Leaving Problematic Assets Behind: Lessons from Post-tsunami Reconstruction in Aceh

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Abstract. Tsunami shaken the Indian Ocean in 2004 as the fourth-largest earthquake in a century erupted underwater off the Indonesian province of Aceh. Killing 227,898 people across 14 countries, with Indonesia, Sri Lanka, India, and Thailand the hardest hit. Aceh was struggling under more than 30 years of armed conflict whilst facing one of the deadliest natural disasters in modern history. As a blessing in disguise, the post-tsunami reconstruction has opened many opportunities for Aceh: ending the long civil war and receiving aid predicted as much as US$ 6.1 billion. The Indonesia government claimed to have built more than 12,000 homes, 3,500 kilometers of roads, 266 bridges, 20 ports, 12 airports, 954 health facilities, 1,450 school buildings, and 979 public offices. This paper’s objective is to discuss the problem found in those assets to have complete lessons learned perspective. Secondary data was analyzed from the final report of Transition Unit - a temporary body assisting the Aceh Provincial Government during the transition period before reconstruction is officially closed in 2009. This study focused on public buildings under the Aceh Provincial Government that received the highest number of assets. Major problem found: the local government is not prepared to manage large public assets; lack of mutual understanding between local governments and central government; and many assets does not fulfill administration requirement by the Indonesia construction regulations. Types of problematic assets left are: no official documents, unclear ownership, unclear maintenance budget, already damaged, not utilize, and some assets still not finish. These findings may impact the sustainability of the public buildings and may increase the vulnerability factor in facing disaster in the future.

1. The 2004 Indian ocean tsunami and fatality damage in Indonesia

This year, 2020 on 26 December would be exactly 16 years after the Tsunami struck in the Indian Ocean. On 26 December 2004 at approximately 00:58:53 UTC (Universal Time Coordinated), when the fourth-largest earthquake in a century erupted underwater off the Indonesian province of Aceh [1], it struck a geologically violent region – a “hot zone” where two of plates that make up the Earth’s surface collide [2]. This powerful jolt, with a magnitude of 9.3 Richter scale, moved a 1,200 kilometre section of the sea floor [3], and released energy equivalent to that of 550 million Hiroshima atomic explosions [4]. Then the sea receded abruptly from land – and began to rise up in waves as high as a three-story building, accelerating to speeds of more than 500 kilometers per hour [5]. The Indian Ocean tsunami caused widespread devastation [6], killing 227,898 people across 14 countries [7]. Some effects were felt as far away as Somalia and Kenya on the east coast of Africa [8]. These tsunamis were so powerful that they killed one person on Blue Horizon Beach, Port Elizabeth, South Africa, some twelve hours later and over five thousand miles away [1]. The dead included citizens of 40 nations and the damage totally estimated nearly US$ 10 billion [9]. Comparing to other countries,
Indonesia has borne of the losses. Aceh province and Nias islands (under North Sumatera province) are the two regions that affected by the disaster [10] which destroyed almost 800 km along the beach with depth of 1-6 km inland [11]. As a province, Aceh suffered the most destruction [12] (detriment 97% of local GDP and loss 4% of population) [8]. Next table shows the number of damage in Indonesia due to the disaster. Based on the government report, 165,708 lives were accounted for as dead and 514,150 as displaced in Indonesia [13]. The sector that experienced most damage in Indonesia has been housing and human settlements: 120,000 houses were destroyed not including 70,000 houses damaged which in total accounts for 47.9 per cent of the total damage [14].

| Damage                        | Numbers  |
|-------------------------------|----------|
| People died                   | 165,708  |
| Refugees                      | 514,150  |
| Houses destroyed              | 120,000  |
| Houses damaged                | 70,000   |
| Sea port                      | 14       |
| Bridges                       | 120      |
| Roads                         | 3,000    |
| Government buildings          | 1,052    |
| School buildings              | 2,000    |
| Health centers                | 114      |
| Fish ponds                    | 20,000 ha|
| Agriculture lands             | 60,000 ha|
| Small medium enterprise       | 100,000  |
| Students lost their schools   | 167,228  |
| Teacher died                  | 2,500    |

