Title
Reconstruction through collaboration: Negotiation of the housing process in disaster recovery

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Reconstruction through Collaboration
Negotiation of the Housing Process in Disaster Recovery

By

Bauni Hamid

A dissertation submitted in partial satisfaction of the

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Committee in charge:

Professor Yehuda E. Kalay, Chair
Professor Galen Cranz
Professor Judith E. Innes

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Abstract

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The great Indian Ocean earthquake and tsunami of December 2004 hit many countries in South and Southeast Asia and affected millions of individuals. As such, it led to one of the biggest reconstruction projects in the world, whether considered in terms of the scale of project, number of people impacted, number of institutions involved, total budget, or land area coverage. Hundreds of multinational design and construction firms were involved with the reconstruction along with relevant institutions and donors from various countries, including Indonesia, the country most impacted.

My dissertation is an attempt to find a more effective and efficient means of addressing this complex situation by applying the lessons learned from the Aceh post-disaster tsunami recovery process. Investigating stakeholders' interest in this complex context has been the central issue of my dissertation work. To do so, I have applied theories, particularly those regarding collaboration, that explain the interactional or organizational context as the main tools for my investigation. As I have done so, I have come to realize that although the term *collaboration* was widely used during the course of the Aceh recovery process as a description of the process of working together to achieve specific goals, it is questionable whether the Aceh stakeholders engaged in true collaboration.

The discussion of the urgency of collaboration in complex situations in this dissertation is based on recognition of the importance of using this approach to examine the nature of collaboration from various perspectives and to measure progress during the recovery process. It must be emphasized that collaboration is neither a goal in the process nor a solution to its problems. As such, theories on collaboration are used as *tools* with which to examine the dynamics that existed among the project stakeholders in their work together in the recovery of Aceh. As examination of the current problems in urban planning and design in developing countries has indicated that they arise from complex issues among the stakeholders involved, this investigation of the reconstruction process in Aceh allows for a unique means of identifying the lessons learned from this experience that can be applied to many types of projects.

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Chapter 1
Introduction

1.1 The disaster

July 2009. It was my fourth visit to Banda Aceh after four years of post-tsunami rehabilitation and reconstruction. The Agency of Rehabilitation and Reconstruction of Aceh and Nias-Badan Rehabilitasi dan Rekonstruksi (BRR), the governmental body responsible for coordinating and managing the rehabilitation and reconstruction process in Aceh, had officially ceased operations on April 15, 2009. Everything appeared very different from what I had observed in summer 2006, the first time that I had visited Aceh after the tsunami. Very few signs indicate that this area had been so devastated by one of the worst natural disasters in human history. What I now observed could be evidence of the claim that recovery efforts in Aceh had been successful (Figure 1.1).

Figure 1.1: Destroyed urban area in Banda Aceh, before and after reconstruction

Several major natural disasters had already occurred before the tsunami of 2004. At least since the 1990s, these disasters had resulted in many recovery projects that should have taught lessons that could be applied to the major disasters that occurred thereafter (Table 1.1). The stakeholders in these recovery projects claimed that their projects were more successful compared with those of other stakeholders in other parts of the world. In general, these stakeholders denied the fact that each recovery project had been performed within a very specific context, making it impossible to directly compare the outcomes of these projects.

Within the global context, great disasters have occurred literally everywhere, within countries at every level of economic, political, social, and cultural progress (Table 1.2). An earthquake that destroyed much of Kobe, Japan in 1994 required more than ten years of recovery work before the stakeholders could claim completion. In contrast, the BRR has often boasted that it completed its recovery of Aceh and Nias within fewer than five years. Can these figures be used to make a quantitative comparison, whose results would indicate that the Aceh and Nias recovery project had been more successful than had other large-scale-disaster recovery projects (Table 1.3)?

Spatial and structural damage of the built environment is the most visible aspect of the impact of a natural disaster. Therefore, any recovery efforts pertinent to this aspect can be easily identified and can serve as the simplest indicators of recovery progress or success. Historically, buildings have been built to meet structural and functional requirements and fulfill the occupant's spatial needs. As these needs reflect generally intangible cultural and social aspects, it is difficult to compare the recovery efforts in one area with those of other areas without further investigation into the cultural and social context of each area. As the most notable, and most easily measurable, aspect of a recovery program, the resettlement program operated during the reconstruction stage is often the focus of attention within the continuum of the disaster recovery process. Recognizing this fact, the agency that manages a recovery project often aggressively publishes the number of houses successfully built through the program as a way of divert people's attention from the many problems that normally happened during the process.

Indeed, many survivors remain unaided by housing aid programs even after several years of reconstruction following many natural disasters. Despite knowledge of its unproductive nature, this practice continues to occur between the aftermath and recovery phases following a natural disaster. Analysis of past recovery efforts indicates that many stakeholders participate in reconstruction projects simply to pursue their own interests, leaving the most critical interests, those of the disaster survivors, to be attended only after the interests of all other stakeholders have been fulfilled.

My dissertation is an attempt to find a more effective and efficient means of addressing this complex situation by applying the lessons learned from the Aceh post-disaster tsunami recovery process. As a clearly a once-in-a-lifetime event, the tsunami recovery effort provides many lessons for all stakeholders involved in the post-recovery efforts of any major natural disaster. During the course of my dissertation research, I closely followed media reports of how succeeding large natural disasters affected not only those directly affected but also people throughout the world. My research highlighted the differences between the recovery efforts of developing countries and those of developed countries, where safety systems are more regulated and evenly distributed among residents (Comerio, 1998; Kunreuther, 1998). Fewer safety nets mean fewer resources are available at the local, regional, and national levels with which to help survivors recover quickly. Consequently, recovering from a disaster in a developing country requires the participation of more individuals during the aftermath period than does recovering

from a disaster in a country with an established safety system. However, as more parties participate in the process, the more stakeholders—and the more interests—come into play.

Table 1.1: Large global natural disasters after the 2004 tsunami

Year	Country	Location	Type	Sub Type	Killed	Tot. Affected	Est. Damage (US$ Million)
2004	Indonesia	Aceh province (Sumatra)	Earthquake (seismic activity)	Tsunami	165,708	532,898	4,452
2008	Myanmar	Ngapadudaw, Labutta, Mawl	Storm	Tropical cyclone	138,366	2,420,000	4,000
2008	China P Rep	Wenchuan country (Ava pre	Earthquake (seismic activity)	Earthquake (ground shaking)	87,476	45,976,596	85,000
2005	Pakistan	Bagh, Muzzafarabad, Poonc	Earthquake (seismic activity)	Earthquake (ground shaking)	73,338	5128,000	5,200
2004	Sri Lanka		Earthquake (seismic activity)	Tsunami	35,399	1,019,306	1,317
2003	Iran Islam Rep	Bam (Kerran province)	Earthquake (seismic activity)	Earthquake (ground shaking)	26,796	267,628	500
2003	Italy	Milan, Turin (Pi?mont), M ...	Extreme temperature	Heat wave	20,089		4,400
2001	India	Kachch-Bhuj, Ahmedabad, R	Earthquake (seismic activity)	Earthquake (ground shaking)	20,005	6,321,812	2,623
2003	France	Paris region - all countr ...	Extreme temperature	Heat wave	19,490		4,400
2004	India	Tamil Nadu state, Andaman .	Earthquake (seismic activity)	Tsunami	16,389	654,512	1,023
2003	Spain	Andalousia	Extreme temperature	Heat wave	15,090		880
2003	Germany		Extreme temperature	Heat wave	9,355		1,650
2004	Thailand	Krabi, Phang Nga, Phuket, ...	Earthquake (seismic activity)	Tsunami	8,345	67,007	1,000
2006	Indonesia	Yogyakarta, Central Java	Earthquake (seismic activity)	Earthquake (ground shaking)	5,778	3,177,923	3,100
2007	Bangladesh	Khulna-Barisal coast, Ba ...	Storm	Tropical cyclone	4,234	8,978,541	2,300
2004	Haiti	Artibonite, Plateau Centr ...	Storm	Tropical cyclone	2,754	315,594	50
2003	Portugal		Extreme temperature	Heat wave	2,696		
2004	Haiti	Fonds Verrettes (West dep ..	Flood	General flood	2,665	31,283	
2002	Afghanistan	Uruzgan province	Epidemic		2,500		
2007	Angola	Luanda, Bengo, Kwanza Nor	Epidemic	Bacterial Infectious Diseases	2,354	57,570	

Table 1.2: Cost of large global natural disasters, 2000-2008

No.	Year	Country	Location	Sub Type	Name	Killed	Tot. Affected	Est. Damage (US$ Million)
1	2005	United States	Mobile, Bayou La Batre, D ...	Tropical cyclone	Katrina	1,833	500,000	125,000
2	2008	China P Rep	Wenchuan country (Ava pre ...	Earthquake (ground shaking)		87,476	45,976,596	85,000
3	2008	United States	Galveston, Brazoria, Harr ...	Tropical cyclone	Hurricane Ike	82	200,000	30,000
4	2004	Japan	Niigata	Earthquake (ground shaking)		40	62,183	28,000
5	2008	China P Rep	Anhui, Hubei , Hunan, Gui ...	Extreme winter conditions		129	77,000,000	21,100
6	2004	United States	Alabama, Louisiana, Missi ...	Tropical cyclone	Ivan	52		18,000
7	2005	United States	Louisiana, Texas, Mississ ...	Tropical cyclone	Rita	10	300,000	16,000
8	2004	United States	Florida	Tropical cyclone	Charley	10	30,000	16,000
9	2005	United States	Florida Keys, Naples (Col ...	Tropical cyclone	Hurricane 'Wilma'	4	30,000	14,300
10	2007	Japan	Niiagata prefecture, Naga ...	Earthquake (ground shaking)		9	14,000	12,500
…								
17	2003	China P Rep	Zhejiang, Jiangsu, Shaanx ...	General flood		430	150,146,000	7,890
…								
24	2005	Pakistan	Bagh, Muzzafarabad, Poonc ..	Earthquake (ground shaking)		73,338	5,128,000	5,200
25	2005	Mexico	Cancun, Puerto Maderos, ...	Tropical cyclone	Hurricane 'Wilma'	7	1,000,000	5,000
26	2003	Algeria	Thenia, Boumerdes, Zemmou.	Earthquake (ground shaking)		2,266	210,261	5,000
…								
28	2003	China P Rep	Anhui, Jiangsu, Henan pro ...	General flood		30	1,200,000	4,830
…								
30	2004	Indonesia	Aceh province (Sumatra)	Tsunami		165,708	532,898	4,452

Table 1.3: Highlights of four-year rehabilitation and reconstruction project (source: BRR Book Series, Book 3 Breakthrough, 2009)

Destruction	Recovery achievements
635,384 people displaced	
127,720 people killed and 93,285 missing	
104,500 (?) small-medium enterprises (SME) destroyed	155,182 laborers trained 195,726 (?) SMEs received assistance
139,195 houses destroyed	140,304 permanent houses built
73,869 hectares of agricultural lands destroyed	69,979 hectares of agricultural land reclaimed
1,927 teachers killed	39,663 teachers trained
13,828 fishing boats destroyed	7,109 fishing boats built or provided
1,089 religious facilities destroyed	3,781 religious facilities built or repaired
2,618 kilometers of road destroyed	3,696 kilometers of road constructed
3,415 schools destroyed	1,759 schools built
517 health facilities destroyed	1,115 health facilities constructed
669 government buildings destroyed	996 government buildings constructed
119 bridges destroyed	363 bridges constructed
22 ports destroyed	23 ports constructed
8 airports or airstrips destroyed	13 airports or airstrips constructed

Investigating stakeholders' interest in this complex context has been the central issue of my dissertation work. To do so, I have applied theories, particularly those regarding collaboration, that explain the interactional or organizational context as the main tools for my investigation. As I have done so, I have come to realize that although the term *collaboration* was widely used during the course of the Aceh recovery process as a description of the process of working together to achieve specific goals, it is questionable whether the Aceh stakeholders engaged in true collaboration.[1]

Investigating the existence of collaboration during the reconstruction stage is clearly challenging. The interplay of various interests of those involved with recovery work defines and characterizes the complex environment of collaboration, if it exists, within the post-disaster context. As such, the reconstruction stage is very different from the earlier two stages of typical disaster recovery efforts, the emergency and rehabilitation stages, in which a participant's motive for involvement can be fairly described as humanitarian. Although my dissertation does not address these two stages other than within the context of their relevance to the reconstruction stage, I provide a description of the stages in recovery work in a later chapter to provide better understanding of disaster recovery overall.

