Evaluation of Handover Practice in Post-disaster Reconstruction in Aceh Province, Indonesia

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ABSTRACT

As the largest reconstruction project in the developing world at the time, Aceh’s post reconstruction experience may provide useful lessons on how aid is delivered particularly for public buildings and facilities as one of the largest amount of projects after housing. In Indonesian construction industry, among many stages of construction process, handover is still commonly underrated or even skipped. This is no different in the case of post-disaster reconstruction where challenges raised as there were pressures to build thousands of facilities in a limited amount of time and need to be occupied as soon as possible. This study objective is to evaluate the handover practice in post-disaster reconstruction of public buildings and facilities after being occupied. The survey focused only for buildings constructed by the Indonesia government agency (BRR) and managed to cover 24 buildings that are divided into government offices, schools and community health centres in Banda Aceh, the capital city of Aceh province from total 53 buildings available. Questionnaires were distributed to respondents which are government staff that responsible for the building operational with a response rate of 54%. The survey results show that the handover process is not completed and therefore the respondents doubt with the building quality. Though, respondents are neutral in accepting buildings without proper handover because they understand the urgency of operating public buildings and facilities immediately in emergency situation. Respondents still urged for post-occupancy evaluation by independent committee and fully agreed for proper handover practice in the future. As for final recommendation, conducting project evaluation by independent committee is essential even most of the buildings already being used and might replace the lack of handover administration stage for legal solution in government assets in the context of Aceh’s post-reconstruction.

Keywords: Evaluation, Handover, Post-disaster reconstruction, Public buildings, Aceh.

1. INTRODUCTION

In the history of disaster management in Indonesia, the central government first formed a temporary but powerful agency that aimed to respond to the effects of the massive earthquake and tsunami disaster on 26 December 2004. Aceh and Nias Rehabilitation and Reconstruction Agency, named Badan Rehabilitasi dan Rekonstruksi (BRR) Nanggroe Aceh Darussalam (NAD) or Nias, was formed by the Indonesian government on 16 April 2005 as the central government representative responsible for coordinating and conducting all rehabilitation and reconstruction activities in Aceh and Nias based on Republic Indonesia Statute Number 10/2005. The agency was temporary because the working period was only four years, but it was powerful because of its special authority to manage USD 6.7 billion of total funds. BRR NAD-Nias (hereinafter BRR) was based in Banda Aceh, the capital city of Aceh province (see Figure 1), to be “close to the action” and to be responsive to the local context. Flexibility and know-how, together with a culture of risktaking, were the central aspects of the success of BRR, which led to several important breakthroughs and innovations [1]. A total of USD 2.6 billion was given to the BRR for the implementation of programs or projects [2]. Four years later, in 2009, BRR completed 94.7% of the
total key performance indicators (KPI) determined by the Presidential Regulation no. 47 year of 2008 [3]. This achievement was considered a high record [1].

However, negative issues were raised regarding corruption and delivery of poor reconstruction quality. GERAK (Anti-Corruption Movement) and Indonesian Corruption Watch (ICW) discovered Indonesian rupiah (IDR) 23.8 billion worth of the total project had problems [4]. The problems included mark-up, unauthorized selection, corruption in at least five major BRR departments such as the publication of reports, appointment of staff, procurement of office equipment, illegal subcontractor practice, non-targeted donation, aid cutting, and non-specification-based project implementation [5]. Until BRR was dismissed, 6.3% of the KPIs have not been accomplished based on Presidential Regulation Number 3 of 2009 [6]. Another problem left by the BRR is that reconstructed assets directly built by the agency were not transferred “legally” to the Aceh government [7, 8]. Based on the Ministry of Finance Regulation of Indonesia Numbers 62/2008 and 134/2009, these assets must be turned over to the Aceh government. Unfortunately, in the final report of transition team under the Aceh Governor Transformation Programme (AGTP) funded by the United Nations Development Programme (UNDP) in 2009, none of the Aceh provincial reconstruction assets was transferred to the Aceh provincial government [8]. Problems in assets that were found included no documents, unclear ownership, unclear maintenance budget, damaged assets, no asset found, not functional, unfinished, and still ongoing projects. Although these reports only focused on the assets of the Aceh provincial government, it can be considered as a sample of the whole reconstruction asset picture in Aceh.

One independent research institute named Aceh Institute (AI) recommended an independent institution to assist in the transition process and to perform asset mapping, asset verification, and asset evaluation [9]. In 2008, the World Acehnese Association (WAA), with its headquarters in Denmark, demanded auditing of the BRR [10]. However, BRR rejected the idea of external and independent evaluation, but decided to do the handover process with only internal verification [2].