This natural disaster was coupled with the fact that Aceh is among the poorest provinces of Indonesia, crippled by both armed conflict and pervasive corruption [4]. Since 1976 when the Free Aceh Movement (GAM) demanded independence from Indonesia government [15], Aceh lived under war, with severe restrictions on movements [16]. Beforehand, Aceh Governor was arrested for corruption in 2005 [17, 18] and similar case happens again with the current Aceh Governor sentenced to 7 years in prison in 2019 [19]. The tsunami forced open access to Aceh, which was previously off limits to aid agencies [20]. The presence of many internationals in Aceh then helped increase the sense of confidence, and made local actors (including government bodies) realize that peace, security, human rights, could emerge in an internationalised framework [2]. The disaster had a deep influence on the peace talks between GAM and the Indonesian government and on the eventual implementation of the peace agreement reached [21]. The reconstruction of this major disaster has posed a tremendous challenge to all the governments, international communities, professionals, practitioners and the civil societies to bring different expertise and experiences together to share with each other [22]. As one of the biggest disaster in modern history, the post-disaster reconstruction of the Indian Ocean Tsunami provide many lessons to learn [20], not only to improve knowledge in disaster management context but to reduce risk by not creating the same mistake again [23].

2. Post-tsunami reconstruction in Aceh province, Indonesia

2.1. The BRR NAD-Nias.
Announced as a national disaster by Susilo Bambang Yudoyono, Indonesia President, on April 16th 2005 formed Badan Rehabilitasi dan Rekonstruksi (BRR) or Rehabilitation and Reconstruction Agency for NAD (Nanggroe Aceh Darussalam) and Nias as an official Indonesia Government agency [24]. The BRR NAD-Nias has four years operational period and a mandate directly from the Constitution [25]. Figure 1 illustrated the two main function of BRR NAD-Nias: one is to implement
project from government budget and second is to coordinate project conducted by other agencies. Every actor in post-disaster reconstruction projects in Aceh and Nias must coordinate with the BRR NAD-Nias where an estimated 463 agencies were involved with implementing projects, dominated by the NGOs [20].

This temporary but powerful agency was given full authority to manage all aspects of the tsunami recovery in Aceh on behalf of the central government, which allowed for a much smoother coordination process, devoid of any potential inter-ministry politics and bureaucracy [2]. The BRR NAD-Nias headquarters was located in Banda Aceh, the provincial capital of Aceh. The range of BRR’s implementation fields are branched into seven directorates: infrastructure; housing; religion, social and culture; government institutional; education and health; economy; and agriculture and fishery [14]. They also divided the area of work into six regionals [24]:

- Regional 1 (North Aceh: Sabang, Banda Aceh, Aceh Besar and Aceh Jaya);
- Regional 2 (East Aceh: Pidie, Bireun, Lhokseumawe and Aceh Utara);
- Regional 3 (South East Aceh: Bener Meriah, Aceh Tengah, Gayo Lues, Aceh Tenggara, Aceh Timur, Langsa and Aceh Tamiang);
- Regional 4 (West Aceh: Aceh Barat, Nagan Raya, Aceh Barat Daya and Simeuleu island);
- Regional 5 (South Aceh: Aceh Selatan, Aceh Tenggara and Singkil); and
- Regional 6 (Nias: Nias and Nias Selatan).

2.2. Public building built by the BRR NAD-Nias.

The total budget that is allocated for the Aceh – Nias recovery predicted IDR 54.9 trillion or US$ 6.1 billion [20]. From that total, IDR 23.4 trillion or US$ 2.6 billion is sourced from the government or grants from international donors that are donated through the government [25]. This entire on-budget funds are implemented by the BRR NAD-Nias with output of soft program (such as livelihood, training, etc.) and hard program (infrastructure project) [14]. Besides houses, the main construction products are public building and facility, such as: school, hospital, sport centre, government office, mosque, public market, warehouse, museum, escape building, public hall, etc [24] while livelihood restoration was given secondary consideration. Meanwhile, this disaster resulted in disruption of the households’ livelihood that relies on aquaculture activities as well as on the natural resources such as the mangroves found in the aquaculture farms along the coastal areas [26]. As one of the largest reconstruction program in the developing world at the time, Aceh hosted around 2.200 projects across

**Figure 1.** Function of the BRR NAD-Nias in post-tsunami reconstruction in Aceh (Source: BRR [24])
all sectors implemented by more than 400 actors [20]. After four years, the BRR NAD-Nias claimed to have successfully accomplished such a remarkable number of projects including 140,304 permanent houses, 3,781 religious facilities built or repaired, 1,759 schools built; 1,115 health facilities; 996 government buildings, 363 bridges, 23 ports, and 13 airports or airstrips constructed [24] (Table 2). Of course, this achievement was considered a high record [2] for post-disaster reconstruction model in developing country.

