

BUILDING BACK BETTER IN YOGYAKARTA:

Research Proposal

Learning from the Rehabilitation and Reconstruction Efforts of Nglepen Dome Houses and Huntap Pegerjurang

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ABSTRACT:

The Sendai Framework for Disaster Risk Reduction 2015 (SFDRR 2015) emphasizes building back better. Indonesia, with its geographic and geological characteristics experience natural disasters regularly. The Yogyakarta earthquake of 2006 and the Merapi Volcano eruptions of 2010 within Yogyakarta Special Province (YSP) left an indelible footprint in Yogyakarta, Indonesia wherein more or less one million Indonesians were displaced combined. Various initiatives by national and local governments with the active participation of international NGOs led to the reconstruction and relocation of the affected communities: 1) the Dome Houses of Nglepen Hamlet in Sumberharjo Village (constructed in response to the 2006 earthquake), and; 2) Huntap Pegerjurang, Kepuharjo, in the Sleman Regency (constructed in response to the 2010 Merapi Volcano Eruption). The stark differences in the evolution of the two communities from initial relocation to its current community make-up is an interesting case study sift good practices and processes in order to improve the relocation and reconstruction (R&R) processes both in Yogyakarta and Indonesia. Improving this process will lessen pressures on affected communities and will further improve the country's resilience and adaptive capacity and easily bounce back from a major natural disaster. Initial site visits have indeed shown numerous issues in both sites thus this study will delve deeper into the communities by employing SFDRR's Build Back Better Framework. The R&R process and the evolution of the communities (from the house form, community organization, to changes in livelihood) will be examined. It is the proponents' aim to produce policy recommendations to assist Yogyakarta in further improving their disaster response, specifically to be more community-centered and contextually-conscious during reconstruction and rehabilitation and possibly expand on the Build Back Better Framework.

Key Words: disaster risk reduction, rehabilitation, reconstruction, resilience, resettlement

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RESEARCH PLAN TEMPLATE 01: Research Questions and Outcomes

FIELD OF RESEARCH

This transdisciplinary research will focus on Disaster Risk Reduction, specifically in contributing to the dialogue on community-driven **reconstruction** and **rehabilitation** in response to the SFDRR’s principle of “Build Back Better”.

STATEMENT OF PROBLEM

Indonesia faces numerous natural disasters annually. Located in the Pacific Ring of Fire, it has 127 active volcanoes and rests on numerous active tectonic plates. Volcanic activities and earthquakes are a common occurrence thus the Indonesian government has institutionalized numerous agencies, with active participation from the academe, to address and respond to these threats. In 2006, a major earthquake struck Yogyakarta and levelled the community of Bantul. In 2010, a major eruption of Mt. Merapi opened its mouth towards the south, thus increasing the risk and vulnerability of Yogyakarta. Table 01 provides a brief look at the death and damages brought by these two disasters.

Table 01: Comparison of death and damages of the two case studies.

	Merapi Volcano Eruptions 2010	Yogyakarta Earthquake 2006
Dead toll	386	5018
Injured	131	19401
Displaced families	> 2200	_____
Economic loss	~403M US\$	~3.1B US\$

The affected families of Bantul in 2006 (henceforth to be known as Case A) were assisted by international NGOs⁸ and were relocated to the Monolithic EcoShell Dome Houses in Nglepen Hamlet (WANGO, n.d.). In the 2010 Mt. Merapi Eruption (henceforth to be known as Case B)⁹, affected families were relocated to Huntap Pegerjurang. Table 02 provides data on the relocation efforts in both cases:

Table 02: Comparison of reconstruction and Rehabilitation efforts in both cases.¹⁰

	Merapi Volcano Eruptions 2010	Yogyakarta Earthquake 2006
Houses built	301	80
Houses empty	??	24
Changes made to house by local people	Yes	Yes

⁸ The project was spearheaded by Emaar Properties, a real estate developer in Dubai through a joint initiative with the World Association of Non-Government Organizations (WANGO). One million USD was allocated for the Dome Houses with linkages with the Department of Architecture of Universitas Gadjah Mada and the Indonesian national and local government (WANGO n.d.).

⁹ Due to the magnitude of the volcanic activity, it garnered better international media exposure than Case B. Along with the government initiatives, the European Union, Australia, Canada, Japan, UAE, the US, Pakistan, Philippines, Portugal, Taiwan, and Malaysia responded.

¹⁰ “Changes made to house by local people” means any physical and structural modifications to the structure. This includes addition and changes in the original design of the house e.g. additional room, balcony, a private toilet, removal of second level, and the like.