Before discussing reconstruction work, it is important to gain understanding of the devastation wrought by the 2004 Indian Ocean earthquake and tsunami. The following sections aim to provide such an understanding.

1.2 Recovery: The catastrophe after the catastrophe

The great Indian Ocean earthquake and tsunami of December 2004 hit many countries in South and Southeast Asia and affected millions of individuals. As such, it led to one of the biggest reconstruction projects in the world, whether considered in terms of the scale of project, number of people impacted, number of institutions involved, total budget, or land area coverage. Hundreds of multinational design and construction firms were involved with the reconstruction along with relevant institutions and donors from various countries. In Indonesia, the country most impacted, 1,120 organizations were operating 1,044 projects at the peak of reconstruction process between mid-2006 and mid-2007. By the end of 2006, $4.6 billion of the $8.2 billion that has been estimated as necessary to complete the reconstruction process has been collected (Figure 1.2; BRR, 2006).

Although progress in the reconstruction process was clearly evident two years after the disaster, so too were the typical problems that arise during the course of a large-scale construction project. The Agency of Rehabilitation and Reconstruction of Aceh and Nias–Badan Rehabilitasi dan Rekonstruksi (BRR), the governmental body responsible for coordination of the entire reconstruction project, received much criticism of its performance, with some even alleging that it contributed to the complex problems that emerged during the process.[2]

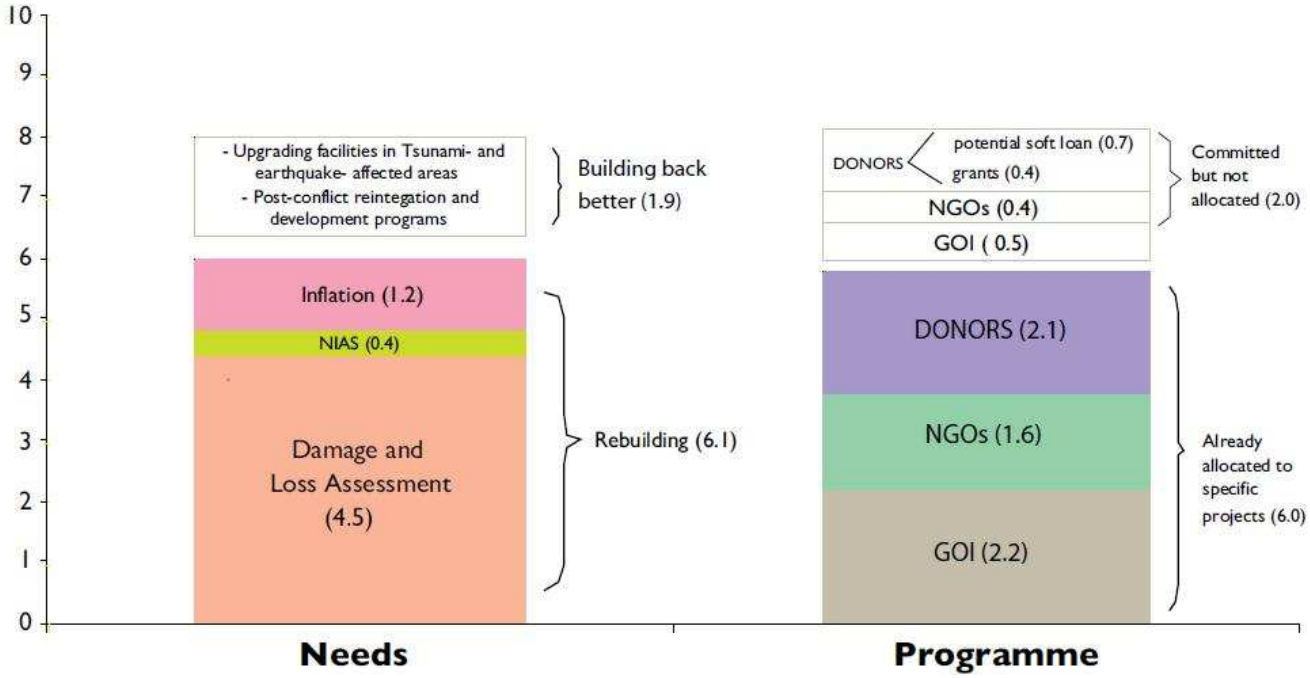


Figure 1.2: Reconstruction needs and allocated funding (Source: BRR, 2006)

One factor alleged to be the source of these problems was the general plan for reconstruction. Under the orders of the President of the National Development Planning Agency of the Republic of Indonesia (Bappenas), this plan was published as the Master Plan for the

Rehabilitation and Reconstruction of Aceh and Nias, the two regions most affected by the tsunami (Bappenas, 2005). The Master Plan consisted of 12 books produced only three months after the tragedy[3] with the support and sponsorship of the United Nations.[4] Implementation of the proposals contained in the Master Plan was expected to be a collaborative effort among three elements of society: government, both central and local; local people; and nongovernmental organizations (NGOs).[5] At the initiation of its implementation, all parties had committed to operate according to a bottom-up principle whereby all issues included in the Master Plan would be discussed with local stakeholders and all proposals based on local needs.[6] However, many unanticipated issues arose during the course of practice that rapidly rendered many aspects of the Master Plan obsolete. In response, the central government published a revised version of the Master Plan to address these problems.[7]

The problems that arose while incorporating local aspects of the Master Plan can be attributed to misunderstandings regarding the Acehnese people, particularly regarding their social and political situation,[8] that led to much chaos during implementation. Such misunderstanding was reflected in a policy to leave a significant proportion of the coastline that had been left empty by the tsunami free from physical structures so that it could serve as a buffer zone during any future tsunamis (Figure 1.3). Implementation of this policy would have required moving local people, mostly fishermen, away from land to which they were strongly attached, and was thus unsound.[9] Indeed, local people insisted on rebuilding their houses in their original coastline locations, leading this and other policies to significantly deviate from their description in the Master Plan (Figure 1.4).[10]

Figure 1.3: Proposed environmental design in the Master Plan (Master Plan of Aceh-Nias Rehabilitation and Reconstruction, 2005)

Figure 1.4: New houses built several meters from the coastline

Emerging problems during recovery

Housing provision rapidly emerged as a critical issue during the reconstruction stage. Problems with housing provision can be attributed to the slowness of the reconstruction process as well as mismanagement in the supply process. In mid-June 2006, one and half years after the tsunami, many survivors were still living in emergency tents that were considered inadequate forms of shelter. By the end of 2009, six months after the official termination of the BRR mandate in Aceh, survivors were still living in barracks (Figure 1.5). The situation was much worse outside Banda Aceh, which, as the capital city of the province, has had the best access to aid and infrastructure among provinces that had sustained relatively similar levels of destruction. In Meulaboh, the second largest city hit by the tsunami, hundreds of families were still unsure whether they would receive housing several months before the BRR concluded its task or five years after the tsunami had hit.[11] Ironically, many families, some of whom could not even be categorized as tsunami survivors, received multiple forms of housing. Such provision has typically been the result of collusion between the beneficiaries and any party involved with housing provision, whether the village leader (*geuchik*) or the contractor, to manipulate the beneficiary's data.[12]

The BRR was the first agency of its kind in the history of Indonesian governance of post-disaster management to acknowledge that the problems that arose were due to its lack of experience in managing large-scale projects. At the same time, many parties took advantage of this situation at the expense of the survivors' right to access all forms of live-saving aid.[13] Recognizing this fact, the BRR eventually established a subunit named the Anti-Corruption Unit to investigate any indications of corruption or misconduct by any party involved in any reconstruction project (see Table 1.4).

Figure 1.5: People still living in barrack more than four years after the tsunami (photo taken on December 11, 2009)

Table 1.4: Numbers of various cases reported to the BRR Anti-Corruption Unit
Source: Koran Tempo, The Jakarta Post, 'Agar warga tak tertipu' (March 22, 2006). Data quoted by the BRR Anti-Corruption Unit

ISSUES	TOTAL	CONSULT	VERIFICATION	CLARIFICATION	REQUEST FOR REVISION	INVESTIGATIVE AUDIT
Corruption prospective	80		59	2	2	7
Bidding problems	124	1	92	2	15	4
Advice on procedures and ethics	27	22		2	3	
Crime prospective	2		2			
Authority misconduct	7		5	1	1	
Misconduct of BRR facility	4				4	
Complaints on procedures	40		10	17	13	
Complaints on performance/attitude	72	4	28	6	34	
Project's related problems	75	4	39	6	21	5
Question and suggestion	50	7	14	6	23	
Problems on survivor's right	32		15		17	
TOTAL	**513**	**38**	**264**	**42**	**143**	**26**

Another common housing issue related to the chaotic reconstruction process that arose immediately after housing provision had been initiated has been the quality of the housing. Many beneficiaries complained of the poor construction of their houses, and several simply refused to accept the housing provided. In general, such poor quality housing has resulted from poor supervision by a project's management, which allowed for the practice of corruption in many

forms by any party involved with a project. Such corruption could take the form of manipulating the data regarding the quantity or quality of building material specifications and supplies and/or engaging in construction cost mark-ups. Ironically, many cases of corruption concerned housing projects under the direct coordination of the BRR.[14]

Environmental impact

Conducting large-scale reconstruction in many regions of Indonesia will inevitably have serious implications for the environment, and post-tsunami reconstruction was no exception. The first environmental problem that had to be addressed during the recovery process was the direct impact of the disaster itself. Aceh was divided into three zones according to the post-tsunami level of environmental destruction. The red zone, which covered the area within range of 2 kilometers from the coastline, was categorized as having sustained total destruction; the yellow zone, which covered the area within 2 to 3 kilometers from the coastline, as having sustained moderate to heavy destruction; and the green zone, which covered the area 3 kilometers or further from the coastline, as having sustained mild destruction.[15] Unfortunately, such categorization, which appeared ideal on paper, faced significant challenges in implementation. Obviously, reconstruction required land-use rezoning so as to relocate most of the pre-tsunami settlements in the red zone. However, the chaotic situation during the early reconstruction process impeded the decision-making process in determining a new location for resettlement, leading many settlements to be relocated in areas in which they should not have been, mostly because of their negative environmental impact.

Addressing environmental issues was impeded by not only weak law enforcement but also an unsupportive local culture. The extraordinary situation required large amounts of wood to build houses within a very short period, which encouraged some local people to engage in illegal ways of fulfilling their needs, including illegally cutting trees in local forests. This illegal activity was especially prominent in remote areas of Banda Aceh, where lack of infrastructure to support the supply of wood was a serious problem.[16] Anticipating these environmental impact problems, local governments supported by international NGOs working on environmental issues established rules of reconstruction regarding wood consumption for new housing construction. However, implementation of these rules was difficult. Illegal logging due to collusion among almost all stakeholders in local society, from government to local people and including the army, had long been practiced before the tsunami.[17]

Despite being catastrophic in many respects, the reconstruction process in Aceh gained praise throughout the world for its achievement. Such praise can be attributed to the fact the process was relatively effective when compared to recovery processes after disasters that had occurred either before or after the Indian Ocean tsunami. The reconstruction process following the 2005 Hurricane Katrina disaster in the United States, as well as those in other countries affected by the Indian Ocean tsunami, were criticized by national media, which contrasted their lack of progress in comparison with the process in Aceh.[18]

In South Thailand, where tourism had long been a significant generator of social, cultural, and economic capital in local regions, rehabilitation and reconstruction efforts were hampered by the intervention of powerful interest groups that had strong connections with the state. These groups manipulated and ecological reorganization efforts by pushing to place tourism as the main driver of the recovery to the detriment of local fishermen (Lebel, Khrutmuang, & Manuta, 2006). A relatively similar situation was reported to have occurred in Sri Lanka (Klein, 2007). A study in India revealed a contradiction between the work performance of NGOs during

emergency relief and during rehabilitation and reconstruction, with the slow pace of projects during later stages of reconstruction described as very chaotic and uncoordinated, especially those in the livelihood sectors (Re´gnier, Neri, Scuteri, & Miniati, 2008).

