

Development of University Strengthening Program for Enhanced Contribution in Disaster Risk Reduction in Eastern Indonesia

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Synopsis

The eastern region of Indonesia is prone to various natural hazards. Limited infrastructure and lack of human development, including tertiary education, in the region that is dominated by small and large islands, have contributed to its high disaster vulnerability. According to Sendai Framework for DRR 2015-2030, the universities play an important role in disaster risk reduction at the national, regional and local level, to support science-based policy and decision making process. A program for strengthening local universities is being developed by the national University Forum for Disaster Risk Reduction (UF-DRR), targeting five provinces in the region and one in Central Java. An assessment was conducted to understand their DRR capacity, identify “local champions” and identify local needs for a strengthening program. The assessment result shows that basically there are already DRR roles and contribution of universities in the targeted areas, but mostly are limited to individual rather than institutional involvement. Based on the assessment result, a university strengthening program in DRR is developed for implementation in the region.

Keywords: Disaster Risk Reduction, University, Capacity Assessment, Strengthening

1. Introduction

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The eastern region of Indonesia, which is mainly archipelagic in nature, is characterized by a complex seismo-tectonic system formed by the confluence of Pacific plate and Philippines plate in the north, Australian plate in the south and Eurasian plate in the west, thus very prone to various natural hazards. Limited infrastructure development and lack of human development, and in particular

tertiary education, in the region that is dominated by small and large islands, have contributed to its high disaster vulnerability.

As stated in the Sendai Framework for DRR 2015-2030 (UN, 2015), the roles of academia and scientific and research institutions are to focus on disaster risk and scenarios, increase research for regional, national and local application; support action by local communities and authorities; and support the interface between policy and science for decision-making. It is therefore important to improve the role of the universities in the eastern region of Indonesia in better contributing to the local disaster risk reduction efforts. For that



Fig.1 Locations of Targeted Provinces of the Program in the Eastern Region of Indonesia

purpose, a program for strengthening local universities in the region is being developed and implemented by Mercy Corps Indonesia (MCI) within the framework of Technical Assistance and Training Teams (TATs) program, which has as its main objective the capacity strengthening of local government disaster management agencies. It is expected that by strengthening the local universities/higher education institutions in the region in order to be able to play better their supposed roles, local disaster risk reduction efforts can be implemented more effectively and efficiently.

In this program, the MCI is collaborating with the national University Forum for Disaster Risk Reduction (UF-DRR), to implement the strengthening program in five targeted provinces in the region (Southeast Sulawesi Tenggara, Maluku, North Maluku Utara, Papua and West Papua Provinces) and in one more developed province in western region of Indonesia (Central Java) (see Fig.1). The purpose of involving Central Java province where universities are more developed and progressive is to serve as a benchmark and also as resources to support the eastern region universities.

The objective of this assessment is to understand the DRR capacity of universities, identify “local champion” universities and identify local needs in the region for developing a strengthening program for local universities in contributing to DRR in the target provinces

2. Methodology

An assessment of university capacities in the targeted areas, using five indicators of capacity which are related to the institutional setting, human resources, infrastructure and facilities, activities/programs, and financial resources, has been implemented in order to identify the needs in capacity enhancement programs. We define the capacity of the universities here as proposed by Bhagavan and Virgin (2004), that “institutional capacity” encompasses, on the one hand, the functions (tasks) that institutions should have the competence (ability) to perform, and, on the other, the resources (human, technical and financial) and structures they need to that end. In this regard, the capacity of local university is defined as “the ability of local university as an institution and its components (persons and resources) in implementing the “Tridharma” of University, in performing/implementing DRR” . Tridharma is a concept of the mission or responsibility of of universities in Indonesia according to the National Law No. 12 Year 2012 on Higher Education which consists of conducting research, education, and outreach service or services for the benefit of the community.

The assessment is conducted by collecting secondary data on basic information about the provinces and available higher education institutions/universities in the region, and conducting interviews and focused group discussions with local stakeholders involving

relevant public officers, academia and students and local NGOs and visiting some of the most prominent local universities. There are seven key questions which were used to assess the university capacity in DRR, i.e.:

- (1) How universities are involved as local players in DRR?
- (2) How universities would like to be involved in DRR?
- (3) What are the barriers for involvement in DRR?
- (4) What is the available local capacity/expertise in DRR?
- (5) How university DRR capacity building should be developed?
- (6) What are the local university experiences and

activities in DRR?

