QUICK EVALUATION OF POST-TSUNAMI RELIEF HOUSES IN ACEH AS INPUT FOR LOCAL GOVERNMENTS

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ABSTRACT

Of all the provinces or cities in Aceh, Banda Aceh as the capital is the area most severely damaged by the earthquake and tsunami in 2004. After more than 15 years of being inhabited, the feasibility (quality) of the aid housing is clearly visible. The purpose of this short evaluation is as initial data in a long-term plan to measure the satisfaction of residents of the post-tsunami relief houses. The evaluation was carried out in Meuraxa District where the death toll reached 92.72%. At random, 5 houses from various aid donors were taken as samples. The evaluation method is qualitative through interviews with residents to find out their satisfaction. The results of the study found that in general, the residents were satisfied with the assisted house but there were several aspects that became dissatisfaction, such as bedroom/bathroom area which is too small, no kitchen, poor quality of materials, and construction. The results of this evaluation can be used as initial data for more in-depth research, and also input for local governments to find out the condition of the aid housing after 15 years of being occupied.

Keywords: template, instructions, conference, publications

1. INTRODUCTION

A tsunami struck off the Indian Ocean in 2004 as the fourth largest earthquake to erupt underwater from the province of Aceh and kill 227,898 people in 14 countries including Indonesia, Sri Lanka, India, and Thailand. With US$7.7 billion worth of projects and programs allocated by nearly 500 organizations from various countries, Tsunami post-rehabilitation and reconstruction projects are the largest in developing countries (Takahashi et al. 2007). Compared to other countries, Indonesia bears the heaviest losses. The provinces of Aceh and the Nias Islands (below the Province of North Sumatra) are the two areas most severely affected by the disaster (Azmeri, C., et al, 2017). Aceh suffered a loss of almost 97% of its local GDP and lost 4% of its population (S. Jayasuriya, et al, 2008). The following table shows the amount of damage in Indonesia as a result of the disaster.

Table 1. List of Damage/Loss/Victims Due to the 20024 Tsunami Disaster in Indonesia

No	*Damage/Loss/Victims*	*Number*
1	people died	165.708
2	refugees	514.150
3	House destroyed	120.000
4	Broken house	70.000
5	Street	3.000
6	Government building	1.052
7	School building	2.000
8	Public health center	114
9	Agricultural land	60.000 ha
10	Small and medium enterprises	100.000
11	Students lose their school	167.228
12	Teacher died	2500

Based on the data above, housing construction projects were the most common during the post-Tsunami rehabilitation and reconstruction process in Aceh. With a large number of houses that need to be built quickly and the wide coverage area of assistance, the housing reconstruction projects for assistance are sourced from various institutions with varying amounts of aid. As a result, there are variations in the design and quality of the aid houses built.

The objective of this study is to perform a quick evaluation of the satisfaction of residents of the post-tsunami relief houses. It will yield initial data for more in-depth research in the future and also as a reference for the local government related to aid housing design.

2. LOCATION

Banda Aceh as the capital is one of the areas most severely damaged by the 2004 earthquake and tsunami compare to other cities (Rahmayati, Y., 2017). The city of Banda Aceh consists of nine (9) sub-districts and ninety (90) gampong (villages) https://bandaacehkota.go.id/p/kecamatan_gampong.html). Meuraxa is one of the sub-districts affected by the death toll reaching 92.72% of the total population because it is close to the source of the earthquake and is directly opposite the Indian Ocean. In the picture below, it can be seen that the area with the dotted line is Meuraxa District which has an area of 726 Km^2.

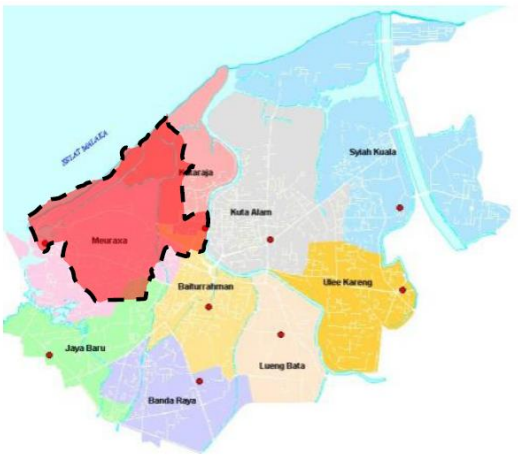

Figure 1. District in Banda Aceh City

Considering the large enough coverage area, this preliminary study focuses on five (5) houses selected based on: there is no duplication of house types among the selected villages (*gampong* in Acehnese); the house still looks original house design elements (not completely dismantled or newly built); there are at least 10 houses of the same type in one *gampong*; and last, the occupants allowed the researcher to evaluate the house. With these criteria, this study collected five houses randomly in five *gampong:* Blang, Lamjabat, Cot Lamkuweh, Blang Oi, and Lambung.

3. METHODOLOGY

Data collection techniques are through direct observation of the sampled house and interview of residents in which the house is the sample. The data analysis technique in this study uses qualitative approach based on the Miles and Huberman Model data analysis:

a. Data reduction: The data that has been collected will be categorized or grouped into data that is very important, less important, and not important. The next stage focuses only on data that is in the important category;
b. Presentation of data: Data is arranged in tabular form. The goal is to make it easier to understand; and
c. Drawing conclusions: Finding conclusions from all research.

