research implemented by RCDM ITB are focused in three main tasks, i.e. education, research and community services through community-based disaster mitigation activities to increase the awareness of community.

Features of Research:

Collaborative short course on disaster management with Kyoto University and ASEAN Alliance University and Graduate Research on Earthquake and Active Tectonic ITB is part of research activities that support the education scheme.

As supporting to research scheme, many researches to develop disaster risk map and model has been carried out to support the government policy. For example, the development of New Seismic Hazard Map of Indonesia 2010 (Figure 1), the development of National Standards for Earthquake Resistance Building and Bridge Design, the development of Earthquake Microzonation for Mega Cities in Indonesia 2011-2014, the development of Probabilistic, Deterministic, Maximum Considered Earthquake (MCE), and Risk-Adjusted Maximum Considered Earthquake (MCER) Maps for Design of Earthquake Resistance Infrastructures in Indonesia, the research in developing capacity and fragility functions for housing, the development of Earthquake Fatality and Building-Damage Model, the development of RADIUS (Risk Assessment Tools for Diagnostic of Urban Areas Against Seismic Disaster), the development of Logic Model for Disaster Risk Reduction Policy Analysis, the investigation on the Interaction of Tectonic Strain Toward Volcanic Activity and Its Implications for Disaster Mitigation, the development of economic Losses Mapping Due To Land Subsidence, the investigation on the Building Vulnerability as input to Earthquake Risk Map, the development of Tsunami Modeling, the development of Hazard and Risk Analysis (Earthquake, Flood, Landslide, Tsunami, Volcano), and the investigation on Mainstreaming DRM Into Urban Management.

Community-based disaster mitigation, capacity building for schools, retrofitting school building, drill for preparedness, training for increasing teacher and government staff awareness toward disaster, are examples of action research activities implemented by the Center to meet the community service scheme of university, as shown in Figure 2.

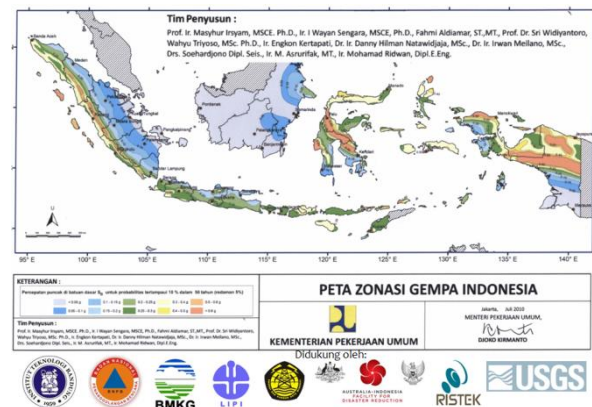


Figure 1. New Seismic Hazard Map of Indonesia 2010



Figure 2.
Examples of
Action Research
for Community Service

Research Achievements and Challenges

Achievement

RCDM ITB has several achievements through conducting the program in education, research and community services.

In education, RCDM has been collaborated with Graduate Research on Earthquake and Active Tectonic ITB (GREAT ITB) in establishing earthquake and active tectonic program study since 2011. Until the year of 2013, this program has received 23 master students and 8 doctoral students and currently has graduating 16 master students. RCDM has also collaboration with ASEAN Alliance Universities and Kyoto University in the program of Consortium of International Human Resource Development for Construction of Disaster Resilient Countries. This program covered three of scope of works i.e. Development of education program focusing on Disaster Risk Mitigation/Recovery/Reconstruction among ASEAN Alliance Universities, ASALUs and Kyoto University; Promoting student exchange program for Master students accredited mutually among ASALUs and Kyoto University to obtain experience in disaster recovery/reconstruction; Promoting exchange program for young faculties among ASALUs and Kyoto University. There were 5 lecturers and 6 master students, which were involved in DRC symposium and DRC course in Bangkok and Japan. Also it has been conducted distance learning program through video conference with Kyoto University and 5 universities in South East Asia.