| Table 2. four-year achievement rehabilitation and reconstruction by the BRR NAD-Nias |
|----------------------------------|----------------------------|
| **Achievement**                  | **Numbers**                |
| Laborers trained                 | 155,182                    |
| Small medium enterprise received assistance | 195,726                  |
| Teachers trained                 | 140,304                    |
| Hectares of agricultural land reclaimed | 69,979                   |
| Permanent houses built           | 39,663                     |
| Fishing boats built or provided  | 7,109                      |
| Religious facilities built or repaired | 3,781                   |
| Kilometers of road constructed   | 3,696                      |
| Schools built                    | 2,000                      |
| Health facilities constructed    | 1,115                      |
| Government buildings constructed | 996                       |
| Agriculture lands                | 60,000 ha                  |
| Bridges constructed              | 363                       |
| Ports constructed                | 23                        |
| Airports or airstrips constructed | 13                      |

2.3. Asset handover in post-disaster reconstruction.

Just like other projects, after completed it needs to hand over to the respective owner. Since the BRR NAD-Nias is representative of the central government, all the hand over process is under their responsibility especially for projects they constructed [27]. The Minister of Finance Regulations number 62 year 2008, number 134 year 2009, and number 96 year 2007 regulated the procedural process for the BRR NAD-Nias in order to transfer the rehabilitation and reconstruction assets to the Aceh government as the end users [28]. Since 2007 the BRR NAD-Nias began the process of the transition with local authority through approach such as Joint Secretariats (between local authorities, BRR, and other reconstruction agencies) [29]. In addition, the Aceh Recovery Framework (ARF) - a comprehensive “roadmap” to sustainable recovery, was drawn up under the guidance of Aceh Governor to ensure that the handover is successfully in the long term [30]. This framework led by provincial government chairs and supported by the Agency and international partners, attempt to provide capacity building and asset management to support the handover from the BRR NAD-Nias to the local government [31].

3. Methodology

This research used secondary data for the basis of analysis. Besides analyzing open source reports related with assets in post-disaster reconstruction in Aceh, the main data used is based on a report published by the Transition Unit - a temporary body assisting the Aceh Governor during the transition period before reconstruction is officially closed in 2009. This unit is under the Aceh Government Transformation Programme (AGTP) funded by the Multi Donor Fund (MDF) and lead by the United Nation Development Programme (UNDP) Indonesia [32]. The goal of the AGTP is to strengthen the capacity of Aceh’s provincial government and ensure that it has the wherewithal to efficiently assume the responsibilities, functions, resources and assets it will inherit from the BRR NAD-Nias in 2009 [33]. Another main data source is the final evaluation report from AGTP-UNDP itself in 2012 as their supporting program in Aceh ended.
One of the Transition Unit roles is to collect data of assets owned by the Aceh provincial government that was built by the BRR NAD-Nias. On Transition Unit’s final report in 2009, they have verified total assets worth of 1.2 trillion rupiah under the Aceh provincial government \[31\]. Usually, those assets are registered by each agency under the Aceh province government such as: public health, education, industry and commerce, etc. Therefore, the analysis of this study only represent Aceh provincial government assets and not from the city or regency government level. In total there are 18 regencies and 5 cities in Aceh administrative sub-division. However, as the provincial government owned the biggest assets, the results from this study are confidence enough to represent a comprehensive picture of assets from the post-tsunami reconstruction in Aceh.

4. Post-reconstruction assets left behind

4.1. Issues during Post-Disaster Reconstruction Process.

One side story of the thriving achievements of the BRR NAD-Nias is commonly heard as part of the government advertisement (see the BRR NAD-Nias book report series \[24\]). However, looking at the extraordinary numbers of projects and funds in a short period of time, it is no surprise there are many issues raised during the reconstruction which may influence the outcome of today \[10\]. A local non-governmental organization named GERAK-Aceh that focus for anti-corruption together with TIFA Foundation (a grant-making organization that works to promote an open society) published a joined report in 2006 which discovered a total of IDR 23.8 billion from reconstruction projects worth was found problematic. These problems only for projects implemented in 2006-2007 that includes: mark-up, unauthorized pickings, corruption, illegal subcontractor practice, non-targeted donation, aid cutting and non-specification-based project implementation \[34\]. An official report from BPK (Finances Investigation Body) of Republic Indonesia on their investigation in 2006 and 2007 founds several problems such as school and health facilities buildings that are not finished and neglected. Another report from a local think-tank organization “the Aceh Institute” in 2010 found seven type of problems in the post-reconstruction projects \[35\]:

- Double source of funds;
- Fake projects;
- Government asset on private land;
- Claimed projects that are not funded by the BRR NAD-Nias;
- Assets cannot be found or unclear status;
- Building with different specification as in the contract;
- Assets already broken or ruined before handover.