- (7) Which areas of DRR need to be pursued, who are the “local champions”?

The collected data is analyzed in order to provide general and detailed information on the current situation and capacities of the local universities according to the above five indicators of capacity. For each of these indicators, a set of criteria for assessing its level is established, as shown in Table 1, and a score value is assigned. The result is presented in spider diagrams in order to be able to compare and understand the needs of each province in strengthening their universities.

Table 1 Criteria for Assessing University Capacity in DRR

Capacity Score	Capacity Components				
	Research Institution	Human Resource	Physical Infrastructure and Facility	Program and Activity	Financial Access
Strong Score = 3	Availability of disaster dedicated or non dedicated research center active in disaster research	Availability of lecturers, researcher and people implementing outreach program in disaster issues	Availability of building or space for research centre <u>and</u> laboratories supporting research in disaster issues	Availability of disaster issues related activities in either lectures, research and community outreach programs (at least two of them)	Have access to financial sources from national government, local government, donor or industry for at least two pillars from Tridharma
Moderate Score = 2	Availability of individuals active in disaster research	Availability of lecturers or researcher implementing only two of the three pillars	Availability of building or space for <u>either</u> a research centre <u>or</u> laboratory(ies) supporting research in disaster issues	Availability of disaster issues related activities in either lectures, research and community outreach programs (at least one of them)	Have access to financial sources from national government, local government, donor or industry for one pillar from Tridharma
Weak Score =1	None	Lecturers or researcher implementing only one pillar	None	None	None

3. General Description of Universities in the Targeted Areas and the Role of University Forum as a National Platform of Universities in DRR

The provinces in eastern region of Indonesia are less populated compared to those in Java island, thus there are less universities in the eastern part of Indonesia compared to Central Java. (see Fig. 2). Due to the number of population, the universities in Central Java serve more than hundred thousands of population in average, meanwhile the universities in eastern region of Indonesia serve only half of those served in Central Java. However, the average number of students served by one faculty in universities in the eastern region is more or less similar to that in Central Java, meaning that there is

actually adequate number of faculties in eastern Indonesia. In terms of population, there are higher rate of students as well as faculties in the eastern region of Indonesia, compared to Central Java, which seems as a paradox.

The University Forum for DRR (UFDRR) is a national university network serving as a platform for the coordination, communication, information exchange and collaboration between universities on DRR issues in Indonesia, which was established in 2008. All national universities interested in disaster studies are welcome to be member of UFDRR. Currently, there are 46 universities (which consist of 53 research centers and 25 study programs related to disaster studies) joined as members of UFDRR