Such media coverage of the relative accomplishment of disaster recovery efforts in different countries should be seen as part of the rhetoric of the stakeholders in each reconstruction project, which cannot be separated from its social and political aspects. Actual assessment should be based on what truly occurs in the field and on a case-by-case basis. The BRR appeared reluctant to tarnish its achievement by establishing rehabilitation and reconstruction targets based on specific numbers of houses to be built without being assured that it would have the resources necessary to do so. In fact, tens of thousands houses scheduled for completion by the end of 2006 were not completed, forcing beneficiaries to remain in temporary shelters that were, in reality, merely emergency barracks.[19]

Research background

If the epicenter of the aftermath of the tsunami were to be identified, all those involved in the reconstruction process would agree that it was Banda Aceh. Even though it was not the city closest to the true epicenter of the earthquake that triggered the Tsunami, it experienced the worst impact in terms of number of casualties among highly populated areas, either in Indonesia or other countries. As such, my research focused on the chaotic setting in Aceh in its examination of collaboration among stakeholders in post-tsunami reconstruction.

1.3 The context: The city of Banda Aceh

Covering an area of 61.36 square kilometers along the Krueng Aceh or Aceh River on the northern end of Bukit Barisan Mountain, which spreads north-south of Sumatra Island (Figure 1.6), and surrounded by hills, Banda Aceh is the capital and the most populous city of the Province of Aceh. Estimates place the population lost due to the tsunami at 78,417 or almost one-third of the 2004 pre-tsunami population of 269,091,[20] although the exact number has never been confirmed.[21] The city government is operated by a mayor and a city parliament while each of the nine subdistricts or *kecamatans* into which the area is divided is led by a subdistrict head called a *camat.*

The rapid growth of the population during the recovery period (2005-2010) reflected the dynamics occurring in the field. The increased population primarily consisted of humanitarian workers residing in the city temporarily and family members of tsunami victims who moved to Banda Aceh to care for their properties. As shown in Table 1.4, the population rapidly increased until 2007, when the recovery work reached its peak, then began to decline until 2009, when it resumed the natural growth rate of an urban population.

During the early stage of reconstruction, 203 projects were ongoing in Banda Aceh at a total cost of US$647.2 million, which accounted for about 23% of the estimated total reconstruction budget as of December 2005 (Table 1.6). Being the area with the most projects and the site of central coordination, reconstruction in Banda Aceh occurred at a more rapid pace than in other regions, particularly the western coast of the province, which had experienced the most destructive impact of the tsunami. This phenomenon can be attributed to the fact that unlike more devastated areas, Banda Aceh retained infrastructure supporting aid distribution, which encouraged NGOs to locate their projects in Banda Aceh and its surrounding areas. Such infrastructure also supported the BBR's intention to widely publicize its projects, which would reflect favorably on the agency.

However, even with a more advantageous situation and more resources than other areas, Banda Aceh experienced recovery at a slower pace than expected. The BRR announced that the last refugee tent compound, which was in Banda Aceh, had been officially dismantled in mid-2006, one and a half years after the disaster. During my last visit to Banda Aceh in March 2010, I could still find survivors living in barracks (Figure 1.5) intended to serve as temporary shelters. This situation can be attributed to many factors, including a lack of disaster education and awareness; the economic impact of the tsunami; mental health issues among survivors; irregularities and inequities in community-based response and recovery efforts and the distribution of disaster relief aid; gender inequality; the complexity of property status issues, particularly those related to land tenure, which delayed the process of moving people into permanent housing and led to relocation and housing issues (Rodriguez et al., 2006); and the lack of a fixed master plan that could serve as a guide in land-use planning during rehabilitation and reconstruction.[22] The complexity of land-use factors was increased by the fact that a large strip of land along the Banda Aceh shore had been devastated, leaving many parcels unsuitable for development (Figure 1.7). As consideration of the combined impact of these factors indicates, Banda Aceh required a new master plan that would allow it to be reconstructed quite literally from the ground up.

Developing a new urban master plan for a city as large as Banda Aceh would be a difficult task at even the best of times, and was particularly so in the midst of the chaotic recovery situation. Although all stakeholders required an analogous situation to serve as a guide, the previous condition in Banda Aceh could certainly not serve as an ideal guide, as the city had had no reliable mitigation system or institutions in place, nor regulations regarding what steps should be taken in case of disaster. Rebuilding Banda Aceh from its ruins could thus be described as having constructed it completely anew.

Unfortunately, no one stakeholder proposed the best means of reconstruction and its means of attainment, with each level of government proposing a plan that lacked coherence with all other plans.[23] In the meantime, frustrated survivors began to act on their own by measuring the site of their old houses using traditional, imprecise methods that often conflicted with the method employed by official agencies.[24] Such action and many others reflected the need for better recovery coordination and management.

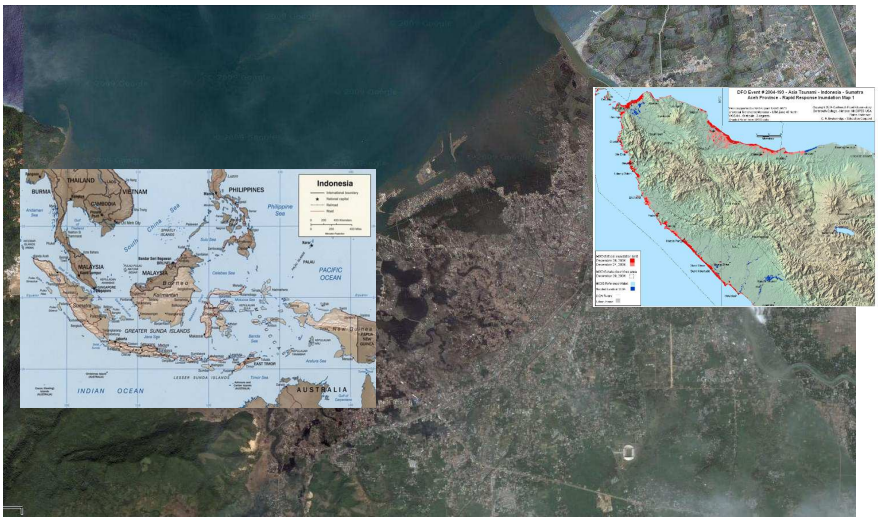


Figure 1.6: Geographical position of Banda Aceh (source: http://www.DigitalGlobe.com)

Table 1.5: Banda Aceh population during the recovery period (source: BPS Banda Aceh, 2010)

YEAR	POPULATION
2005	177.881
2006	199.241
2007	219.659
2008	217.918
2009	212.241

Table 1.6: Number of implementing agencies/projects and total project cost by district/city (source: BRR, 2006)

District (City)	Number of agencies and projects	Total project cost by district In US$ millions
Aceh Barat	102	214.1
Aceh Barat Daya	9	9.3
Aceh Besar	266	310.4
Aceh Jaya	84	186
Aceh Selatan	13	20.1
Acwh Singkil	9	23.8
Aceh Tamiang	2	3.7
Aceh Tengah	6	7.2
Aceh Tenggara	2	2.8
Aceh Timur	11	14.7
Aceh Utara	38	49
Banda Aceh (city)	203	647.2
Bener Meriah	4	7.4
Bireuen	52	69.8
Gayo Lues	2	2.5
Langsa (city)	2	1.7
Lhokseumawe (city)	17	20.6
Nagan Raya	40	55,4
Nias	55	82.2
Nias Selatan	7	7.2
Pidie	76	141
Sabang (city)	18	15.3
Simeulue	27	76.3
	661	2841.2

Figure 1.7: Nearly all land parcels on the Banda Aceh coastline left unsuitable for development after the tsunami (source: http://www.DigitalGlobe.com)

1.4 The concept: Why collaboration?

Recovery from the impact of the massive natural disaster in Aceh Province, specifically in Banda Aceh, required the implementation of large-scale construction projects that depended on collaboration among many organizations from many professional, social, and cultural backgrounds, which that acted as the executing agencies. In this context, the most common term used, from the macro organizational level to the project level, was *coordination*. However, although many of these organizations considered collaboration as simply the coordination of activities, such coordination is necessary but not sufficient. Indeed, using the term *coordination* to describe the process of collaboration, whether intentionally or unintentionally, led to several problems.

Research into the social organization of disaster recovery has revealed the importance of using a multidisciplinary approach grounded in sociology in responding to social crises and disasters (Quarantelli, & Dynes, 1977; Kreps, 1984). The discussion of the urgency of collaboration in complex situations in this section is based on recognition of the importance of using this approach to examine the nature of collaboration from various perspectives and to

measure progress during the recovery process. Before beginning this discussion, it must be emphasized that collaboration is neither a goal in the process nor a solution to its problems. As such, theories on collaboration are used as *tools* with which to examine the dynamics that existed among the project stakeholders in their work together in the recovery of Aceh. As examination of the current problems in urban planning and design in developing countries has indicated that they arise from complex issues among the stakeholders involved, this investigation of the reconstruction process in Aceh allows for a unique means of identifying the lessons learned from this experience that can be applied to many types of projects.

Scope of context

The scope of the context of this research effort was limited to Banda Aceh and the scope of the issues addressed was limited to housing in Banda Aceh. However, the experiences of other areas in Aceh and Nias are discussed as a means of comparison and to provide further insight.

Research questions

The dissertation research process was guided by the following research questions:

What was the nature of the inter-organizational interaction among the stakeholders in the context of housing reconstruction in Banda Aceh and did it lead to collaboration?

How significant was the collaborative process in housing reconstruction within the context of post-tsunami disaster recovery in Banda Aceh?

Discussion framework

This dissertation is structured into seven chapters. The first two chapters discuss the theoretical discourse regarding collaboration and how it explains phenomena found within the context of this case. Chapter one provides an introduction and describes the background and significance of the main topics and problems addressed. Chapter two elaborates on the problems that arose among the stakeholders in housing reconstruction projects in Aceh according to organizational theories on both the macro and micro levels before explaining why micro-level theories are more suitable for explaining what occurred within the housing project context. Chapter three describes theories regarding collaborative planning and design practices to provide a framework for further discussion of collaboration in later chapters. Chapter five describes the research methods employed during field research and research analysis before discussing the problems that arose during Aceh reconstruction in detail. Chapter six discusses problems regarding housing reconstruction from the perspective of theories of disaster recovery and housing in developing countries before concluding with a characterization of collaboration among stakeholders in housing reconstruction projects and how it influences their performance.

Chapter 2
Organization: From Bureaucracy to Collaboration

The social-organizational level

The reconstruction project in Aceh, particularly in Banda Aceh, is clearly a challenging case with which to demonstrate a collaborative approach that could be applied to various organizational problems that arise within the construction process. Indeed, its very complexity was one of the motivations for selecting this large-scale construction project as the focus of this dissertation research. With such a complex and unique case, it is extremely important to determine the scope of the research within a social- organizational context, particularly its unit and level of analysis, early in the process.

Successful collaboration is only achieved when stakeholders do not separate themselves from the context in which collaboration is occurs, where social interaction among them plays an essential role. It is highly important to identify the extent to which social factors are determining factors in successful collaboration. Berger and Luckmann (1967) argue that reality is not an objective, value-less, fixed phenomenon shared by everyone, but rather a product of a social system through which human knowledge is developed, transmitted, and maintained. As such, successful collaboration requires that each participant understand, at least to a certain extent, the social construction of their fellow collaborators in a project.