Due to many negative issues \[12\], there are requests to have an independent external project appraisal on the BRR NAD-Nias before they handover project and dismissed. One is from the World Acehnese Association (WAA) that is based in Denmark had called for an audit of the BRR NAD-Nias in charge of managing national and international funds for victims of the 2004 tsunami in Aceh \[36\]. The BRR NAD-Nias rejected the idea and decided to do the handover process with only internal verification \[35\]. The mechanism for monitoring and evaluation of the rehabilitation and reconstruction process at the provincial level is conducted entirely by the BRR NAD-Nias \[37\].

4.2. Incomplete Handover Process.

The AGTP-UNDP final evaluation report (2012) stated that rehabilitation and reconstruction assets are transferred and capacity of districts governments to manage these assets is enhanced \[33\]. They do admitted that the objective to consolidation of asset transfer support were clearly not achieved, but the AGTP effectively delivered support for some Rp2.25 trillion worth of assets being transferred to the province of Aceh and its districts.
“While it is quite clear that the maximum of nine months available to achieve this output was not realistic and that AGTP cannot claim that rehabilitation and reconstruction asset transfer has by any means been completed, the evaluation team is of the view that work under this output has been very effectively delivered” - The AGTP-UNDP (2012)

Slightly different, the Transition Unit stated in their final report (2009) that the reconstruction asset is not yet fully transferred from the BRR NAD-Nias to Aceh Government. The latest status in the asset transfer process is receiving the official letter of management acceptance (BASP). Meanwhile, according to Indonesia regulations, to be officially transferred must receive the official letter of acceptance (BAST) [31].

“In fact, until this report was printed as December 2009, not a single reconstruction asset had been fully transferred to the Aceh Government. The latest status of those assets is only in the form of a temporary BASP (Management Handover Minutes)” - The Transition Unit (2009).

From both reports, for off-budget projects (non-government projects and financial sources) the owner received assets directly from the contractors where no proper handover process conducted. There were no formal procedures that could be used to check the final product and legal documents of the contractors [31]. While based on common procedure in project management, administrative closure consists of verifying and documenting project results to formalize acceptance of the product of the project by the sponsor, client, or customer [38].

4.3. Problematic Assets.

Building better than before was the basic premise applied to housing and settlements held by the BRR NAD-Nias [29] famously stated by the BRR NAD-Nias leader repeatedly. “Building back better” (BBB) means the use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies, and the environment [39]. Despite the huge amounts of funding, the tsunami response showed the same problems of inappropriate aid, lack of consultation with beneficiaries, and competition between agencies as in other large emergencies [40]. Aid agencies have failed to meet the high standards that agencies set for themselves. Rahmayati, Y. argues that the BBB concept is good in policy but not working in practice from the study of housing recipients of post-tsunami in Aceh that were dissatisfied with their new houses [41]. Table 3 shows the list of problematic assets owned by the Aceh provincial government based on the data from Transition Unit final report in 2009 [31].
### Table 3. Problems in post-disaster reconstruction assets