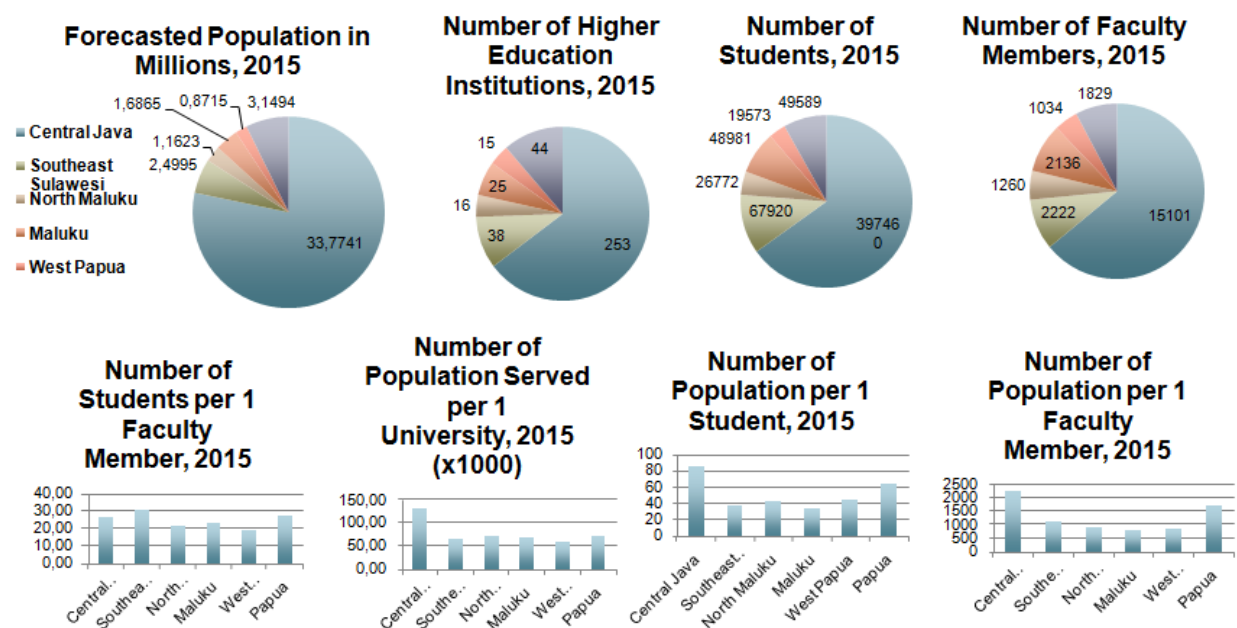


Fig. 2 General Description of Universities in the Targeted Area

The role of universities in disaster management is clearly stated in the 2015-2019 National Mid-Term Development Plan, that the national policy on disaster management is directed toward strengthening of disaster management governance at the national and local level in all government and communities, universities, non government organization and private sector to improve disaster resilience. The National Disaster Management Plan

2015-2019 also states the Inter-sector synergy in disaster management which specifically includes universities as one of the main stakeholders.

The role of university in DRR is also stated in the Sendai Framework for DRR (Para. 36 (j)) : “Academia, scientific and research entities and networks to focus on the disaster risk factors and scenarios, including emerging disaster risks, in the

medium and long term; increase research for regional, national and local application; support action by local communities and authorities; and support the interface between policy and science for decision-making". Paragraph 24 also states that the importance of promoting and improving dialogue and cooperation among scientific and technological communities, other relevant stakeholders and policymakers in order to facilitate a science- policy interface for effective decision-making in disaster risk management; and strengthening technical and scientific capacity to capitalize on and consolidate existing knowledge and to develop and apply methodologies and models to assess disaster risks, vulnerabilities and exposure to all hazards at both national and local level in order to understand the risk situation in the area.

4. Assessment Result

The result of the overall assessment indicates that in general there are roles and contributions of universities in the six targeted provinces. However, most of the contributions of the academia from local universities are individual in nature and not an institutional endeavor from universities or units within them (disaster study or research center). Most of the universities in the eastern region do not have specialized units or research centers dealing with disaster studies. In general, the constraints that were found in universities in the targeted provinces were the lack of awareness among university management as well as local government agencies of the importance of disaster risk reduction and the role of universities in DRR in the region. The main focus of disaster management according to the targeted respondents is emergency response (particularly in Papua and West Papua), not Disaster Risk Reduction. This lack of awareness of disaster risk approach had caused the lack of their priority in conducting works related to understanding of hazards, vulnerability and disaster risk, such as disaster risk assessment and disaster risk reduction approaches, so there is a negligence of the local universities in strengthening their

capacity for disaster risk reduction related activities, both in education and research areas as well as in the outreach programs.

The result of qualitative assessment of five capacity components of the universities for DRR is shown in Table 2 below. Values are in the range from 1 (weak) to 3 (strong). As shown in the Table 2, the capacities of universities in North Maluku is the highest compared with universities in other five provinces, followed by universities in Papua. Universities in North Maluku and Papua already have sufficient resources and access to and allocation of funds to carry out activities in the area of disaster risk reduction. Fig. 3 below show spider diagram of capacity in terms of the five capacity components, both for each of the assessed universities in the targeted provinces and in overall average values for each provinces.

The result of survey generally shows that the universities' role in supporting the local DRR initiatives as well as in supporting the Local Disaster Management Agency (BPBD) is still very limited to anecdotal involvement of individual persons, due to the lack of awareness of most of university management, limited availability of disaster-related information at the local level, and lack of communication and coordination between the universities and the BPBDs and other disaster-related local stakeholders.

Nevertheless, at the end of the assessment sessions, there is an additional benefit obtained from the implementation of the university assessment. The assessment process has been able to build a communication bridge between the universities and the local governments and BPBDs as well as local NGOs within each targeted provinces has been established, which were warmly welcomed by all the

parties. At the same time, university networks in the form of University Forums for DRR in Papua, Papua Barat and Maluku Utara Provinces, as well as at the regional level, a university forum for DRR

for Eastern Indonesia, have been established, which provide an ideal platform for the involvement of universities in future DRR activities and measures.