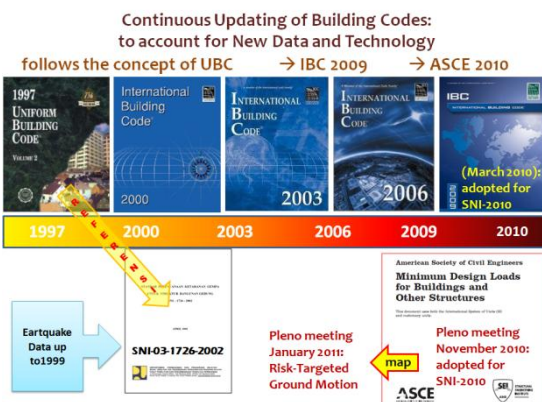


Figure 3. Updating Building Codes

RADIUS (Risk Assessment Tools for Diagnostic of Urban Areas Against Seismic Disaster), Logic Model for Disaster Risk Reduction Policy Analysis, the Interaction of Tectonic Strain Toward Volcanic Activity and Its Implications for Disaster Mitigation, Economic Losses Mapping Due To Land Subsidence, Building Vulnerability as input to Earthquake Risk Map, Tsunami Modeling, Hazard and Risk Analysis (Earthquake, Flood, Landslide, Tsunami, Volcano), DRR that is mainstreamed into Urban Management. The result of those researches has provided several models on disaster risk reduction and becoming input to the government at local and national level in applying disaster management policy, one of the examples is supporting the Indonesian government to revise national standards/codes for building and infrastructures. They were also scientifically published in journals and conference/seminar proceedings at national and international level.

Inline with the university scheme of community services, RCDM has been conducting action research been serving the community trough stimulating, educating, and facilitating related institutions and communities in the national and regional level in order to achieve comprehensive disaster risk mitigation, information dissemination and transferring the knowledge and technical skills. Several activities has been implementing in the form of development of disaster material for public awareness, conducting training (TOT), seminars and workshops for increasing community awareness and capacity, conducting Community Based Disaster Risk Management, conducting Tsunami Drill, Etc.

All RCDM output and products are achievement for RCDM and support in increasing credibility of RCDM and

In research scheme, RCDM has achieved in promoting and strengthening innovative fundamental and applied research activities in disaster mitigation. As mentioned previously in the outline, there are several research activities that has been implemented by RCDM ITB, which has resulted following outputs New Indonesian Seismic Hazard Map 2010, National Standards for Earthquake Resistance Building and bridge Design (with Dept. of Public Work) (Figure 3), Earthquake Microzonation for Mega Cities in Indonesia 2011-2014 (Figure 4), Probabilistic, Deterministic, Maximum Considered Earthquake (MCE), and Risk-Adjusted Maximum Considered Earthquake (MCER) Maps for Design of Earthquake Resistance Infrastructures in Indonesia, developed capacity and fragility functions for housing, Earthquake Fatality and Building-Damage Model,

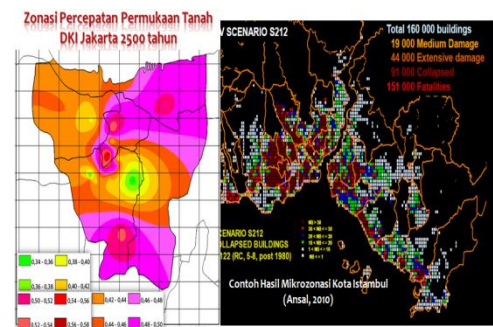


Figure 4. Seismic Microzonation for DKI Jakarta

obtaining trust from various institutions in both national and international level. These achievement would be expected to make RCDM sustain and obtain more supports from ITB and various national and international institutions/organizations.

Challenge

One main challenge for our center in conducting the research is the availability of data and information, and different data and information that is provided by different institution. Data and information is important as a part of research analysis to produce the result of research that may describe at least nearly to the actual condition and it could be used as input in policy development. To overcome the limitation of data, most researches conduct primary data collection as well as use proxy data.

Other challenge is political situation in both internal and external institution. Political situation will affect the implementation of research. Different leader will create different policy, especially to the development policy. The policy may increase or decrease the vulnerability. If the leader does not have willingness and sense to the disaster management and disaster mitigation, it will not become their priority. Then, the researcher should work harder to implement the disaster-related research as well as to advocate the government to mainstream the disaster mitigation, which is based on the result of research, into development program and to use the result of research as input in disaster-friendly government policy.

The increasing of vulnerability as mentioned in the previous paragraph will also increase the risk toward certain disaster. Therefore, it is important to conduct a research on disaster management in a sustainable way due to the change of current situation of hazard, vulnerability, and capacity. Sustainability of research implementation is another challenge faced by our research center. There are many factors contribute in sustainability of research implementation, ones of them are human resources, research facilities and infrastructure, and also funding.

As researcher, it is important and very useful if the result of research can be understood and accepted both by government and communication. The problem is the language used by researcher often different from that is used by government and community. So, another challenge faced by the research center is how to translate a result of research into the language that can be easily understood by the government and community.

Another challenge is how to reach more disciplines to involve in the disaster management research. Disaster management has been developed as a new discipline, but it cannot be separated from other disciplines. Therefore, how the research on disaster management can reach more disciplines, so it can be integrated into other sectors of disciplines.