| Government Agency | No | Project | No Document | Not finish | Asset not found | Undergoing Damaged | Others | Information |
|-------------------|----|---------|-------------|------------|----------------|--------------------|--------|-------------|
| Connection, Communication, Information & Telematics | 1 | Rehabilitation of PWI building | X           | X          |                |                    |        | Construction contract value is smaller than the building value |
|                    | 2 | Cargo terminal | X X X X |            |                |                    |        |             |
| Syariat Islam      | 3 | Rehabilitation of office building | X X |                |                |                    |        | Half damaged |
| Forestry and Plantation | 4 | Construction of office buildings and gate | X | X          |                |                    |        | Minor damaged |
|                     | 5 | Rehabilitation of UPTD-BLLTP office building | X | X          |                |                    |        | Construction contract value is smaller than the building value |
|                     | 6 | Residential building – Agency of Forestry and Plantation | X X |                |                |                    |        | Not utilize |
|                     | 7 | Construction gate, parking lot and etc. | X X X |            |                |                    |        |             |
|                     | 8 | Improvement the Task Unit office | X X |            |                |                    |        |             |
|                     | 9 | Construction compound | X X |            |                |                    |        | Leaking on the roof |
| Health             | 10 | Relocation building – Akper Cut Nyak Dien | X X X |            |                |                    |        |             |
| Mines and Energy   | 11 | Rehabilitation laboratory | X X X |            |                |                    |        |             |
| Cultural and Tourism | 12 | Construction of multifunction building | X X |            |                |                    |        | Exterior paint exfoliate |
|                     | 13 | Rehabilitation open theatre – culture park | X | X          |                |                    |        | Minor damaged |
|                     | 14 | Rehabilitation exercise stage – culture park | X | X          |                |                    |        | Minor damaged |
|                     | 15 | Aceh Tsunami Museum | X X X |            |                |                    |        | Not utilize |
| Inspectorate       | 16 | Construction of library building | X X |            |                |                    |        | Major damaged |
| Youth and Sports   | 17 | Construction of office building | X X |            |                |                    |        |             |
|                     | 18 | Construction of sport hall and multifunction building | X X X |            |                |                    |        |             |
|                     | 19 | Construction building - IPSI | X X X |            |                |                    |        | Not finish |
|                     | 20 | Rehabilitation of the swimming pool Tirta Raya | X X |            |                |                    |        |             |
|                     | 21 | Construction youth building | X X |            |                |                    |        | Not utilize |
| Agricultural Crops | 22 | Rehabilitation of the agency residential building | X | X | The budget is not in accordance with product. |
In general, there are six types of problems found in Aceh provincial government assets:

- No official documents: all assets do not have a complete documents that mandated by Indonesia Construction Regulations;
- Unclear ownership: there are cases where none of the agencies under Aceh provincial government claim to be the owner of the asset;
- Unclear maintenance budget: some of the assets are neglected during verification and most of the reasons due to no maintenance budget available or beyond the agency financial capacity;
- Asset damaged: there are cases where assets already in minor or major damage condition even before being utilize by the owner;
- Not maximal functional: some assets are not maximal utilize due various reasons. There are cases where the design does not fit with the owner needs as an example; and
- Not finish yet: in 2009 when the Transition Unit verified the assets, there are several projects that still undergoing while on contract it is supposed to be finished. This is the year when the BRR NAD-Nias officially dismissed.

5. Lessons learned: lack of preparation for asset handover.
Overall, there are three factors that influence the incomplete handover process from the BRR NAD-Nias to Aceh local government:

5.1. The local government is ill prepared to manage the large number of assets in short period of time.
Handing over government assets must officially following the procedural stated in the national regulations. In order to ensure an effective transition, the recipient (in this case the local governments) need to be well aware of the assets to be transferred so that they may allocate appropriated budgets for maintenance and adequate staff for the asset operation. However, asset transfer considerations have been found to vary and are inconsistent [20]. One side of the problems is local government staff with lack of capacity and experience [42]. A World Bank study in 2007 found several factors limited the capacity of local governments in Aceh during post-tsunami reconstruction [43]:

- Rapid decentralization without capacity increase at the local level. As the role of local governments prior decentralization was primarily to carry out the development priorities of the central government while there was no concurrent increase in the capacity of local government after a rapid decentralization implemented.
- The propagation of new districts. The first democratically held direct elections in Aceh after the peace agreement between GAM and the Government resulted in a large number of newly elected bupati (regional heads) and walikota (city heads) which many with only very limited experience in public administration or development. Aceh has experienced a significant rise in the number of local governments (additional 11 new government were formed since 2000). The World Bank study indicated that on average, the financial management outcomes were fact lower in the newly formed local governments which may be due to: a lack of government infrastructure in the new districts to carry out local government functions effectively and a lack of skilled and experienced personnel if civil servants remain in the originating districts.
- And the conflict. The 30 years separatist conflict may have also adversely affected the capacity of local governments. The conflict may have resulted in a “conflict trap” whereby violence in turn weakens security and institutional capacities, reduced growth, lower incomes, destroys infrastructure, and redirects resources from development [44].

According to Kusumasari et al [45], there are two important areas are under-explored in terms of the role of local government in managing disaster: first, the insufficient attention has been paid to local government in developing countries. Second, the resource capabilities of local government in managing disaster in every stage (pre-, during, and post-disaster) have not been examined. Meanwhile,
there is a growing understanding that local governments play the most active role in emergency operations [46].
A silent issue with many stakeholders is that the many capacity building programmes are designed to build the capacity of someone else [4]: One is the supply-driven nature of capacity “building”, i.e. agencies from more developed countries focusing on someone else’s capacities rather than encouraging local organisations to set their own capacity development agenda, and the second that humanitarian agencies invest in (or just “rent”) local capacities in order to implement their own projects and not to contribute to these local organisation’s own goal. An evaluation by the World Bank, for instance, concluded that most capacity building support by the World Bank lacked an integrated approach and remained too fragmented: activities were scattered over many projects, often not linked to clear objectives [47].