4. RESULT AND DISCUSSION

Francescato et al (1979) defined housing satisfaction as an emotional response to one's place of residence; positive or negative feelings that residents have about their home. Resident satisfaction has been used since the early 1960s as a basis for optimizing the architectural design of large housing developments, where feedback is collected from residents of housing projects relating to residents' views on the physical features of the proposed housing development and then providing those views. back to the design process. The current method of choice for assessing housing satisfaction uses a structured survey followed by a statistical correlation of variables (Furbey & Goodchild, 1986). Studies using occupancy satisfaction as a measure of occupancy quality use the features of housing units, services, and facilities provided in residential areas and residential neighborhoods to determine the extent to which a person is satisfied with existing occupancy units (Amerigo & Aragones, 1990). Moreover, it is understood that housing adequacy (i.e. natural lighting, circulation, etc.) is a variable to measure the adequacy of housing characteristics in meeting users' needs namely expectations, and aspirations (Eggers and Moumen (2013). Therefore, feelings of discontentment and dissatisfaction may suffice if the quality of housing is perceived to be inadequate in meeting residents' expectations and aspirations (Mohit et al., 2010).

When referring to the regulations in Indonesia, a minimum decent house is referred to as a Simple Healthy Home. The conception of the Simple Healthy Home is enshrined in the Decree of the Minister of Settlements and Regional Infrastructure No. 403/KPTS/M/2002 concerning Technical Guidelines for Healthy Simple Houses. By considering

and utilizing local potentials including physical potentials such as building materials, geology, and local climate as well as socio-cultural potentials such as local architecture, and way of life. Simple Healthy Homes are houses built using simple building materials and construction but still meet the following standards:

a. Minimum requirements of time and space

The space requirement per person is calculated based on basic human activities (sleeping, eating, working, sitting, bathing, latrine, washing and cooking activities, and other space for movement) in the house. From the results of the study, the space requirement per person is 9 m2 with the calculation of the average ceiling height being 2.80 m.

b. Health and comfort needs

The house as a place to live that meets the health and comfort requirements is influenced by 3 (three) aspects, namely lighting, ventilation, and air temperature and humidity in the room.

These are the five houses that were evaluated in this study:

Gampong Blang

According to the informant, the aid housing obtained in general is still of good quality. It can be seen from the condition of the walls that have no cracks until now. However, the condition of the frame and the window or door leaf has been replaced because mostly it is already damaged. At first glance, the size of the relief houses in this village is larger than the relief houses in other villages. Even though it's the same as other relief houses, the houses do not have a kitchen and the size of the bedroom is still too small.

Figure 2. The relief house in Gampong Blang

The informant emphasized that in principle, he and his family accepted and were grateful for the assistance that had been given even though there were shortcomings in some parts.

Gampong Lamjabat

The resource person is a tenant in the relief home for more than 7 years. In general, he felt comfortable with this relief house. For example, the house is bright from natural lighting and the room is not stuffy. But there are some parts of the house that have been damaged and replaced. One of them is the ceiling where everything has been replaced.

Figure 3. The relief house in Gampong Lamjabat

Compared to other aid houses in the same village, according to sources, he still prefers this model of the house he rents (one floor). According to him, the two-story house is troublesome, especially for elderly residents.

Gampong Cot Lamkuweh

The resource person in this village is an active person in the village office. He was also the one asked by the village head to accompany our team to see the relief houses in this village.

Figure 4. The relief house in Gampong Cot Lamkuweh

The resource person expressed his pride in the assistance house from Up Link in his village. In addition to getting houses on stilts so that the lower floor can be used to build a shop, the quality of the structure of Up Link's aid houses is indeed much better than the houses of other organizations.

Gampong Blang Oi

Resource persons said that the house is one of the residents who got the aid house early in his village.

Figure 5. The relief house in Gampong Blang Oi

In general, the shape and condition of the house are good. But the most disturbing thing is the size of the bedroom which is too narrow so that if it is filled with a bed and wardrobe then there is no space left for praying. Moreover, the shape of the house is also too plain and less aesthetic. But he is grateful because the quality of the floors, walls, and ceilings is in good condition.

Gampong Lambung

The resource persons in this village are husband and wife. They got a relief house on their own land. Although there was a slight shift in location because it had to adapt to the new village planning after the tsunami. They claim that as a result of the adjustment, some of their lands have been lost due to the construction of roads.

Figure 6. The relief house in Gampong Lambung

In the interview, the residents emphasized that they are grateful for getting a house for assistance, even though now the condition of many of their houses has been damaged, such as the floors and frames. The occupants also regret not getting a kitchen in their assisted house.

5. CONCLUSION

The results of the study found that in general, the residents were satisfied with the assisted housing but there were several aspects that became dissatisfied, such as: bedroom/bathroom area that was too small, no kitchen, material quality or construction that was damaged. From the feasibility of occupancy, the average house is decent. The results of this brief evaluation can be used as input for the local government to know the condition of the houses of its citizens, especially those who live in post-tsunami relief houses. If there is already more comprehensive research, it is expected that the results of this study can be used as a reference for the design of aid houses in Indonesia in the event of another disaster, especially from the aspect of occupant satisfaction and the feasibility of the aid housing.

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