The Aceh government already occupied most of the assets, and faced problems alone because most donors have left and the BRR has been dissolved on April 2009. Therefore, this study aims to obtain the perspective of building users regarding the necessity of evaluation despite their occupying of those buildings, the condition of reconstruction assets during occupancy, and the decision of the Aceh government to occupy the assets even without a proper turnover. The importance of this preliminary study maps the state of mind of the beneficiaries, and serves as basis in conducting proper post-disaster asset evaluation in the future. Although an evaluation might not change a decision, as only politics can change such, evaluation of facts that are perceived as valuable has an impact on collective decision [11].
2. RESEARCH QUESTIONS

The main idea of this preliminary study is to determine the general opinions of the postdisaster asset issues. This study developed three research questions to assess the importance of evaluation for post-disaster assets:

1. What is the quality and condition of the assets during occupancy when there was no appropriate transfer and external project evaluation conducted?
2. What are the opinions of the occupants about the idea to conduct asset evaluation during occupation period?
3. What are the opinions of the occupants about the Aceh government occupying assets that have no appropriate handover and no project evaluation?

The answers of these questions may provide a clearer presentation of post-disaster building evaluation in the future.

3. WHY EVALUATION IS IMPORTANT?

From the social science method, Rossi and Freeman [12] define evaluation as the systematic application of social research procedures in assessing social intervention programs. Another definition [13] explores the process of evaluation, which is the systematic collection of information about activities, characteristics, and outcomes of programs to make a judgment about program effectiveness and informed decisions about future programming. Meanwhile, Boulmetis [14] identifies the strengths and weaknesses of a program. He also underlines, despite several evaluation definitions, the same understanding that evaluation is a systematic process. The differences are only based on why the evaluation is performed, which is to determine whether a program has reached its objectives and the purpose of decision making [14]. The keywords for evaluation are assessing or judging, program, information, and improvement. In this paper, evaluation is a process of judging a program by collecting information for improvement in the future.

Weiss [11] states that the common characteristic of an evaluation is the goal of making life better and more rewarding for the people being served. More specifically, evaluation research focuses on the purpose of measuring the effects of a program against the goals it has set out to accomplish as a means of contributing to subsequent decision making about the program and improving future programming. In a disaster management context, Labadie [15] states that monitoring and evaluation for disaster recovery can be significantly enhanced by applying the principles and practices of auditing and assessment to provide objective assurance that systems of governance are actually working. Funders and politicians like to issue calls for accountability (notably for others, not for themselves), and managing for accountability has become a rallying cry in the private and public sectors [16].

Aside from elaborating the importance of evaluation, we need to keep in mind that evaluations still have limitations. The limitations of evaluation are as follows [14]:

1. Evaluation does not guarantee change. Evaluation is not a magical solution. There is always a possibility that evaluation will not result in any improvement. However, evaluation is a step for humans to improve. The unguaranteed result is never an excuse for cancelling the evaluation.
2. Formal evaluation will undoubtedly lead to a wider disclosure of information to various audiences. When more information is known, the program is open to more scrutiny and criticism, which threaten the participants of the program. Thus, they may create an artificial setting, product, or attitude, which can lead to the perpetuation of the status quo.
3. Limitation may focus on trivia. Thus, a formal evaluation may imply that the worth of a program is no more than that which can be behaviourally stated and measured.

With the limitations above, evaluation should be realistic in its evaluation target, process, criticism, and recommendation or solution.

4. EVALUATION IN POST-DISASTER PROJECT

Post-disaster projects have short periods of construction. On the one hand, reality is more complex when there is a responsibility to return things back to pre-disaster state, and not to compromise survival on the other hand [17]. In normal situations, there is still time to plan unlike in post disasters when time is restricted, and human life and the environment need immediate response. Linking post-disaster reconstruction to sustainable development is an important aspect in current disaster management concepts. Debates have raised questions regarding the practicality of adopting developmental approaches for disaster reconstruction. Practical action promotes a holistic and integrated approach to post-tsunami reconstruction, which demonstrates options toward better building projects [18]. By integrating evaluation processes into post-disaster project designs, and by carrying them out both during and at the end of the project, the problems identified can be overcome earlier, and lessons can be learned for facing future post-disaster reconstruction as shown in post-disaster reconstruction cycle (Figure 2). In addition, by establishing an evaluation-centered project, the project will have to be in a continuous cycle of assessment. The project will be more closely connected to the post-disaster environment as a whole, and will be better equipped to recognize problems as they arise such that people can learn lessons and modify objectives and outputs accordingly throughout the cycle [19]. A focus on evaluation creates a legacy of useful lessons for future post-disaster projects.