Table 2 Quantitative Assessments of University Capacities in DRR

University Capacity in Six Provinces	Institutions	Human Resources	Infrastructure and Facilities	Activity and Program	Financial Resources	Average
University in Central Java	2.0	2.0	1.7	2.7	2.7	2.1
University in Southeast Sulawesi	1.8	1.8	1.4	1.8	2.4	1.8
University in Maluku	2.0	1.8	1.8	2.3	1.5	1.9
University in North Maluku	2.3	3.0	1.3	2.3	2.7	2.3
University in Papua	2	3.0	1.4	2.2	2.0	2.1
University in West Papua	1.3	1.8	1.5	1.8	1.2	1.5

5. Development of Strategy for University Strengthening in Disaster Risk Reduction

Based on the assessment result, a three pronged strategy to enhance universities' capacity in contributing to local DRR efforts in Eastern Indonesia region is developed. The strategy focuses on three main actions to be implemented within two years in targeted regions:

(1) Promoting DRR awareness to local higher education and research institutions (universities) and establish network of collaboration at the provincial level

(2) Develop strategic plan for the university collaboration network for contributing to DRR at the provincial and local level

(3) Identifying and documenting lessons learned from DRR implementation and best practices at the local level to build interest in DRR research and education

A summary of the action program is shown in the Table 3.

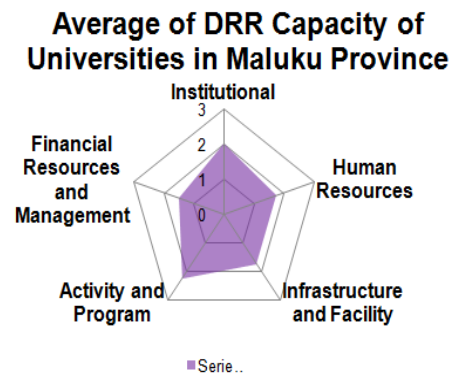
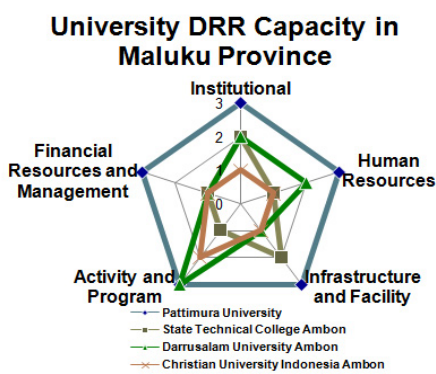
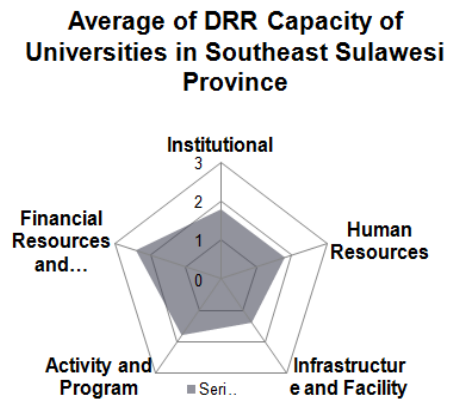
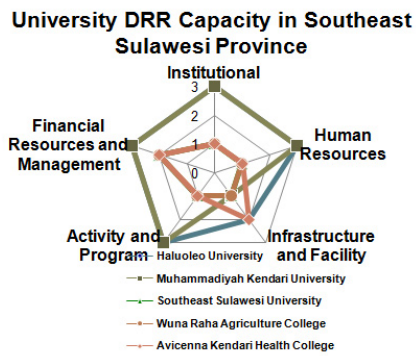
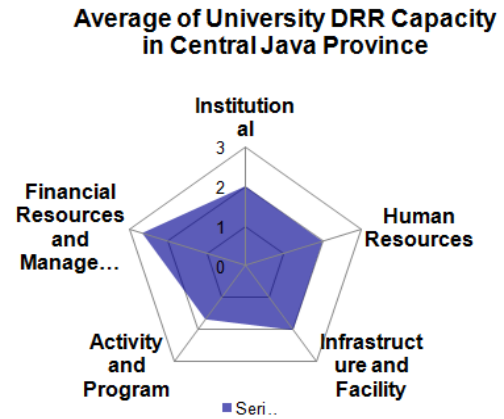
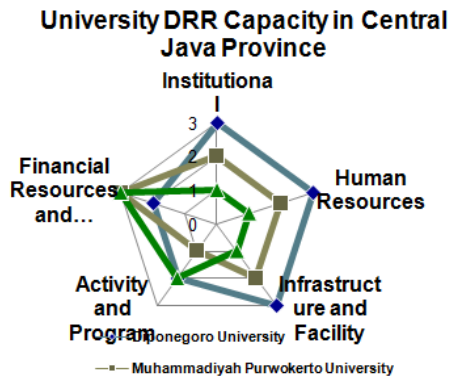