5.2. Lack of mutual aid between the BRR NAD-Nias and local governments
The BRR’s mandate is for four years only and expires in 2009, which meant that its main focus on reconstruction and less on the promotion of longer term development [20]. Nevertheless, making local government effective partners in the reconstruction program was an important goal for the BRR NAD-Nias because it is the local governments that will be relied upon to maintain public facilities and deliver basic services [24]. However, according to Masyrafah and McKeon [20], the involvement of local governments in the relief and reconstruction efforts has been largely symbolic. Ghani and Lockhart [48] stated that a process for connecting citizens’ voices to government is missing in fragile states and context such as Aceh. Given existing capacity constraints, local government in Aceh has not been as involved in the reconstruction effort as it could have been [4]. The early involvement of local government agencies in decision-making process supports the effective transition into longer-term development. The BRR NAD-Nias has established a Coordination Forum for Aceh and Nias (CFAN) or districts and cities Recovery Forums (KRFs), which was designed as an annual forum to bring all stakeholders working in the reconstruction of Aceh and Nias and to provide a platform for discussing progress and challenges [24]. However, these goals of CFAN were not achieved and the KRFs were considered too late in able to be fully effective [20].
Local governments may find that their hands tied when receiving assets that may not align with their own plans and needs. This have once become a polemic between the BRR NAD-Nias and several local governments. There are cases in West Aceh and South West Aceh, where local regional governments refused to accept the assets due to the asset handover process was held without their approval and verification [35]. There is the potential for appropriate legal documentation to be prepared, and for provincial and local governments to be ill-equipped to manage the assets post-transfer [20].

5.3. The BRR NAD-Nias has failed to fulfil the administration requirement for handing over asset that listed in Indonesia regulations.
While most references emphasizes the problem during handover process is due to the weak capability of local government staff, there is not much reference from the aid agencies or donors side of lack capability in transferring the asset. The BRR NAD-Nias has established an Asset Management Directorate to develop a strategy on transferring the assets in terms of the management/operational and legal ownership. However, the Transition Unit under AGTP discovered the main obstacle to handover asset is due to incomplete documents required by Indonesia Regulations. These standard documents should be provided during handover and part of the contract agreement. Based on the Minister of Finance Regulations Number 62 year 2008, Number 134 year 2009, and Number 96 year 2007, some of the administration documents that need to be completed are:

- Ownership documents;
- Official letter of management acceptance (BASP);
- List of documents containing the type, number, location and value of the buildings based on the realization of the budget.

In general, these are the documents should be provided during handover [38]: contracts, building permit, as-built drawing, maintenance and management documents, and documents produced to describe the product of the project (plans, specifications, technical documentation, drawings,
electronic files, etc.). The lack of documents is one of the main reasons for the rehabilitation and reconstruction assets are not able to be transferred appropriately and the Transition Unit have suggested conducting building performance evaluation (BPE) to justify the quality of the buildings in order to replace documents that are not available [31]. Further study regarding BPE method specifically for post-disaster reconstruction buildings is essential.

6. Conclusion

Lesson learned here is how aid agency including international organization or institution underestimates handover process that is part of building or project life-cycle. Handover here is not only documentation matter but also assisting future owners able to operate the building by capacity in financial and technical term. Especially if the donors planned and built asset that does not fit with the end-user needs or even their capacity to operate and manage in the future. It may look good in the donor’s final report with a physically stunning asset as their documentation but in long term, after the donors have left the asset might be neglected. This problem impacts the sustainability and vulnerability of the buildings. The broader issue of the transition to longer term development in Aceh needs to be well managed if it is to be successful. Therefore, the issue of transitioning from the reconstruction phase to the development phase requires further study. The view of the affected groups as passive recipients of aid also affects the level of accountability, as they are not seen as partners to whom the project must answer as to its success or failure. Accountability to the local population engenders a feeling of ownership of the project, which is a key factor for project sustainability. Because fundamentally, disaster should not be seen only in terms of the assets destroyed, but also in terms of the priority to be given to the opportunity they create to cultivate resilience. While there were many successes, the reconstruction efforts did not always pan out as intended [49].

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