![Figure 2: Post-Disaster Reconstruction Cycle][20]

The Organization for Economic Cooperation and Development (OECD) states that the aim of evaluation in post disaster is to determine the relevance and fulfillment of objectives, developmental efficiency, effectiveness, impact, and sustainability [21]. An evaluation should provide credible and useful information that enables the incorporation of lessons learned into the decision-making process of both recipients and donors. One of the seven guiding principles for conducting a post disaster project by the Habitat International coalition with the UN is the transparent and effective monitoring of the recovery process [22]. In particular, there should be a clear policy for public disclosure of rehabilitation and reconstruction plans to all affected and nonaffected communities.
A communication and public information campaign would seek to inform the public regarding the scale and scope of the recovery effort.

This study focused on the issue of ex-post evaluation, which was conducted a few years after the completion of the project from perspectives such as impact and sustainability. Evaluation results are used as recommendations and lessons that will help plan and implement effective and efficient projects [23].

5. POINT OF VIEW OF BUILDING USERS

Direct feedback from building users captures information concerning areas where effective improvements can be made, and what measures can be used to lead to greater cost-efficient projects [24]. Therefore, the affected community and the local government should participate with their maximum capabilities. There is no accomplishment if a post-disaster project claimed to be successful did not benefit the target beneficiaries because of its poor results. The accountability for public buildings can only be claimed from the funds coming from aid grants if endorsements from both parties, the donors and the users, are obtained [25].

According to Kernohan [26], people who really know about buildings are the people who use them as they are the experts in what buildings can do. They are true informants on questions of building use and serviceability. User requirements to be applied in buildings should be considered while finalizing the overall requirements. The users include people who will occupy the buildings on completion, and people who are likely to occupy the buildings successively during the rest of the life of the building. There are three types of users, namely, occupants, visitors, and owners [26]. To represent the user side, respondents were chosen from among the occupants who had a correlation with the building, such as owner of the building (representatives from Aceh Government), an operator (a representative from one who operates the daily functions of the building), and the community (representatives from the public who use the building features for their needs).

6. METHODOLOGY

This study used two stages of sampling techniques. The first stage was cluster random sampling, which categorized under building types each sampling cluster as government office, school, and community health center in sub-district level. The term cluster here means any sampling unit with one or more listing units that it can be associated with [27]. The second stage was simple random sampling without replacement, which means that the same respondent cannot participate more than once [28].

The building that will be evaluated is a public building built by the BRR using government funds. To be more specific, the types of buildings are government office, school, and community health center in the sub-district (kecamatan) level (See Figure 3). The area of study was Banda Aceh, which is the capital city of Aceh Province, where there are 50 buildings. The building samples are:

• For the school, the evaluation object is Sekolah Dasar (SD) for elementary school level, Sekolah Menengah Pertama (SMP) for junior high school, and Sekolah Menengah Atas (SMA) for senior high school.
• For the health center, the evaluation object is Pusat Kesehatan Masyarakat (Puskesmas) or the community health center.
• For the government office, the evaluation object are kantor kecamatan or a sub-district government office, and kantor desa/lurah or a village office.
The research uses the quantitative approach, and measures the evaluation objective based on respondent judgment. The instruments for this study are questionnaires. This study uses description methods and descriptive statistics, including median and mode, for each variable. Descriptive methods are used in the evaluation of program resources, services delivered, program clients and their characteristics, and the outcome of the variables. Descriptive methods were also used to measure factors related to the program or policy [29]. Finally, the analysis was compiled from each variable for the final output. Descriptive measurement assesses the program participants, and considers the ideas of building users regarding post-disaster asset evaluation. Frequencies are used to measure each variable.

7.DATA ANALYSIS

7.1. Background of Buildings and Respondents

In the first stage of cluster random sampling, from 50 buildings, this study managed to cover 45% of the buildings comprising the government office, school, and community health center built in Banda Aceh at a sub-district level. The government office represented 39% of the buildings, the school represented 67% of the buildings, and the community health center represented 60% of the buildings. The total value of the selected buildings is USD 1,727,954. For the building status, 88% of buildings were completed and occupied.

The research participants or respondents were the building users. Majority of the respondents were above 25 years old, male, and Acehnese, which was defined as being born in Aceh and or staying in Aceh for more than 10 years. From 50 target respondents, only 27 returned the questionnaire for a response rate of 54%.