The approach applied to the reconstruction project for the tsunami victims in Aceh differed from that typically applied to a large-scale construction project, such as the construction of a commercial high-rise building or airport terminal, considered to be a single project. The reconstruction project in Aceh comprised hundreds of projects on various scales. Moreover, several projects in the same site were rarely under single project management, only the single coordination of the BRR, whose role was to prevent lack of coordination leading to such problems as project duplication at a particular site. This situation provides many opportunities for analysis on many organizational levels. In this case, I argue that theories of organizational behavior, which cover a wide range of organizational levels, help explain the phenomena found in the research field and the nature and roles of collaboration. These theories accord with the wide range of analysis necessary to explain the complexity of the reconstruction projects in Aceh, an argument supported by Staw's (1984) explanation of organizational behavior. Organizational behavior is an interdisciplinary field that examines the behavior of individuals within organizational settings, as well as the structure and behavior of organizations themselves. Macro organizational behavior (sometimes called organization theory) is rooted in sociology, political science, and economics and addresses organizational structure, design, and action within social/economic contexts. Micro organizational behavior is rooted in psychology and addresses individual attitudes and behavior and how they are influenced by and influence organizational systems.

Having both micro- and macro-level branches, the field of organizational behavior often functions as two separate subdisciplines. Macro researchers are frequently sociologists who identify with the Organizations and Occupations section of the American Sociological Association, while micro researchers most commonly align themselves with the Industrial and Organizational Psychology division of the American Psychological Association. There are, however, several integrating mechanisms which draw these camps together. The Academy of Management, which serves both branches, brings micro and macro researchers together in a

single forum. More importantly, both camps are commonly housed within a single department or subarea within American business schools. To date, this integration has resulted in some common language as well as recognition of the joint contribution of the two perspectives. Nevertheless, most research is still distinctly psychological or sociological in its approach to variables and levels of analysis (Staw, 1984).

Figure 2.1 illustrates the potential levels of analysis required for research into projects within various organizational contexts. On the macro level, several organizations are considering the possibility of conducting research into their roles and relationships. One potential organization is the BRR, whose scale and position allow it to serve as a representative of the government of Indonesia. Multi-national funding agencies, such as OXFAM, Save the Children, or the Red Cross, may be other organizations, as may a UN agency, such as UN Habitat, UNDP, or UNICEF, which manage many projects in Aceh.

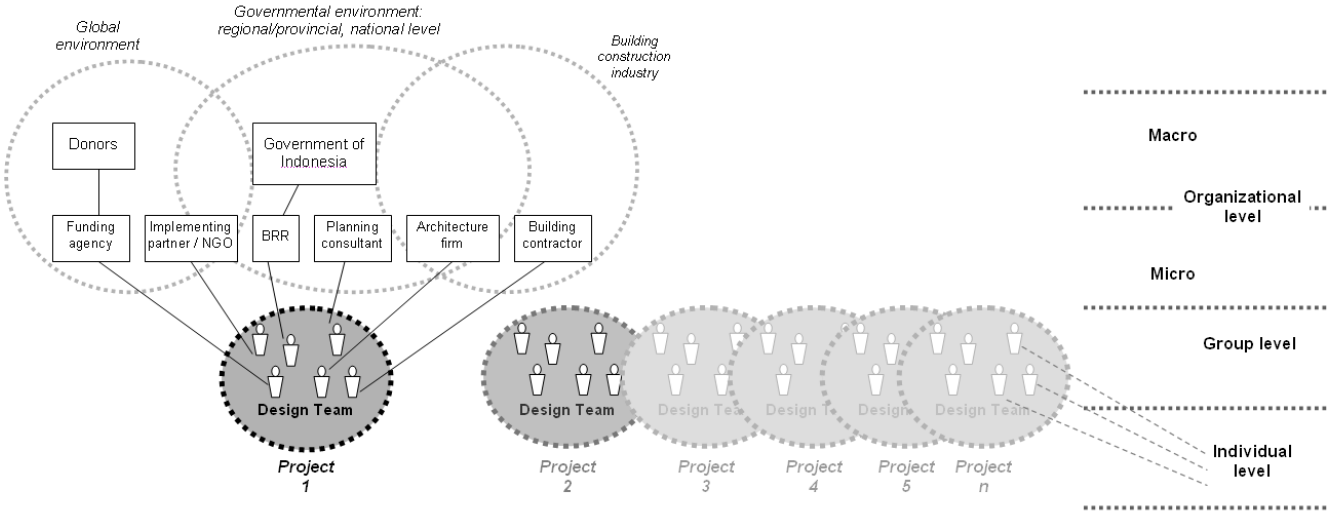


Figure 2.1: Organizational context in the Aceh Reconstruction Project and levels of analysis

On the micro level, there are a lot more possibilities of organization that might have potential as the basis of analysis. These organizations could be private, public, or even multi-national.

Another possibility is to do the analysis based on meso-level organizational approach. This would happen when the organizational situation is so complex or unclear that finding micro-macro level of analysis is quite difficult, such as what happened in Aceh post tsunami: post-disaster trauma, local social and political problems, etc (Cappelli & Sherer, 1991; House et al., 1995). In this case, cross-level analysis as proposed by Hackman (2003) would also be the best strategy. Bracketing one central phenomenon within a certain level of the dynamics of the reconstruction process can help explain the social phenomena on other levels. In this case, the involvement of foreign professionals in the reconstruction process might present an opportunity to understand the culture of multi-national firms, a strategic action considering the growing influence of these firms on the construction industry in many developing countries.

At first glance, the most suitable strategy appears to analyze each project on the group level, the typical strategy used to analyze each team within an architecture, engineering, and

construction (A/E/C project).[25] In this study, the unit of analysis is the planning and design process, and the purpose to investigate the characteristics of collaboration and social interaction among the people and organizations involved in the Aceh reconstruction planning and design process. However, the characteristics of a project team in a construction setting differ those of a typical team when defined according to organizational theories. Whereas most theories define a team as an entity embedded or placed within an organization (Ilgen, 1999; Kozlowski & Bell, 2003), the teams within an A/E/C project represent different organizations that are not embedded within a single organization (Figure 2.2).

Several cases in the Aceh reconstruction process revealed how these macro- and micro-level issues have intermingled over the course of the reconstruction process and how conflicts regarding an issue can occur on every organizational level, from the governmental to the field level.[26] As such, they provide evidence of the significance of investigating social-organizational issues from the perspective of both the macro and micro levels of an organization.

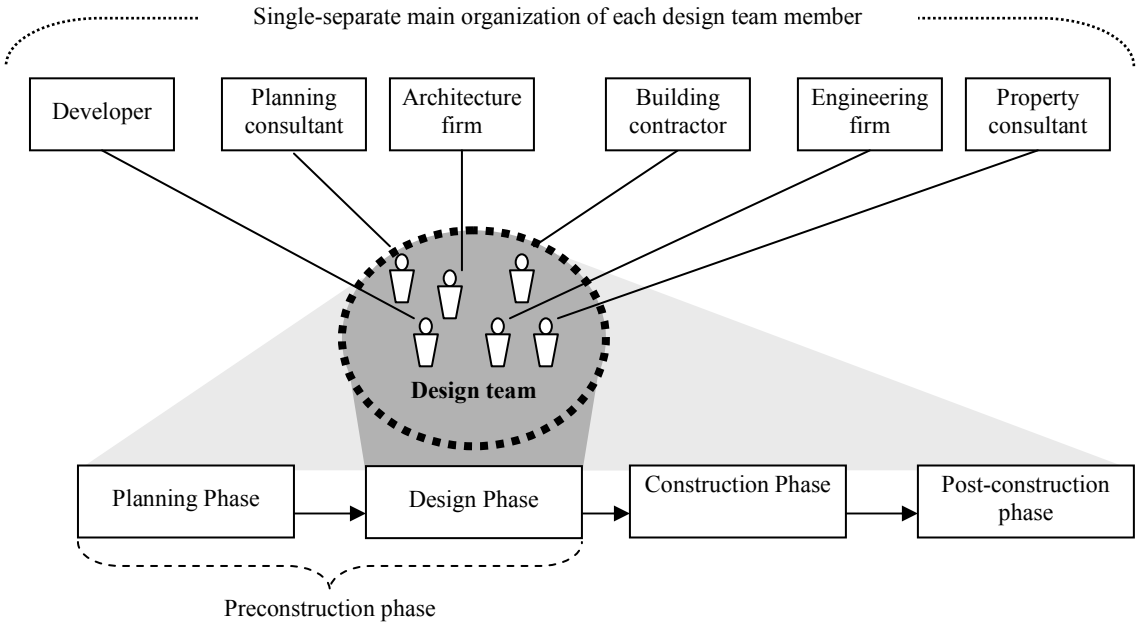


Figure 2.2: A/E/C project team comprising professionals from many other organizations and disciplines

2.1 Macro-level organization

According to Fligstein (2001), organizational theory addresses three essential concerns:

1. How the internal organizational structure works to motivate participants and produce outcomes consistent with the goals of those who control the organization.
2. How the world external to an organization affects what occurs inside the organization.
3. How internal organization and the external world can affect organizational survival.

All these concerns strategically address the social setting that should be investigated in an A/E/C project and the problems usually associated with the nature of collaboration among participants. Any issues regarding collaboration lie along the continuum of the organizational context. In this sub-chapter, these organizational issues are discussed theoretically and their roles in collaboration in various reconstruction projects in Aceh are examined. These issues encompass

the organizational context, which concerns organizational goal-setting and decision-making; power and resource dependency; networks; social status; and organizational demography.

2.1.1 Organizational context

Organizational goals

The main obstacle to meeting an organizational goal is the fact that each stakeholder in an organization has his/her/its own goal. For example, the goal of an organization may be the efficient production of goods and services, while that of its suppliers is profit and that of its workers is high wages. Therefore, organizational goals must be established from the perspective of both the individual stakeholders and the organization as a whole (Simon, 1964). Lower-level employees frequently modify goals established by upper-level managers that do not coincide with their own goals. This dilemma should first be approached by distinguishing *goals,* the value premises that can serve as inputs into decisions, from *motives,* the causes that lead individuals to select certain goals rather than others as the premises of their decisions (Simon, 1964). The most critical issue is clarifying the relation between organizational goals and personal motives. Facing multiple goals during the process of production requires defining the course of action that will accommodate all stakeholders' actions in their efforts to achieve their own goals. The course of action is basically making a decision that satisfies the entire set of requirements, which should be treated as the (complex) goal of the action, as well as meeting all constraints (Simon, 1964).

The challenge is establishing an ideal course of action to achieve a satisfactory solution using the goals of the action as guides. Simon (1964) proposed two ways of implementing this strategy: using the goals as guides to synthesize proposed solutions (alternative generation) or using the goals to test the satisfactoriness of the proposed solution (alternative testing). However, the process of designing a course of action could lead to an asymmetrical situation, particularly if goals that act as the guides of the synthesis conflict with the constraints that test the feasibility of a particular course of action. In an organization composed of many stakeholders, the possibility of further conflict is relatively high; indeed, one stakeholder's goal may be another's constraint. In a building construction project, typical conflicts of interest between professionals often reflect contradictory goals among them. Whereas an architect's goal may be designing an aesthetically pleasing and functional building, which requires much expense, an engineer's goal may be to design an efficient building system, which usually results in a number of nonfunctional spaces. At the same time, the owner's goal is the production of a building that is aesthetically pleasing building and has a low cost of maintenance.

The complex conflicts between goals and constraints arise from different understandings of the constraints. To resolve this problem, Simon introduced the concepts of *generators* and *tests* (Simon, 1964). One can only define that an organization has a goal if one recognizes that a constraint or a widely shared set of constraints is a form of test within the organization. On the other hand, if the constraint is considered part of a widely shared set of constraint generators for the individuals within the organization, one can say that goal conflict as well as sub-goal formation have emerged. Here one may assume that in order to build a sense of communality to achieve a single set of organizational goals, the owners or top managers should direct the members' constraints and manipulate them to test all members.