Fig. 3 Level of Strength of University Capacity in Each Province

Table 3 Proposed Action Program for 2016-2017

Promoting DRR awareness to local higher learning institutions (universities) and establish network of collaboration at the provincial level	Develop strategic plan for the university collaboration network for contributing to DRR at the provincial and local level	Identifying and documenting lessons learned from DRR implementation and best practices at the local level to build interest in DRR research and education
<ol style="list-style-type: none"> 1. Awareness raising events for policy/decision makers at the local universities and local governments in each province 2. Setting up of provincial university network and Eastern Indonesia network for DRR 3. Develop guideline for setting up disaster research center at local universities 4. Training workshops on DRR/ DRM and risk assessments for universities 	<ol style="list-style-type: none"> 1. Training workshop for developing strategic plans for the provincial university networks for DRR in each province 2. Developing strategic plan by each provincial university network for DRR nsi 3. Training workshops for developing research , education and outreach program proposals for implementing the strategic plan at each province 	<ol style="list-style-type: none"> 1. Training workshops for designing research proposal for documenting success story and lessons learned in DRR in each province 2. Documenting success stories and lessons learned on DRR implementation in each province 3. Developing data base of researchers and research interest from all the universities in each province

Source : Survey Report : Assessment of capacity and needs of Universities for Disaster Risk Reduction in six provinces : Central Java, Southern Sulawesi, North Maluku, Maluku, West Papua and Papua, 2015, Mercy Corps Indonesia

6. Concluding Remarks

An assessment of capacity and needs for university strengthening in eastern Indonesia Assessment has been conducted. The result shows that there are lack of capacity in carrying out education, research and outreach programs in the universities in Eastern Indonesian provinces This lack of capacity shows that there is a lack of interest to DRR issues and the lack of risk awareness among the management and faculty members as well as the lack of understanding of the role of university in engaging in DRR efforts in the provinces. A university strengthening program is developed based on the assessment result, with the goal to build awareness among the local universities; improve the capacity in DRR education, research and outreach; and encourage the university engagement in local DRR

efforts.

UFDRR is expected to be able to play a role in capacity building of Higher Education forum in Disaster Risk Reduction in Central Java, Sulawesi Tenggara, Maluku, North Maluku, Papua and West Papua through the implementation of Tridharma for Technical Assistance And Training Teams (TATTs) Program, which aims is to increase the capacity of DRR of Universities in Central Java province, Southeast Sulawesi, Maluku, North Maluku, Papua and West Papua in order to be actively involved in Disaster Risk Reduction.

7. Acknowledgement

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References

M.R. Bhagavan and I. Virgin, 2004, *Generic Aspects of Institutional Capacity Development in Developing Countries*, Stockholm Environment Institute, Stockholm,
<https://www.sei-international.org/mediamanager/documents/Publications/Climate/ICD.pdf>
National Law No. 12 Year 2012 on Higher Education, Republic of Indonesia

Research Center for Disaster Mitigation, 2015, *Survey Report : Assessment of capacity and needs of Universities for Disaster Risk Reduction in six provinces : Central Java, Southern Sulawesi, North Maluku, Maluku, West Papua and Papua*, for Mercu Indonesia and University Forum for Disaster Risk Reduction, Institut Teknologi Bandung, Indonesia
UN, 2015, *Sendai Framework for Disaster Risk Reduction 2015 – 2030*,
http://www.preventionweb.net/files/43291_sendai-frameworkfordrren.pdf

(Received June 13, 2016)