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ROLE OF DAMAGED HERITAGE RAPID ASSESSMENT IN POST-DISASTER RECOVERY PROGRAM

Punto Wijayanto Lecturer, Architecture Department, Trisakti University Email: punto.wijayanto@gmail.com

ABSTRACT

Indonesia is a country located in the ring of fire. Various kinds of disasters threats parts of Indonesia, including its rich cultural and natural heritage assets. Since the 2004, Tsunami in Aceh, the government gives serious attention to disaster. In 2007, it stipulated the Law 24/2007 on Disaster Management. It's so unfortunate that cultural heritage is not yet part of main concern during disaster programs. In addition, there are only few experiences in the world about how to deal with the condition of heritage affected by disaster.

Heritage organizations in Indonesia aim to raise awareness about disaster risks on cultural heritage. They develop system of damage assessment to cultural heritage or Damage Heritage Rapid Assessment (DHRA) at the time of emergencies. Damage assessment was introduced in Yogyakarta, experienced a lot of damage caused by the massive earthquake in 2006. DHRA has been used in Padang (2009), Yogyakarta (2010), Jakarta (2013) and Manado (2014). This paper aims to explain what DHRA is and how DHRA can contribute to post-disaster rehabilitation and reconstruction of heritage district.

Keywords: Damage assessment, disaster, heritage

I. INTRODUCTION

As a country located in the ring of fire, Indonesia

has experienced various significant disas ters. The vulnerability of heritage is due to disaster-prone location of the heritage, heritage building materials. building technology, tools and infrastructure as well human resources for managing conservation of heritage buildings. Many heritage buildings were destroyed and damaged when disasters hit thus immediate rehabilitation or reconstruction which appreciates heritage value has to take place. Rehabilitation and reconstruction which mainly use material and techniques compare to the use of authentic traditional material and technique will cause changes on the area characters. No-reference and heritage inventory is also a challenge for postdisaster conservation.

2005 Since the Tsunami in Aceh,

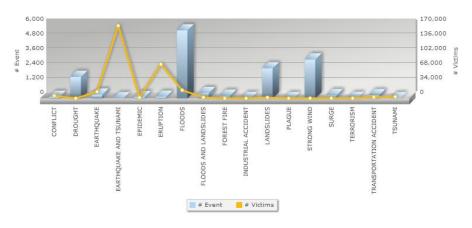


Figure 1. Distribution of Disaster Type and Death Victim per Type of Disaster (1815-2014) Source: http://dibi.bnpb.go.id/DesInventar/dashboard.jsp?countrycode=id / 6 January 2016

government, universities and heritage organizations give serious attention to the damage to cultural heritage. In 2007, Government of Indonesia stipulated the Law 24/2007 on Disaster Management¹². It's so unfortunate that cultural heritage is not yet part of main concern during post-disaster recovery program. On the other hand the Law 11/2010 on Cultural Heritage doesn't mention about disaster.

Heritage is known as identity and character of most of Indonesian cities. The problem is how to reconstruct their identity and character when heritage assets are recognized management. As various kinds of disasters are threatening parts of Indonesia, heritage organizations established Heritage Emergency Response (HER) unit on an ad hoc basis. The role of the HER unit is to stress the importance of saving heritage from disaster not only for the conservation of the heritage and history itself, but also for helping restore a sense of normalcy and enabling people to move forward using their heritage assets. Heritage organizations aim to raise awareness about impact of disaster on cultural heritage by organizing damage heritage or assessment to Damage Heritage Rapid Assessment (DHRA).

Some of those activities include (1) revitalization of Hiliamaetaniha traditional village after the 2004 Tsunami in Nias island, (2) revitalization of Kotagede heritage district and the Kraton complex after the 2006 earthquake in Special Region of Yogyakarta, (3) rehabilitation of Rao-Rao Mosque in Tanah Datar and Jam Gadang/Clock Tower in Bukittinggi after the 2007 earthquake in West Sumatera, (4) rehabilitation of St. Leo Church in Padang dan Lubuk Bareh Mosque in Padang

threatening and disturbing the community life and livelihood, caused by natural and/or non-natural as well as human factors resulting in human fatalities, environmental damage, loss of material possessions, and psychological impact (Law No. 24/2007 concerning Disaster Management, Article

Disaster shall mean an event or a series of events

1, Paragraph 1).