Another way to approach this problem is through motivational theory based on role behavior as formulated by Barnard and Simon. A *goal* is defined as an inducement for the participant to participate in the organization, while a *constraint* is defined as a contribution from the participant to the organization. This means that while inducements to participation are

considered inputs into the organization (i.e., have positive utility for the organization), contributions to participation are expenditures taken from the participants (i.e., have negative utility for the participants; Simon, 1964). Consequently, the motivations of the participant tend to increase the number of their inducements to participate rather than their contributions. The organization should thus create an atmosphere that encourages its members to generate contributions that will in turn increase the number of inducements. By such means, an organization can achieve its goals while maintaining a balance between the number of contributions by and inducements offered to its members.

The organizational decision-making system

The most critical factor in achieving an organizational goal during the production process is the decision-making system. What must be remembered here is that the character of the decision-making system in organization is loosely coupled and that there are generally two basic principles that guide the decision-making process. First, the decision-making process is aimed at finding a course of action that best accommodates multiple goals and constraints. Second, decisions made at any division of an organization could act as goals or constraints in the decision-making process at other division (Simon, 1964). In order to survive, an organization must consider both principles when evaluating the way that it manages organizational roles for its members. Organizations must satisfy constraints that are imposed by inducements and contributions while recognizing that the course of action should observe the organizational roles that, in this case, act as constraints.

In conclusion, it is dubious whether organizational goals are used as guides in the decision-making process. Rather, the decision-making process is more concerned with discovering courses of action that satisfy the entire set of constraints. All constraints in a decision-making process are somehow related to the decision maker's motivation or role in generating a particular course of action, a situation that may be due to the loosely coupled character of a decision-making system. Viewed within a hierarchical context, it is logical to identify organizational goals through the courses of action taken by the upper-level members of the organization, as subordinate employees will, at the very least, adapt their choices within the constraints established by the higher echelons (Simon, 1964).

In the case of a building construction project, this phenomenon might arise during the design development or detailed design processes. If the project manager states that the principal goal of the project is minimizing the employment of specialist engineers to avoid having to pay high wages, his or her subordinates will actualize this constraint by simplifying the building design. However, the project manager, who in most cases is an architect, may append his or her idealistic design goal to this financial goal, leading him/her to conflict with members of the A/E/C team, especially those without an architecture background.

2.1.2 Power and resource dependence

"Power is having something that somebody else wants." (Pfeffer, 1981)

Little research attention has focused on power as an organizational aspect of an A/E/C project. Instead, questions raised in this sector typically address the existence of power within an organization. Such questions may take the form of the following: Why does a professional with a particular background tend to hold power, either formally, i.e. as a project manager, or implicitly during project operation? Where does this power come from? According to Pfeiffer, understanding the source of power is one of the significant steps in developing strategies for the

acquisition and use of power in organizations (Pfeffer, 1981).

Another way to investigate the importance of power in organizations is through understanding the distribution of power. Gamson argued that one way to assess the distribution of power is to examine the distribution of the determinants of power.[27] Two factors primarily determine the power of the organizational actors: the significance of what they do in the organization and their skill in doing it. Large and complex organizations that employ a number of specializations typically have more opportunities to have several actors with dominant power. These factors are usually found on the subunits that successfully accomplish the most important tasks in the organization. As success in performing the task is the prerequisite here, skill becomes one of the determining factors; otherwise, gaining responsibility will not provide much power (Pfeffer, 1981).

In contrast to Pfeiffer, Emerson[28] argues that *power*, defined as the act of having full control over a variable that someone else needs for which there are few or even no alternatives, comes from the dependence of the other. However, dependence will not generate power if the actor does not have the ability to translate the dependence into effective influence. Having power also includes the ability to observe and measure the other's compliance with organizational demands, an ability that reflects the skills that must be embedded in the actor with power.

In their theory of resource dependence, which stresses the role of resources over that of power, Pfeffer and Salancik (2003) argue that organizations require continuing provisions from and transactions with the environment from which they obtain their resources. As some of these resources are more critical and difficult to obtain than others, those subunits that can provide and later control difficult-to-obtain resources will gain power in the organization and control over these resources. In contrast to Weber's (1978) bureaucratic approach to organization, especially in term of exploiting resources, the resource-dependence perspective could be considered the core of organizational theory. Indeed, it is difficult to manage interdependent resources with a bureaucracy. It then follows that the determining factor in rewarding members of an organization is their ability to control and manage resources rather than their position in the organizational bureaucracy.

The resource-dependence perspective is used to study power not only within a single organization but also among organizations, particularly among regulatory bodies (Pfeffer and Salancik, 2003). It can also be used to investigate an inter-organizational context in which some organizations try to control other organizations, particularly in an A/E/C industry context. Investigation of organizational problems in an A/E/C project, with its multi-organizational characteristics, can lead to a better understanding of which suborganization actually holds power. Nevertheless, research continues to focus on resolving managerial problems, especially communication problems, while neglecting consideration of the character of the actors who communicate, as well as the actors who might have control over the resources.

Interdependence

Pfeffer and Salancik argued that interdependence exists in social systems and social interactions within organizations when an actor does not have control over all conditions necessary to achieve a certain outcome (Pfeffer & Salancik, 2003). Interdependence can be categorized as either *outcome interdependence*, in which the outcomes achieved by an actor are interdependent with or jointly determined by the outcomes of other actors, or *behavior interdependence*, in which the activities of an actor are dependent on the activities of another social actor such that tasks can only be performed if both actors participate. One example of an

activity that displays behavior independence is that of playing poker, which is only possible if a minimum number of participants agree to play.

The relationship among the participants in outcome interdependencies can be categorized as either a *competitive relationship*, in which the outcome of one participant must be better than that of another participant, or a *symbiotic relationship*, in which the output of one participant becomes the input for another participant. In terms of human ecology, both participants in a competitive situation use the same resource while those in a symbiotic relationship use different resources. However, interdependence need not be either competitive or symbiotic; indeed, both types of relationships frequently exist between two social actors. The most important factor is that organizations realize the existence of these interdependencies in order to achieve desired outcomes and the necessity of identifying which organizational resources create interdependencies (Pfeffer & Salancik, 2003).

The enactment process

Although resources arise from the organizational environment, not all resources or environments create resource dependence. The critical resources are those that all actors wish to place under their control. Referencing Weick, who argued, "The human creates the environment to which the system then adapts. The human actor does not react to an environment, he enacts it,"[29] Pfeffer and Salancik (2003) assert that the organizational environment becomes a critical resource through the enactment process. In an A/E/C project context, this might explain how a project can be executed using different resource- dependence approaches. Consider the example of a museum construction project for which two teams are producing alternative designs. This situation might result in the identification of two different critical resources, depending on which organizational environment they enact. One team may decide that design knowledge of a museum is the critical resource, while the other may decide that funding is the critical resource. Ultimately, both teams will produce a building design of a museum.

2.1.3 Networks and interorganizational relationship

The relationships among the participants in the A/E/C industry can be described as parts of a network. However, few studies have examined the nature of organization in this industry from the perspective of network theory. Rousseau (1997) defined the rise of networks in organizational practice as a response to the decline in big enterprise with its typical bloated work structure. This decline came with the expansion of small-firm employment; the demise of hierarchical advancement, particularly within middle management; and the concomitant rise of professional and technical jobs, which removed cues provided to people on traditional career paths from traditional internal labor markets. The shift from managerial prerogatives to self-management removed much formal control over work. With the erosion of traditional external guides for behavior, internally generated guides became necessary to operate within and around the more fluid boundaries of firms, interfirm networks, and work groups. With fewer external guides for work, greater value became placed on improvisation and learning (Rousseau, 1997).

The successful realization of projects is not simply a matter of managing the resources and personnel under an individual's own command. It also depends on the way that other organizations and their managers choose to act. In these circumstances, an interest in coordination between organizations, and how to promote it, is likely to be endemic. What the forms of coordination are and how to develop them are likely to be high on the list of the concerns of managers. The political, social, and economic costs of engaging in the coordinative

activity (with higher costs linked to more institutionalization) along with the commitment to the activity (with higher commitment linked to more institutionalization) are directly related to interorganizational coordination effectiveness (Alexander, 1995).

The two main approaches to the study of networks view networks as either analytical tools or as forms of governance. As analytical tools, networks act as analytical devices to illuminate social relationships within the organization, within inter-organizational links between firms, and in the environment of the organization. As forms of governance, networks govern relations among economic actors and act as forms of social glue that bind individuals into coherent systems (Powell & Smith-Doerr, 1995). Examination of networks as analytical tools has developed from a need to describe informal ties within organizations, illustrate how organizational environments are constructed, and analyze power and autonomy within organizations. Such examination has revealed a variety of linkages and types of relationships among actors in organizations, especially the often concomitant informal and formal nature of relationships, and the existence of authority, friendship and loyalty. Networks as forms of governance are characterized by webs of interdependence that are typically found in an industrial context, such as relational contracting, collaborative manufacturing, and interfirm alliances. In its development, the network governance structure brings significant transformation to multi-organization corporations, particularly the blurring of organizational boundaries, as characterized by greater reliance on subcontractors and collaboration with former competitors (Powell & Smith-Doerr, 1995).

Both approaches are useful in explaining the relationships within an organization. Consider Figure 2.3, which illustrates a web or network among actors in an organization that can explain the nature of their relationships. It can explain the role of B based on its ties within the network. By showing that A, C, D, and E depend on the resources that are controlled by B, the network can explain the nature of power or resource dependence in this inter-organizational network. This network can also explain the nature of coordination. As A must contact B whenever it needs to do business with D or the other actors, B is the coordinator or broker. Thus, the network can also describe the nature of trust within this inter-organizational context. Because A will delegate its business to D through B as the coordinator or broker of the network as long as A has trust in B, A can be considered to trust the power of B. If B tells A that D is untrustworthy, A will break ties with D.[30]

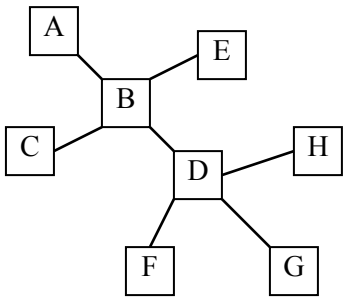


Figure 2.3: Networks in organizations (after Fligstein, 2005)

This illustration can be applied to the inter-organizational context in the A/E/C industry to describe the typical inter-organizational network involved in a building project. For example, on the side of the inter-organizational network representing the design phase, A may be the owner, C

the landscape architect, E the interior architect, and B the main architect as well as the coordinator of the design phase. On the other side of the inter-organizational network representing the construction phase, D may be the main contractor and F, G, and H the subcontractors. In such a network, the owner almost never discusses the project directly with the subcontractors; doing so would indicate a problem with the relationship between the owner and the coordinator as the node, and possibly a loss of trust.

The ties among the actors here are more important than the roles of the actors, which have been already been defined and have led each actor to assume his or her place within the network. Consequently, the tie becomes the unit of analysis of a network, and maintaining ties within a network becomes another important issue . Baker et al. (1998) have argued that in the context of client-agency ties, three forces—competition, power, and institutional forces—maintain the ties, among which competitive forces are the weakest and institutional forces the strongest.

2.1.4 Social status and organizational demography

Within organizational research, social status is discussed within the subject of organizational demography (Pfeffer, 1983), and its theories are built upon the phenomenon of team diversity. Research into organizations has suggested that demographic composition influences communication because people tend to communicate with those who are similar to themselves. For example, Zenger and Lawrence (1989) found that engineers who were of different ages and with different tenure from others in a project team engaged in less frequent technical communication. Kozlowski and Bell (2003) argued team processes and outcomes are influenced by the homogeneity or heterogeneity of team members.