7.2. Research statement number 1: No doubt for the quality and condition of postdisaster assets in Aceh

Table 1 shows the percentage output for research statement number one. In total, 72% respondents disagreed with the questionnaire statement. Only 20% of respondents agreed, and 8% respondents remained neutral. Therefore, majority of building users doubted post-disaster building quality and condition.

| Description     | Frequency | Percentage |
|-----------------|-----------|------------|
| Strongly Disagree| 4         | 16.00%     |
| Disagree        | 14        | 56.00%     |
| Neutral         | 2         | 8.00%      |
| Agree           | 4         | 16.00%     |
| Strongly Agree  | 1         | 4.00%      |

Based on previous research with the same buildings, the three most important aspects that building users said were in poor condition were building materials, sanitation, and building construction strength [25]. Hence, the findings of this study supported another study with its user uncertainty with the reconstruction quality. With this finding, there is a possibility that post-disaster buildings could suffer quality issues in general. This point can also further assume that the
reconstruction process was not conducted well. Poor quality of assets may indicate that there was poor operational and maintenance management during occupancy. However, determining whether the poor quality of buildings had any direct relation with inappropriate handover needs further study.

7.3. Research statement number 2: Need to conduct asset evaluation even the buildings are already occupied

Table 2 displays the percentage output for research statement number 2. Overall, 92% of respondents agreed that asset evaluation must be conducted even if a building has been occupied for several years. Only 4% of respondents disagreed, and 4% were neutral. This finding clearly shows that the majority of users endorsed building evaluation.

Table 2 Necessity conducting assets evaluation even Aceh government occupied the assets

| Description       | Frequency | Percentage |
|-------------------|-----------|------------|
| Disagree          | 1         | 4.00%      |
| Neutral           | 1         | 4.00%      |
| Agree             | 17        | 68.00%     |
| Strongly Agree    | 6         | 24.00%     |

Battencourt et al. [30] believed that the importance of learning throughout the course of recovery and reconstruction programs cannot be understated since these projects require long-term timeframes. They required a learning-by-doing adaptive process, which relied on periodic evaluations. Occupied buildings did not undermine the importance of conducting evaluation, especially if buildings did not have proper handover and were built using public money.

7.4. Research statement number 3: Occupying assets that have no proper handover and external project evaluation

Table 3 shows the finding for the last research statement. The results are divided into two big groups, and 44% respondents disagreed and 48% respondents agreed, while only 8% respondent remained neutral.

Table 3 Aceh government-occupied assets where there was no evaluation by an independent committee during handover

| Description          | Frequency | Percentage |
|----------------------|-----------|------------|
| Strongly Disagree    | 6         | 24.00%     |
| Disagree             | 5         | 20.00%     |
| Neutral              | 2         | 8.00%      |
| Agree                | 10        | 40.00%     |
| Strongly Agree       | 2         | 8.00%      |
In the context of a state of emergency in post-disaster periods, there are doubts on whether the Aceh government should receive the assets even without an accurate handover and an evaluation by an independent committee. These measures must be implemented because project evaluation takes time even when assets are urgently needed to resume operations at Aceh after the disasters. Government assets are important for the basic needs of the communities as well as the presence of the government. Although time constraints will be always critical during post disaster, the sustainability of the project should not be neglected. From the Tsunami Evaluation Coalition (TEC) reports, the concern is not only the practical aspects of moving beyond immediate recovery into long-term reconstruction and sustainable improvement, but also on the credibility and accountability of the process used for this transition [15].

8. CONCLUSION

As a preliminary study, we captured the point of view of building users regarding the quality of reconstruction assets, the necessity for conducting evaluation during occupancy, and the decision of the Aceh government to receive assets without proper handover. Most of the users doubt the quality of the buildings and support building evaluation even though they have already occupied the buildings. Citizens, taxpayers, stakeholders, and beneficiaries want to know that their expenditures, not only in terms of money, but also time, effort, suffering, and emotional capital, would result in something better [15]. From a previous study on the same buildings, the BRR failed to fulfill the most important factors in the construction of quality buildings from the point of view of the beneficiaries [25]. Doubts on building quality can be the starting point for an external and independent evaluation even during occupation periods.

Meanwhile, the decision of the Aceh government to accept assets without an unclear handover process separated building users according to the users who agreed and disagreed. The consideration is the urgency to utilize these assets as soon as possible after post-disaster. Changing the past is impossible, but meaningful lessons could be learned from the enormous efforts on disaster reconstruction in Aceh. Perhaps conducting an external and independent evaluation during project handover can result in improvement in the future.

Further studies based on this survey need to focus on post-disaster evaluation during the occupancy period. These studies should concentrate on what type of evaluation is suitable, and what procedure should be followed during post rehabilitation and reconstruction in Aceh. Future studies regarding this issue have to expand the sample buildings and affected districts in Aceh, Indonesia. This study recommends that the Aceh government should conduct an asset evaluation through an independent committee that is funded by international donors who have no direct interest on the assets.

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