Pariaman after the 2009 earthquake in West Sumatera and (5) rehabilitation of traditional Minangkabau houses in Sumpur-Tanah Datar after the event of fire in 2013. This paper is to study and discuss two projects of DHRA in Yogyakarta and Padang to explore its concept, steps in the assessment process and its role in disaster management in heritage districts.

II. DISCUSSIONS

II.1. Origin of the Notion "DHRA"

The notion of DHRA was introduced in Yogyakarta when the earthquake that happened in May 26, 2006 caused damages to some buildings. Fortunately, post-earthquake program are succeeded to repair and improve several traditional houses and its area quality. It was a process taken from 2006 to 2012. Heritage organizations in Yogyakarta together in a program to save the cultural heritage of Jogja. They were grouped in "Pusaka Jogja Bangkit Team", organised by the Centre for Heritage Conservation (CHC), University of Gadjah Mada (UGM) Yogyakarta³ and Jogja Heritage Society (JHS). The Team's priorities concern is not only monument, but also folk tangible and intangible heritage, the wooden and brick traditional constructions⁴.

More attention was given to cultural heritage in the Kotagede District, the former city centre of Islamic Mataram Kingdom in 16th C. It is located about 6 km to the south east of Yogyakarta City. It is known as silver crafts city. There is also

² Bahasa: UU 24/2007 tentang Penanggulangan Bencana

This institution cooperated with other conservation institutions such as Jogja Heritage Society/JHS. Some architecture students from Universitas Gadjah Mada, Atma Jaya Yogyakarta University joined the heritage team and worked voluntarily.

⁴ Adishakti, Laretna, "Quick Emergency Response and Long Term Recovery Agenda: *Pusaka Jogja Bangkit!* – Jogja Heritage Revival! - Save Heritage and Build a Better Local Economy" presented in the International Seminar on the Recovery Management of Arts and Cultural Heritage, organized by Faculty of Culture, Universitas Gadjah Mada, January 19, 2007.

hundreds 200 traditional of years architecture which were damaged or collapsed affected by the earthquake. Various efforts are organized to save and maintain the unique character of Kotagede from fading. World Monuments Fund (WMF) even declared the Kotagede Heritage District as one of 100 Most Endangered. In the report "2008 World Monuments Watch List of 100 Most Endangered Sites", it was stated as follows:

The entire area surroundina Kotadege suffered damage in the May 2006 earthquake, and local residents still await aid to restore their homes. Today repairs are carried out in a haphazard way. resulting in loss of historic fabric. Government assistance provided in the wake of the earthquake has encouraged new construction rather than preservation, but it is hoped that Watch listing will highlight importance of incorporating area's still-living cultural heritage into the rebuilding of this Javanese city. (WMF, 2008).

To highlight the importance of heritage, the Pusaka Jogja Bangkit Team organized a unit to conduct a damage assessment to heritage or Damage Heritage Rapid Assessment (DHRA). The unit is a volunteer based and involve local

communities in their activities. They started by conducting a damage assessment, including inventory, measurement, analysis and design planning of the buildings and the environment. The aim of DHRA is formulated as follow:

- To conduct rapid assessment of tangible and intangible heritage as well as of cultural landscape heritage; and
- To disseminate the results of these assessments among various local, national and international parties: governments, non-governmental organizations, private communities and local people concerned.

II.2. Steps in the Damage Assessment Process

In Yogyakarta and Padang's experiences, a group of university students was mobilized to go to the field and did the assessment. The team did the assessment of damaged traditional houses, including information about historical aspect. technical drawing and the damages detail of each building. They also measured and interviewed the owner related to their house condition. When there was no complete heritage list of heritage buildings. at the same time they have to make the inventory.

Table 1. Damaged Heritage Rapid Assessment (DHRA) in Kotagede Heritage District

No	Item	Pictures
1	Complex of the Great Mosque, built by Prince Senopati. Reconstructed by HB VII	
1.1	Great Mosque building DAMAGE: - Column of roof terrace cracked ACTIONS - Detail damaged assessment and measurement - Detail engineering design - Rehabilitation & stabilization the structure	
	Wall to the Cemetery (Kelir part): Mosque and cemetery in one	

Mosque and cemetery in one complex

DAMAGE:

- Totally collapsed

1.2 ACTIONS

- Detail damaged assessment and measurement
- Redrawing the original design
- Detail engineering design
- Reconstruction

Cemetery Wall

DAMAGE:

- Partially collapsed

1.3 ACTIONS:

- Detail damaged assessment and measurement
- Detail engineering design
- Rehabilitation



Source: Report "Rapid Assessment of Damage Heritage in Jogja and Jateng Post Earthquake on May 27, 2006".