Other studies have reported that diversity could have a positive, negative, or no effect on team effectiveness. Some positive aspects regarding the nature of the design team could relate to the domain of the task, which may be creative and intellectual (Argote & McGrath, 1993), and diversity in skill and expertise (Kozlowski & Bell, 2003). Using self-categorization theory, which proposes that people may use social characteristics such as age, race, or organizational membership to define psychological groups and promote a positive self-identity, Tsui et al. (1992) examined the relationship between demography and organizational attachment. Focusing on the effects of demographic diversity in organizations on an individual's psychological and behavioral attachment to the organization, they examined individual-level commitment, attendance behavior, and tenure intentions as a function of the individual's degree of difference from others in such social categories as age, tenure, education, sex, and race. Their analysis indicated that increasing work-unit diversity is associated with lower levels of psychological attachment among group members, particularly for members with certain characteristics, with whites and men showing larger negative effects for increased unit heterogeneity than nonwhites and women. The results of the study call into question the fundamental assumption that underlies much of race and gender research in organizations: that the effects of heterogeneity are always most strongly felt by the minority (Tsui et al., 1992).

2.1.5 Towards a collaborative (recovery) process

Do organizational issues or variables, such as power dependence or organizational demography, play significant roles in encouraging collaboration in the planning, design, and construction process? Which variables have the most influence on collaborative process in an A/E/C project?

Decision-making is concerned with discovering courses of action that satisfy an entire set of constraints, which may relate to organizational behavioral issues, such as motivation or leadership (Simon, 1964). As the decision-making process of an A/E/C project team may face either or both constraints, the influence of organizational behavioral variables on the collaborative process can be seen through the impact of motivation or leadership on decision-making. Consider the example of offering a financial incentive as an independent motivational variable. Measurement of performance will reveal that offering a financial incentive has a stronger impact on speed than accuracy because, as Jenkins et al. (1998) argued, speed is more sensitive to effort and is under greater individual control. Accuracy, on the other hand, may require skills or abilities that the individual simply may not possess. Therefore, one must consider the dimension of the task that is most crucial, whether speed or accuracy.

The same situation frequently arises during the operations of a large-scale A/E/C project. Consider the reconstruction projects for tsunami victims in Aceh as cases in which two contradictory issues arose. Most projects that had been completed on time had serious problems with building construction quality, and some building units had deteriorated so badly that they were uninhabitable. On the other hand, other projects that put too much focus on achieving excellent quality and trying to meet all the user's needs faced continuing complaints from the beneficiaries due to delays in the construction process.[31] Examination of both types of cases indicated that the team in charge of planning and design had not anticipated potential problems at the beginning of the process.

Examination of several reconstruction projects in Aceh has indicated that organizational behavior variables significantly influence the architectural and planning processes, which in turn affect any situation that might lead to collaboration. This fact demonstrates that a more critical issue than organizational behavior must be taken into account in the decision-making process in planning and design. A deep understanding of the planning and design context, followed by local-based action, is a prerequisite to the wise management of the dynamics of organizational behavior variables in a particular project. In the globalized world, two building projects with identical building programs, similar construction technologies, and even similar management approaches can exist in two different parts of the world. Nevertheless, there is no assurance that the same organizational behavior variables of two projects within different cultural contexts will influence the planning and design decision-making processes in the same way.

In their research into how network power could instigate collaboration, Booher and Innes (2002) identified three conditions for effectively governing the relationship among agents in a collaborative network: diversity, interdependence, and authentic dialogue (DIAD). Collaborative policy processes are increasingly used as ways of achieving results in an era distinguished by rapid change, social and political fragmentation, rapid, high-volume information flow, global interdependence, and conflicting values. Network power can be thought of as a flow of power in which all participants share. DIAD networks, in which planners have many roles, are more capable of learning and adaptation in the face of fragmentation and rapid change than sets of disconnected agents (Booher and Innes 2002).

Gender issues

An issue of organizational demography in Aceh reconstruction that should have received much more attention during the decision-making process is gender. Indeed, research into the well-being and role of women was largely overlooked. A report published during the early phase of the recovery process show images of women who appear passive, in distress, and in a state of

being "cared for." Whereas 60% of the images include men, only 35.5% include women. Relationally, the report represents women in terms of domestic or quasi-domestic roles, with the images showing none of the 65 surveyed women actively involved in the physical labor of disaster response. In comparison, 35% of the images show men involved in physical labor associated with disaster recovery (Childs, 2006).

The staff of a local partner of an NGO that managed a housing project in Aceh reconstruction revealed that lack of knowledge of local culture had impeded the decision-making process for some period of time. Initially, they had been more focused on meeting with heads of household, predominantly men, as part of an effort to determine local aspirations for the project. However, they could obtain no significant feedback that would be useful for that planning process. On one occasion, the staff took the initiative to hold a forum for housewives and young women to identify their aspirations for their future houses and neighborhoods. The incredible response led the project stakeholders to make decisions during the planning and design process based on these local women's feedback.[32]

Regarding the question addressed at the beginning of this subchapter to the next level, how should professionals react to the dynamic influence of organizational behavior variables in the planning and design decision-making process? On the macro organizational level, collaboration is more a political term than a practical strategy of implementing efficient and effective reconstruction process. Although collaboration is often used to describe stakeholders successfully working together during the execution of recovery work, it is hard to define which practices are true forms of collaboration and how they positively influence recovery work. In response, I suggest that approaches to collaboration as a form of organizational behavior should be more focused on the micro rather than the macro context.

2.2 Micro-level organization

2.2.1 Group-level organizational process

According to Johnson and Johnson (2000), five major elements must be present for a group to successfully reach a goal: positive interdependence, individual accountability, promotive interaction, appropriate use of social skills, and group processing. To form a group, two or more individuals must be present and in like mindset of achieving a common goal, which can only be realized if certain skills are present. The skills required to have a successful group, and certainly to have a successful outcome, pertain to every group member and his or her participation and commitment. The existence of one element, the positive interdependence of group members, ensures that one member cannot succeed without coordinating his or her efforts with all the other group members to complete the task. This element also helps to eliminate diffusion of group responsibility. As each group member must partake equally and effectively to achieve the goal set, all members must have the same set of motivational factors. To be successful, the group must achieve its goals, maintain a good working relationship among its members, and adapt to the changing conditions it meets during the process of accomplishing the goal (Johnson & Johnson, 2000).

The literature does not consistently use the term *group* or *team* as the smallest collaborative unit in an organizational context, instead using the terms interchangeably in similar contexts. As the term *group* describes a more loosely coupled phenomenon than *team*, it appears more suitable in the context of people from different backgrounds working together on an A/E/C project (Schrage, 1989). In general, an A/E/C project is executed by an organizational group comprised of teams (or subgroups) of professionals and other project stakeholders (Cohen &

Bailey, 1997; Kozlowski & Bell, 2003). A/E/C teams often struggle with the typical problems that arise in large-scale construction projects, such as cost overruns and continuing delays. These problems become more critical when their severe effects on other parties not involved in the daily tasks of project management—owners of the building, projected users and their neighbors, and the public in general—are considered. Lack of collaboration among the project's participants is often suspected as the major cause of typical problems. The San Francisco Airport International Terminal Building Project is an example of a project in which lack of collaboration led to a $1 billion cost overrun and years of delay (Benne, 2005).

Growing awareness of the importance of collaboration in managing complex building projects has triggered recent research in this area. However, most research has focused on improving the mechanism of collaboration, while its ideal form, which is characterized by such abstract keywords as *leadership, shared understanding,* and *conflict resolution*, has not been operationalized. The presupposition that lack of collaboration arises from miscommunication among project participants (Kvan, 2000; Kalay, 2001) indicates a missing link between the fundamental issues of collaboration and efforts toward its implementation. Attention is focused on improving the communication process rather than resolving the underlying existing or potential problems among those who are supposed to collaborate. Given this fact, this section explores the nature of human interaction in managing complex building construction project through organizational behavior theories in order to characterize collaboration. Hence the research questions that address this goal do not ask *how* to collaborate but *what encourages* people to collaborate in a construction project: Why do people collaborate in one project but not in another? What are the organizational behavioral factors that characterize collaboration in this context?

The complex nature of the management of large construction project has attracted researchers in organizational behavior. One researcher who has examined cases closely related to this case is Shapira (1997), who examined six projects that he labeled "grand-scale construction projects." Based on a risk-taking perspective, Shapira investigated how the decision-making process had resulted in either tremendous project cost-overruns or continuous delays in project completion. This dissertation research slightly differs from Shapira's regarding the context of the construction process. Whereas Shapira focused his analysis along the continuum of the three phases of the construction process—the pre-construction, construction, and post-construction phases—this research specifically focuses on the pre-construction phase, particularly the planning and design phase (Fig. 2.2). This focus on the planning and design process reflects the scope of planning and design in large-scale construction projects, in which no one actor can independently complete one phase of the process by relying on his or her professional skills. For example, the architect cannot manage the design process with only architectural skills, requiring his or her collaboration with planners, building engineers, and surveyors, with the more complex and larger the project, the more urgent the need to include professionals from other disciplines in the project team. Considering this fact, this dissertation is based on theories of team performance and group processes, subfields of organizational behavior that are relevant to the nature of temporary organization in planning and design teams.

The growing complexity of building projects, both in terms of size and technology, has required reformulation of the design team. Within the complex context and functioning of a project, all expertise and collaboration must be drawn on from the early stage of the design process, and all the major actors, typically the planner, architect, and civil engineer, must collaborate to manage their tasks. Unfortunately, collaboration is almost never smooth in

practice, with conflicts among participants frequently leading to impediments. Most conflicts can be attributed to social-psychological aspects of the individuals who participate in the project.

In the field of organizational behavior, the team is discussed as part of a larger organization (Ilgen, 1999; Ilgen et al., 2005; Kozlowski & Bell, 2003). A single planning and design team can only effectively complete a small- or medium-scale construction project, whose low level of complexity allows a single architectural firm to manage the planning and design process independently. However, large or mega-scale construction project planning and design requires the formation of multidisciplinary teams composed of representatives from various organizations, including architectural firms, planning consultancies, engineering firms, building contractors, and many others, depending on the scale and complexity of the project. Given this fact, this study places the performance of the design team within the framework of the input-mediator-output-input (IMOI) model, a model of team development proposed by Ilgen et al. (2005). This model aims to respond to the limitations of the input-process-output (I-P-O) model used as the standard framework in research into team development. Using the IMOI model and applying major theories of micro organizational behavior, the following sections analyze the nature of collaboration in the forming, functioning, and finishing stages of team development.

2.2.2 Team performance

A classic system used to describe the nature of team performance, the I-P-O model (Steiner, 1972; McGrath, 1984; Hackman, 1987) has also been used to assess team effectiveness (Kozlowski & Bell, 2003). Hackman (1987) assessed team effectiveness according to multifaceted criteria that emphasize both internal (i.e., member satisfaction, team viability) and external (i.e., productivity, performance) aspects. However, in their recent paper, Ilgen et al. (2005) indicated several weaknesses in the I-P-O model, including that it fails to capture the emerging consensus about teams as complex, adaptive systems. Moreland (1996) elaborated that the I-P-O framework insufficiently characterizes team performance in at least three specific ways. First, many of the mediational factors that intervene and transmit the influence of inputs to outcomes are not processes. Second, the I-P-O framework limits the sequence of team performance to that of a linear path despite the potential that feedback loops may lead to the formation of a more cyclical path. Third, the I-P-O framework tends to suggest that team development proceeds in a sequence between categories—I then P then O—while in practice the process is much more dynamic than simple interaction between categories, such as IxP, PxP or PxO. The I-P-O model thus cannot effectively respond to the growing complexity of teams within organizations.

Anticipating these weaknesses, Ilgen et al. (2005) proposed the IMOI model, in which "M" is substituted for "P" to enable the model to cover a broader range of variables in explaining variability in team performance and viability. The extra "I" was added to explain the cyclical nature of a framework responsive to any feedback and the hyphens eliminated to signify that the causal linkages between categories may not be linear, and are more frequently nonlinear or conditional. In the IMOI framework, model team development begins with the forming stage (the IM phase), followed by the functioning stage (the MO phase), in which the team gains more experience working together. Finally, during the finishing stage (the OI phase), the team completes one episode in the developmental cycle and starts a new cycle.

Within this three-way temporal classification is another three-way categorization scheme that reflects whether the primary research focus is the affective, behavioral, or cognitive aspect of team development. In the formation stage, trusting is focused on affective mediators, planning

on behavioral mediators, and structuring on cognitive mediators. In the functioning stage, the aspects of affect, behavior, and cognition are each discussed under the topics of bonding, adapting, and learning, respectively. These categorical labels are used merely to identify the dominant aspects in a category, whether affective, behavioral, or cognitive, as any aspect could exist within any category.