There is a stark contrast between the house form and process of Case A and Case B. Case A was initiated by international NGOs: World Association of Non-Governmental Organizations (WANGO) and the Dubai-based Emaar Properties. They partnered with the Indonesian national government and the Yogyakarta local government. Case B on the other hand was through the Rekompak Program of the local government of Yogyakarta. The house form of Case A is also extremely different from Case B. Whereas the latter employed a more typical and traditional form, the former introduced a more “alien” design with the dome houses. Initial site visits showed numerous issues with Case A, especially in the community participation and consultation process. In Case A, the contrast between the proposed space usage and the actual usage of the space proved that is insensitivity to the cultural needs of the resident. This led to drastic changes and adaptation of the residents especially with the blurring of the private and social activities (Marcillia & Ohno 2012). It is assumed that Case B fared better because of the government’s learnings in the span of four years from 2006 to 2010. Finally, it was discovered that there are little to no existing study that looks into the impacts of the reconstruction and rehabilitation to the communities affected in both cases. The only literature that was sifted from ScienceDirect is the study by Marcillia & Ohno which examined Nglepen’s Dome Houses in 2011.

PURPOSE

Thus, this study will try to dissect and analyze the processes of the two cases to identify any gaps or learnings to further improve future reconstruction and rehabilitation efforts in Yogyakarta utilizing the SFDRR’s Build Back Better Framework as modified by Safi et al (2016). The study will focus on “Community Recovery” which involves the “Psychological and Social Recovery” and “Business Recovery” which will aim to help the third concept - Effective Implementation. Additionally, the proponents are proposing to introduce Housing Evolution under “Community Recovery”.



Figure 01: The Modified Build Back Better by Safi et al (2016).

RESEARCH QUESTION

What are the lessons learned - including good practices, improved strategies, and any remaining gaps - in the post-disaster rehabilitation and reconstruction of the Nglepen Hamlet and Huntap Pegerjurang resettlement sites to improve the resiliency and adaptive capacities of the communities?

PROPOSED OUTCOMES

1. A research paper that will contribute to the national (Indonesian) and international discourse on Disasters Risk Reduction, specifically in Community-driven Rehabilitation and Reconstruction in response to the SFDRR 2015.
2. Policy recommendation for both the local government of Yogyakarta and the national government of Indonesia to aid them in improving mechanisms or strategies in post-disaster rehabilitation and reconstruction.

RESEARCH PLAN TEMPLATE 02: Goals and Objectives

RESEARCH QUESTION

What are the lessons learned - including good practices, improved strategies, and any remaining gaps - in the Community Recovery of Nglepen Hamlet and Huntap Pegerjurang resettlement sites to improve the resiliency and adaptive capacities of the communities?

PROPOSED OUTCOMES

1. A research paper that will contribute to the national (Indonesian) and international discourse on Disasters Risk Reduction, specifically in Community-driven Rehabilitation and Reconstruction in response to the SFDRR 2015.
2. Policy recommendation for both the local government of Yogyakarta and the national government of Indonesia to aid them in improving mechanisms or strategies in post-disaster rehabilitation and reconstruction.

RESEARCH OBJECTIVES

1. To identify the design process and strategies in the housing design and community of Cases A and B, including the evolution of the housing form and space usage from the occupancy of the residents up to its current form and usage. (Housing Evolution and Psychological Recovery).
2. To identify the social reorganization and community adaptation – including diversification of livelihood – resulting from the rehabilitation and reconstruction of Case A and Case B. (Social Recovery and Business Recovery)
3. To compare the learnings - gaps, good practices, improved strategies – between Case A and Case B in order to develop recommendations in improving the post-disaster community-driven rehabilitation and reconstruction of Yogyakarta, Indonesia (contributes to “Effective Implementation”).

RESEARCH PLAN TEMPLATE 03: Specific Research Questions

RESEARCH OBJECTIVES	SPECIFIC RESEARCH QUESTIONS	WHAT ARE THE ASSUMPTIONS OR KNOWN ISSUES AND THEREFORE THE LIMITATIONS WITH THIS APPROACH; IS THAT SATISFACTORY TO SET THE BOUNDARY OF THE THESIS?
1. To identify the design process and strategies in the housing design and community of Cases A and B, including the evolution of the housing form and space usage from the occupancy of the residents up to its current form and usage.	1.1 What were the process and methods employed in the development of the core house design?	It is relevant to identify the design process employed the resettlements to identify the level of community involvement in the R&R process.
	1.2 What were the methods employed in the planning of the resettlement area?	It is assumed that for effective resettlement, the process would