II.3. Role of Damage Heritage Rapid Assessment in Post-Disaster Recovery Program

As heritage is not yet a concern in disaster management, need of post-disaster recovery program related to heritage in Yogyakarta was not created. It was a hard work since there was no budget to support that kind of program. For example, there were for example in Kotagede about 88 damaged houses in from about 150 traditional houses and most of them are collapsed and could not be occupied. As its main material is wood, it was assumed that mostly it was its bad condition which can longer support the construction. Restoration is needed to restore those damage houses, but it was also important discuss the issue of maintanance. Based the on rapid estimation, a damaged traditional house cost about Rp 60-100 million to restore. The cost to build a complete Joglo is about Rp 450 million. The total cost for 88 damaged joglo is Rp 18 billion. This is a quite extraordinary cost. At that time; the government was only able to give about Rp 10-30 million for each house depending on the level of damage of the house. Due to lack of budget, the owners might not be able to restore them to their traditional forms.

Following the result of DHRA process, the Pusaka Jogja Bangkit Team (English translation: Jogja Heritage Revival) in Yogyakarta promoted a strategy of "Heritage Foster Parents Program" (or Program Orangtua Asuh Pusaka). The program was started by campaigning and promoting the program to potential donors as many as possible. To that end, the team made a more detailed assessment that describes how the damaged condition of the house⁵. The report was disseminated by organizing exhibition, discussion and workshop, including for local community.

Conservation plans were made to show the damage of the houses and

⁵ This assessment activity is supported by JICA through Community Empowerment Program (CEP) during 2006-2007.

needed action, completed with budget estimation. Within 2 years, the Foster Parents Program has been able to gain supports to reconstruct and to retrofit some traditional houses. The objective of the campaign was to save heritage buildings, and also focused on their utilization. Certain traditional buildings were identified for rehabilitation and funding could come from various sources, such as: the Java Reconstruction Fund, University of Gadjah Mada, the Dutch government and Prince Claus Funds. To assist the buildings' owner in Kotagede to maintain their properties, UNESCO Jakarta support the preparation of a guide "The Homeowner's Conservation

Manual for Kotagede Heritage District". The houses are now for public use.

During 2008-2012, Ministry of Public Works and the World Bank also joined and implemented a rehabilitation project in Kotagede⁶. The program aimed empower the community with disaster risk reduction based planning. The output of the process is a document, namely CSP (community settlement planning) completed with a short-term development program. The project gave support by funding the restoration of some collapse or damaged traditional houses to be used for public functions and a dozen private traditional houses, located at visually prominent positions, to be used as part of heritage walks.

Yogyakarta and Kotagede's experience became reference for DHRA after the 2009 earthquake in Padang, the capital of the Province of West Sumatera. It's also easy for the implementation of DHRA in Padang to get financial support from the CER program of the Prince Claus Fund (PCF). Padang is a historic city. During the development of the city into an important urban and industrial centre in West Sumatra; a harbor area namely Batang Arau functioned for trading agricultural

[59]

⁶ The project is a response to an earthquake in May 27, 2006 damaged settlements in the Yogyakarta and Central Java provinces and a tsunami in June 2006 destroyed some settlements along the coastal areas in Pangandaran-West Java.

products of Padang highlands. A railway between the mining area in Sawahlunto Batang Arua and the area was constructed. In 1892 however a new modern harbour, Teluk Bayur, accessible for sea ships was constructed. Now the Batang Arau area is still recognizable as the most ancient part of the city. The urban and built heritage in Padang is mostly based on European and Chinese With support from the PCF, University of Bung Hatta and other organizations in Padang conducted a Heritage Emergency Response directly after the earthquake⁷. The office of Bank of Indonesia in Padang provides its building to use for coordination post. The building was one of the buildings in saved condition after the earthquake. It is located in Batang Arau area and strategically located as a starting point