Forming

The forming stage consists of the three categories of *trusting, planning,* and *structuring.* To have trust in a team, each member must feel that the team is sufficiently competent to accomplish its task, as usually expressed in terms of potency, collective efficacy, group efficacy, and team confidence, and feel safety within the team, meaning that he or she is confident that the team will not harm his or her individual interests. In the planning category, in which behavior is the dominant aspect, two related conditions must be present for effective planning. First, the team must be able to gather information available to the members and/or their constituencies, and, second, be able to evaluate and use this information to arrive at a strategy for accomplishing its mission. The structuring category, which is characterized by its cognitive processes, refers to the development and maintenance of norms, roles, and interaction patterns within teams. Two cognitive structuring constructs are considered dominant factors: a shared mental model, which emphasizes common cognitive elements among group members, and memory systems that emphasize the unique and distinctive cognitive elements of the group members.

Functioning

The functioning stage consists of the three categories of *bonding, adapting,* and *learning*. Within the category of bonding, which reflects affective feelings that team members hold toward each other and toward the team itself, two main interests are addressed: how to manage diversity of membership and how to manage conflict among team members. Behavioral processes in the adapting category fall into the two distinct subcategories of *performance in routine versus novel contexts* and the more general subcategory of *adaptability*, which reflects such behaviors as the ability to engage in workload sharing or helping behaviors. Research into the learning category focuses primarily on changes in the team's knowledge base. Most recent studies in this category fall into the two distinct subcategories of learning from team members who are minorities and identifying the best team member for performing specific tasks and capitalizing on the relevant knowledge.

Finishing

Groups and teams in organizational contexts may disband as they had planned to do so after completing a task or goal. They may also disband as they had not planned to do so, whether due to interpersonal tensions, task failure, or loss of interest in remaining together in the group (Arrow et al., 2000). Ilgen et al. (2005) found that compared with the other two phases of team development in their proposed framework, the finishing stage has received little attention. More empirical research into this final phase is thus needed, considering its importance in the life cycle of a team.

Conceptual framework

Analysis of Ilgen et al.'s (2005) proposed frameworks and models for studying team development reveals the potential of using team diversity to increase team performance. I argue

that an A/E/C project team should belong to a group whose criteria of complexity fit within IMOI model. The growing complexity of building projects, both in terms of size and technology, requires reformulation of project teams and the bringing together of all expertise at the early stage of the planning and design process. However, such collaboration is rarely observed in current A/E/C projects; instead, conflicts among participants that lead to obstacles are frequently seen.

To help resolve this challenge, this study attempts to place the typical planning and design process in a construction project context into the IMOI framework model of team development (Fig. 2.4). Following the characteristics of teams in an IMOI framework, the planning and design team must be viewed as one team in a series of teams in a construction project that revolves along the project continuum. As such, the outputs of the planning and design team will be inputs for the following team, most likely the construction team, and the design process of the planning and design team can be analyzed according the categorization of each stage in the IMOI framework. The major themes of organizational behavior, such as motivation, socialization, leadership, culture, and creativity, should be applied when analyzing how the stages in the IMOI framework assume roles in the collaborative processes in the team. During the forming stage, the issues to be analyzed are trust among team members; the planning of strategy to accomplish the team goal; and the structuring of norms, roles, and interaction patterns in the team. During the functioning stage, the issues are maintenance of bonds among members, adaptation of members to changing situations, and the means by which members learn from other members. The analysis of each stage and category will yield several propositions regarding the characterization of collaboration within a project team.

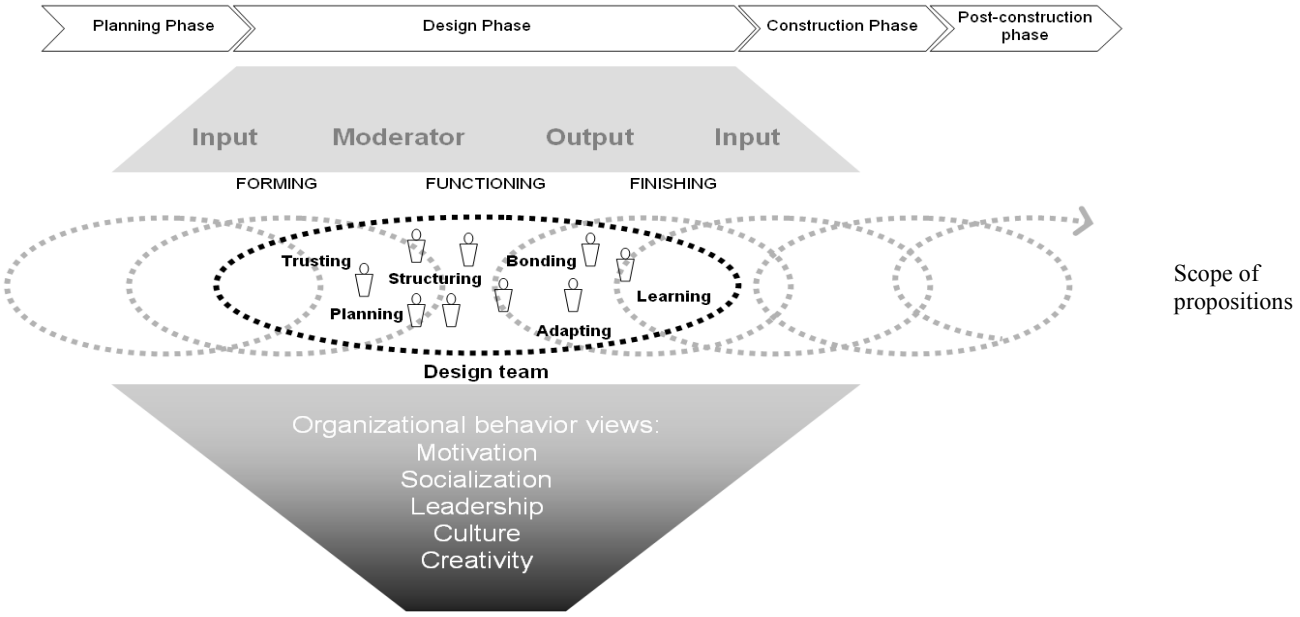


Figure 2.4: Placing the design process within the IMOI framework

2.2.3 Towards a collaborative process

The forming stage of a project team

Trusting

Sheppard and Sherman (1998) define *trust* as the confidence that another's motives will be positive toward one in situations involving risk. Having trust in a team means that each team member believes that team formation will lead to accomplishment of his or her task. According to Ilgen et al. (2005), several constructs are needed to build trust within a team. Among them, *team potency*, a shared perception among team members that they can be effective across tasks and contexts, and *team efficacy,* a shared belief that the team will perform effectively on a particular task, are particularly important because they affect the effort and resources used to manage a task (Shea & Guzzo, 1987).

Kozlowski et al. (2003) emphasized the strategic position of a leader in building trust within the team. Team efficacy, which reflects group cohesion, satisfaction, and organizational commitment, is influenced by past experiences, social modeling, and feedback. The leader should provide opportunities for members to perform well as a team, foster team efficacy via encouragement and modeling, and develop team potency to continuously improve team performance and the framing and addressing of novel situations. A high-potency team is more likely to develop adaptability by engaging in continuous improvement behaviors, such as taking risks and exploring alternative solutions to problems. Leaders can enhance team potency by creating successful mastery experiences and providing positive feedback.

When tasks are routine, the leader cultivates adaptive capability by developing or encouraging favorable attitudes, behaviors, and cognitions. In an A/E/C project team context, these factors are significant in building collaboration, although doing so requires some time. However, leadership in a project team is not a routine task; it is situational and relatively temporary, depending on how complex a project is. An A/E/C project team, which comprises many disciplines, requires a leader who maintains cross-discipline perspectives, as well as broader worldviews than those of the other members.

Here the idea of *shared leadership* is relevant. Under shared leadership, leader responsibilities, functions, or behaviors are widely distributed across members rather than concentrated in a single, appointed leader (Pearce & Sims, 2000, 2002). Shared leadership allows an adaptive team to prevent its appointed leader from becoming cognitively overloaded or overwhelmed by responsibilities. Shared rather than vertical leadership is thus more appropriate for highly interdependent teams performing complex functions. I argue that project teams assigned to a large-scale construction projects meet these complex function criteria.

Pearce and Sims (2000) proposed a model of shared leadership that includes several antecedents that are salient in the team improvement phase, including a leader who actively supports shared leadership; a mature team comprised of skilled and familiar members; and a task environment characterized by task interdependence, criticality, and urgency. There is empirical evidence that shared leadership explains more variance in team effectiveness than vertical leadership, as well as that high-performing teams exhibit more leadership behaviors overall and more shared leadership in particular compared to low performing teams.

***Proposition 1*:** Project teams that develop shared leadership mechanisms in conducting their tasks early in or soon after the forming stage will experience more effectiveness in achieving collaborative processes than teams that maintain traditional notions of leadership.

Planning

During the early stages of team development, one key factor that explains success and capability is the degree to which the team arrives at an effective initial plan of behavioral action. Teams that are most likely able to overcome problems are those that can anticipate problems in advance and have contingency plans in place from the very beginning. Better strategy development leads to greater levels of unsolicited information sharing, more well-developed team mental models, and higher performance during high-workload situations and complex tasks (Ilgen et al., 2005). Elliott et al. (2001) emphasized the critical role of speed and accuracy in accomplishing complex tasks. However, meeting both of these task requirements at the same time is difficult. A manufacturing team can work quickly to produce a large number of products, but these products may have more defects than those produced by a team working more slowly and carefully, which would produce a smaller number of products. This type of speed-accuracy trade-off is ubiquitous in complex tasks. The earlier a team can address this trade-off during the course of their task, the higher the probability that team solidity can survive until the end of a production cycle. Information sharing is one of the determining factors in team survival.

***Proposition 2*:** Collaborative work within a project team is characterized by information sharing among members aiming to avoid unanticipated problems that might arise during the construction process.

Structuring

Structuring refers to the development and maintenance of norms, roles, and interaction patterns in a team. One important construct in this category is a *shared mental model*, which Mohammed and Dumville (2001) defined as an organized understanding of relevant knowledge shared by team members. This model emphasizes common cognitive elements among group members and focuses on the collective knowledge of individual team members. During a building construction project, three major players—the planner, architect, and civil engineer—must collaborate to execute the planning, design, and construction processes. Unfortunately, true collaboration is rare, with conflicts often arising from social-psychological differences that lead to project obstacles.

Lack of shared understanding and perspective-taking theories

Professionals who work independently according to a linear construction process (planning-design-implementation/construction) often struggle when they are expected to share their conception of the process with other professionals. I argue that this problem arises from differences in the perspectives of each professional based on his or her expertise; in other words, his or her "ego." As each professional thinks that his or her expertise is the most crucial for the project, he or she argues that his or her area of expertise is the basis of a solution whenever a problem arises.

Theories of perspective-taking can help explain this phenomenon (Batson et al., 1997; Galinsky & Ku, 2004; Galinsky, Ku, & Wang, 2005). Engaging in perspective-taking benefits individuals by increasing self-other overlap in cognitive representations and allowing them to apply this perspective-taking-induced self-other overlap to reduce stereotyping and prejudice. However, whereas perspective-taking decreases stereotyping of others through application of the self to the other, it increases stereotyping of one's own behavior through inclusion of the other in the self.

To promote social bonds, perspective takers utilize information, including stereotypes. They also use heuristic devices, such as behavioral mimicry, to coordinate their behavior with others, which in turn facilitates social bonds. Indeed, perspective-taking is not unlike many decision-making heuristics, which are generally useful and efficient cognitive guides but can lead to systematic errors and departures from rationality (Tversky & Kahneman, 1974). Similarly, perspective-taking-induced mimicry typically facilitates social bonds, but may lead the perspective-taker to act in stereotypical ways that, ironically, threaten social bonds. While using perspective-taking to induce self-other overlap may not uniformly produce beneficent outcomes, perspective-taking is an effective strategy for creating, preserving, and supporting social bonds (Galinsky, Wang, & Ku, 2008).