(Housing Evolution and Psychological Recovery).	1.3 How did the users modify their houses (in both form and utility) to reflect their daily needs as well as their culture?	involve the community. There is a possibility that information on the actual process may not be available thus for 1.1 and 1.2, interviews with the community members (leaders) and the key informants will be crucial.
2. To identify the social reorganization and community adaptation – including diversification of livelihood – resulting from the rehabilitation and reconstruction of Case A and Case B. (Social Recovery and Business Recovery)	2.1 How much of the original community social structure was preserved in the resettlement area?	Oftentimes, rehabilitation and reconstruction may fail to capture the original practices, social structure, and livelihood of the affected community. It is assumed that through time, the community had to adapt or change their habits/practices as well as their livelihoods given the constraints or opportunities of the new location.
	2.2 What are the community responses – reorganization and evolution – in order to adapt to the new resettlement?	
	2.3 What are the new livelihoods and practices that emerged in response to the new location?	
3. To compare the learnings - gaps, good practices, improved strategies – between Case A and Case B in order to develop recommendations in improving the post-disaster community-driven rehabilitation and reconstruction of Yogyakarta, Indonesia (contributes to “Effective Implementation”).	3.1 What are the major similarities and differences between the processes in the rehabilitation and reconstruction of Case A and Case B?	Given the stark contrast of strategies, solutions, and evolution of Case A and Case B, a comparison would extract lessons – both positive and negative – that help in crafting a policy recommendation. It is assumed that the local government of Yogyakarta has improved post-disaster rehabilitation and reconstruction from 2006 and 2010. The difference in scale between the two sites might be a hindrance in trying to synthesize salient learnings.
	3.2 What were the developments in policies and guidelines between 2006 and 2010 that may have led to the differences in the responses in both cases?	

RESEARCH PLAN TEMPLATE 04

SPECIFIC RESEARCH QUESTIONS	TECHNIQUES OF DATA COLLECTION	SOURCE OF DATA	TECHNIQUES OF DATA ANALYSIS/MODEL
1.1 What were the process and methods employed in the development of the core house design? ¹¹	Interviews Secondary research	Local government of Yogyakarta, NGO database, Government reports, Community	Simple synthesis and review, content analysis

¹¹ For Research Question, architectural research methods will be employed using the Ethnographic Design Research framework.

1.2 What were the methods employed in the planning of the resettlement area?	Interviews Secondary Research	Local government of Yogyakarta, NGO database, Government reports, Community	Simple synthesis and review, content analysis
1.3 How did the users modify their houses (form and utility) to reflect their daily needs as well as their culture?	Interviews Photo documentation Observation Floor plan sketching	Community	Ethnographic Design Research model
2.1 How much of the original community structure was preserved in the resettlement area?	Questionnaires Interviews Secondary research	Local government of Yogyakarta, NGO database, Government reports, Community	Qualitative analysis
2.2 What are the community responses – reorganization and evolution – in order to adapt to the new resettlement?	Questionnaires Interview Secondary research	Local government of Yogyakarta, NGO database, Government reports, Community	Qualitative analysis
2.3 What are the new livelihoods and practices that emerged in response to the new location?	Questionnaires Interviews Secondary research	Local government of Yogyakarta, NGO database, Government reports, Community	Qualitative analysis
3.1 What are the major similarities and differences between the processes in the rehabilitation and reconstruction of Case A and Case B?	Synthesis from Research Questions 1 and 2	From previous items	Synthesis and summarization
3.2 What were the developments in policies and guidelines between 2006 and 2010 that may have led to the differences in the responses in both cases?	Secondary research Interview	Local government of Yogyakarta, Indonesian database, other pertinent agencies	Content analysis and review

RESEARCH PLAN TEMPLATE 05

PLANNED SUBMISSION: April 2019

PROJECT COMPLETION TARGET: April 2020

PROJECT COMPONENT	MONTH											
	01	02	03	04	05	06	07	08	09	10	11	12
FIRST PHASE												
Literature review												
Survey and questionnaire development												
Preparation of ethnographic design field work												

Review and revision of items with advisers																				
Pre-test items with representative sample of target populations																				
SECOND PHASE																				
Surveys/ Interviews																				
Field work																				
Data analysis																				
THIRD PHASE																				
Development of policy recommendation																				
Paper writing																				
Draft submission and revision																				
Final submission of manuscript																				
REFERENCES																				
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