Table 2. Damaged Heritage Rapid Assessment in Padang City

· ·	U	•		U	,
CITY OF PADANG	Heavy	Moderate	Minor	8afe	Total
Places of Worship	10	3	1	1	
Residential	42	19	13	1	
Shophouse	16	11	3	5	
Station	5	0	6	1	
Hotel	3	3	1	0	
Commercial Building	2	6	4	2	
School Building	8	7	4	0	
Office Building	4	3	4	2	
Warehouse	22	11	3	1	
Military Building	1	7	2	0	
Cultural Sites	1	2	0	1	
Hospital	0	0	1	0	
	114	72	42	14	242
SURROUNDING OF PADANG	Henry	Madazda			Total
	Heavy	Moderate	Minor	8afe	Iotai
Places of Worship		2			
Residential			2		
School Building			1		
Cultural Building	1				
	1	2	3	0	6
PARIAMAN	Heavy	Moderate	Minor	Safe	Total
Places of Worship	4	1	1		
Residential	5	1	1		
Shophouses	1				
Station			2		
Hotel	1		1		
Commercial Building	2		1		
School Building	1		-	1	
Office Building	-	1		2	
Office building	14	3	6	3	26
		-	0	3	
Source: BPPL 2011					274

Source: BPPI, 2011

7

traditions. A survey of the historic aspects of the region already revealed a downtrend of the economic function of the area and a substantial number of buildings in bad conditions (RCE, 2011). On September 30, 2009 an earthquake heavily damaged some parts of West Sumatera. In Batang Arau area, quite a number of characteristic structures were destroyed.

Damaged Heritage Rapid Assessment was conducted from 10 to 15 October 2009. DHRA covered Padang Old Town Quarter's conservation area as well as the area's buffer zone, including museum and library and heritage buildings around the city.

when conducting observation and assessment around this heritage quarter. Its aim was to assess the damaged heritage buildings in Batang Arau area. However, its scope of area was extended into Padang city and its surrounding and even Padang Pariaman region which was also heavily hit by the earthquake. The students from University of Bung Hatta worked on the data collection to identify buildings condition and to identify immediate actions necessary during emergency response phase.

In Padang, DHRA covered heritage buildings inscribed on the list of Evaluation on Conservation Area Boundaries and Heritage Conservation Buildings in Padang established bγ the Municipal Government of Padang-Agency for Urban Development in 2006 that listed 257 buildings⁸. The total number of buildings assessed in the City of Padang and around was 274 buildings where as 129 heavily damaged, 77 moderately damaged, 51 slightly damaged. Only 17 buildings were in a safe condition. The results are found in the reports Damaged Heritage Rapid (2009).Taking Assessment into consideration of their significant values, there are 7 priority buildings proposed to be rehabilitated: Padang City Hall, Wisma Sukma Indah, St. Leo Church, Ganting Grand Mosque, PT Kerta Niaga (Formerly Warehouse Escompto Maatschappij Office), Shophouses corridor on Jl. Niaga and Bola Dunia Taylor on Jl. Pondok.

The report was disseminated by exhibition, discussion organizing and workshop in BPPI's Heritage Gallery in Padang and in well. Coordination was also made with the local government and National Agency for Disaster Management to discuss guidelines for a rehabilitation of the earthquake affected-areas that is in line with heritage conservation principles. As in

⁸ The document used the result of a research implemented by Pusat Studi Arsitektur dan Konservasi (Pusaka) University of Bung Hatta (UBH) and lead by Jonny Wongso in 2006.

Yogyakarta, DHRA report was useful to attract attention to save damage heritage buildings in Padang. There was a building of 7 priorities could get financial support for its restoration. The PCF supported the restoration of Wisma Sukma Indah.

3. CONCLUSION: CHALLENGES FOR DAMAGED HERITAGE RAPID ASSESSMENT

Indonesia has variety of natural disaster, including volcano eruption and floods. Unfortunately, heritage is not yet part of main concern in disaster management, therefore there is need a system of damage assessment to heritage. The result is expected to raise awareness of people about the impact of disaster to heritage. The establishment of a Heritage Emergency Response (HER) unit who conducted Damage Heritage Rapid Assessment (DHRA) process is to stress the importance of saving heritage from impact of disaster. The strategy behind the initiative to implement DHRA is to bring together different stakeholders concerned with the degradation of heritage assets following a natural disaster. Following the DHRA report, different stakeholders could be brought into a partnership. For example, the local universities play their role by contributing expertise, non-profits working at the local or national level engaged with initiative and international the organizations, like the Prince Claus Fund encourage the process of shared learning with potential for replication elsewhere.

The government's support could make conditions more favorable for heritage conservation after disaster. The focus on emergency rescue has broadened to include the safeguard and recovery of cultural assets. The development of a comprehensive system of the disaster management is needed, particularly for the involvement and cooperation of the local

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community, non-profit heritage societies, universities and local government. The government is hopefully to introduce policies that might support the role of DHRA at disaster management in Indonesia.

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