I argue that professional ego affects team effectiveness, with the level of ego reflecting a team member's knowledge of his or her colleagues' expertise and social and cultural attributes. Based on my argument and the theories discussed above, I propose that introducing the variable of the professional ego into the IMOI model such that the professional ego becomes the "M" factor will allow for better assessment of the effectiveness of an A/E/C project team.

***Proposition 3*:** The greater a member's knowledge of the other members' social and cultural attributes, the less conflict that will arise regarding team performance, which increases the extent of collaboration.

The functioning stage of a project team

Bonding

Bonding reflects affective feelings that team members hold toward each other and the team as a whole. The two main interests in studying constructs in this area are the management of diversity of membership and the management of conflict among team members. Globalization has had a significant impact on the building industry throughout the world, particularly on architectural firms in developing countries. Conglomerates in these countries often race to build mega buildings and super blocks for the headquarters of their company and to express the corporate image. To realize this ambition, they typically turn to multinational architectural firms rather than local firms, who experience difficulty remaining competitive in a capitalist world (Sklair, 2005).

However, this practice is often challenged by local social, cultural and political issues. Even though hiring an international firm may appear to be a good strategy to signal commercial value, project implementation depends on local conditions, making the contribution of local experts necessary in every step of the planning, design, and construction process, and particularly important in meeting building standards or regulations. Consideration of these facts leads to consideration of the extent to which local experts should become involved with the team under conditions that could lead to conflict.

In Indonesia, for example, an article of a governmental law that regulates foreign architectural practices concerns the involvement of local experts on a multinational project team. In several cases, conflict appeared to arise between foreign consultants and their local partners when the foreign consultants were reluctant to share some of the tasks with their local partners. Meanwhile, the developer, serving as the representative of the owner, was more concerned with the final products, the building's appearance and performance, than resolving the conflict.[33]

Referring to Ellis et al. (2003), I suggest that the primary goal of a project team in this case becomes attaining group cohesion rather than increasing team learning. In this case, the

team requires members who are all highly agreeable. Hence, the challenge is promoting agreeableness among team members from diverse backgrounds. The diversity of team members is often discussed within the topic of demography, as research suggests that demographic composition influences communication, with people tending to communicate with those similar to themselves (Pfeffer, 1983; Zenger & Lawrence, 1989). From a demographic perspective, team performance can be assessed through team processes and outcomes, both of which are influenced by the homogeneity or heterogeneity of the team members. As previously discussed, studies have reported that diversity could have a positive, negative, or no effect on team effectiveness.

Based on this brief literature review, I propose that team diversity can be used to improve team performance. Based on my observation of multinational planning and design practices in Indonesia, I argue that most problems concerning team diversity have their roots in two types of factors: factors related to the demographic aspects of education and tenure and factors related to reward structures. The factors of education and tenure fall within the category of bonding or the functioning stage of team development, which is essential in strong team performance. I observed how differences in planning and design practices became the sources of lack of trust between local experts and multinational teams during my field research into the recovery projects in Aceh. Local experts who join multinational firms frequently complain about differing job descriptions for local and international staff. Review of several cases indicated that the work performance of an employee did not reflect the required skill and capability for that position. This typically occurs when high-level (senior manager and above) positions are occupied by foreign staff whose educational level and work experience are lower than those of local staff, who, ironically, are placed in lower-level positions. This condition often leads local experts to have negative attitudes toward foreign staff. On the other hand, some multinational firms place staff in positions based on objective and transparent criteria and provide the same opportunities to local staff and foreign staff.

Unfair job conditions affect another aspect of team performance: the reward structure. There is often a wide disparity between the salary and other forms of compensation paid to local and foreign staff, which perpetuates another form of prejudice. Local staff may also believe that foreign staff benefit from having fewer living expenses than they do.[34] Given these facts, I offer the following propositions regarding the effect of demographic diversity on the performance of multinational design teams, placing Tsui, Egan, and O'Reilly's (1992) argument that education and tenure have little effect on an individual's organizational attachment within the context of the IMOI model.

***Proposition 4*:** The members of a design team in which tasks are fairly distributed between local and foreign members based on education and tenure will experience a higher level of trust than members of teams in which this policy is not practiced. Consequently, the greater the disparity in the reward structure between local and foreign staff, the less the likelihood that team collaboration will be generated.

Chapter 3
Collaboration: From Design Process to Process Design

3.1 Collaboration

The nature of collaboration

Many believe that they have been performing a collaborative process when they have in fact been merely engaging in routine collaboration. Mattessich et al. argued that routine collaboration can be categorized as either *cooperation*, which is characterized by informal relationships without any common mission, structure, or effort to share, and thus poses virtually no risks to participants, or *coordination*, which is characterized by more formal relationships and understanding of compatible missions. Although there is some sharing and division of roles, authority still rests in each party. Therefore the risk is still not too considerable. Collaboration is the most risky situation to be shared among participants. Authority is determined by the collaborative structure. Collaboration needs full commitment to a common goal, and consequently the level of trust must be higher than those on the other two (Mattessich et al., 2001).

These definitions indicate that collaboration may be understood within an array of intertwined components. Based on its purpose, the interdependence among the participants, the management under which it is conducted, and its duration, collaboration could be classified as a form of association, teamwork, or creative collaboration. The distinction among each type of collaboration is very clear, particularly within the context of professions. The main purpose of an association is to expand the range of services among persons with different expertise. Collaboration is generated here not to solve problems but rather as part of a business arrangement. The risk of losing members during collaboration is not critical because interdependency among participants is not a prerequisite, unlike in a teamwork setting. The purpose of teamwork is the division of labor, and the coordinator's task is either scheduling or resolving conflicts as a management strategy for handling the division of labor. Like an association, a teamwork setting poses little risk (Kalay, 2004).

A significant as well as unique characteristic of collaboration is the creative aspect of working together. This idea shapes the third form of collaboration, which is described as *creative collaboration*. Design collaboration requires a higher sense of working together in order to achieve a holistically creative result. It is thus a far more demanding activity, as it is more difficult to establish and sustain than is simply completing a project as a team (Kvan, 2000; Kalay, 2004).

In summary, understanding collaboration means understanding the nature of relationships among a group of people. Doing so requires examining collaboration as a process while taking the respective product into account, as it is an indicator of the success or failure of collaboration. Collaboration is much more than sharing ideas and views about a joint project. It is a state of mind, as well as a willingness to *listen*, as much as it is a willingness to talk. Furthermore, it is a willingness to open oneself to the possibility of discovering and joining in the formation of new paradigms, as well as to risk failure (Shibley & Schneekloth, 1988).

Professional Collaboration

In his book *No More Teams*, Michael Schrage presents a series of cases that described how unpredictable events led to collaborative work among professionals who were performing

their routine tasks. A surgery team consisting of different specialists that faces an unpredictable condition regarding their patient during an operation, a small team in an advertising agency that must produce a great idea within a very tight schedule to capture a highly reputable yet challenging client, or the pilot of an airplane that is experiencing serious trouble during a flight who must team up with air traffic control officers are common examples of the nature of collaboration and the importance of redefining the meaning of collaboration among professionals. Collaboration has several constraints, including expertise, time, money, and conventional wisdom; is analogous to an assembly-line process; and cannot be routine and predictable (Schrage, 1989).

Professional collaboration emerges from the reality that the complexity of a task prevents professionals from accomplishing it on their own due to lack of knowledge, power, or resources. The need to collaborate cannot be separated from the concept of specialization in the professional world. Since the Industrial Revolution, *specialization* or *division of labor* has developed rapidly, as individuals have found it advantageous for the efficient production of any goods that they consume. First known as craftsmanship and later as professionalism, specialization is essential as production processes become more and more complex and ubiquitous (Kalay, 2004). In general, *professional collaboration* can be defined as "the agreement among specialists to share their abilities in a particular process, to achieve the larger objectives of the projects as a whole" (Hobbs, 1996). This is quite a broad definition that can be interpreted in many different ways, and that raises further questions: Why is collaboration needed in professional practice? What is the nature of collaboration in practice? What kind of professionalism is needed to conduct a collaborative process?

Reflection-in-action

Argyris and Schön described the problematic nature of professionals in performing their profession, particularly in serving the people whom they should serve through their profession, and in attaining the competency needed to respond to a more and more complex society (Argyris & Schön, 1977). One problem identified by Schön was the domination of a *technical-rational mindset*, which views professional practice as a process of problem solving through selection of the option best suited to established ends from available means (Schön, 1983). In terms of conducting a collaborative process, professionals with a technical-rational mindset tend to see collaboration as merely a means to achieve a goal. However, such collaboration is effective only when a goal is fixed and clearly defined (Schön, 1983). What seems to be collaboration here is actually the routine working together of professionals and clients, while the atmosphere in real collaboration is unique. People want to collaborate because they are facing uncertainty; they do not know how to deal with a process individually. Collaboration thus becomes a necessary aspect to master the unknown (Schrage, 1989).

In facing uncertainty and complexity in collaboration, professionals need relevant skills that are not dependent on established theories and techniques. They do not keep means and ends separate, but define them interactively during the process, and later convert them into action. Professionals must go through a process called *reflection-in-action* as a response to the limitations of technical rationality (Schön, 1983). All participating professionals must be attentive to the emerging solution and to the intentions and actions of their fellow collaborators, reflect upon them, and critique them. The input received from fellow collaborators may trigger new, innovative solutions or combinations not seen earlier. In this form, collaboration becomes an instrument for the creation of new knowledge (Kalay, 2004).

Over the time, the knowledge base needed to master a specialization grows and becomes more complex, which could lead to the emergence of new specializations. Accordingly, it has been estimated that a profession that needs at least ten years to be mastered tends to break up into specializations (Simon, 1969). With so many specializations, collaboration among professionals has become a required and routine task. However, globalization, which has brought positive and negative impacts to every corner of the world along with specific local problems, demands more advanced professional skills for collaborative work.

This reality has a broader implication in practicing collaboration: It involves not only professionals but also individuals or groups with their own interests in the event or project. All parties with a stake in the project must work together and negotiate. Nonprofessionals who join the group make implementation of collaboration much more challenging, if not impossible. Public projects, such as a mass-housing project, revitalization of an urban area, or a post-disaster reconstruction project, are some of the best examples. In such cases, deciding whether and when to collaborate is truly strategic. Viewing a project as the sequential phases of planning, designing, and constructing becomes more difficult. Should the collaborative process be examined according to each phase or as an integrated process covering all the project phases?

3.2 Collaborative planning

As collaboration is highly dependent on interaction among individuals or groups, communication and its technical factors are important matters in collaboration. However, investigation of theories of collaboration in planning has focused on social interaction among individuals, groups, or project stakeholders in such areas as conflict assessment (Fisher et al., 1991), mediation (Susskind & Cruikshank, 1987), and consensus building (Susskind et al., 1999). Consensus building itself has become central idea in collaborative planning practice (Innes & Booher, 1999a, 1999b). Other research has focused on significant issues in collaboration, such as leadership (Bryson & Crosby, 1992; Chrislip & Larson, 1994) and more technical issues, such as developing methods to effectively practice collaboration through process design (Susskind et al., 1999; Straus, 2002).

3.2.1 Addressing complexity

Consensus building

Consensus building is basically built upon the practices of negotiation and mediation (Susskind & Cruikshank, 1987). Consensus building in this context is considered a process that is truly facilitated as opposed to merely chaired. A professional facilitator or a chair may act as the facilitator, or a task group may establish equality among its members to enable open discussion (Innes & Booher 1999b). This process uses special meeting management techniques that allow all participants to be heard and be informed, and encourages discussion that is both respectful and open ended. The techniques follow the interest-based model of bargaining (Fisher & Ury, 1991), and assumptions and constraints are not taken for granted but explored. Ways of moving beyond interest group conflicts are explored by drawing on principles of conflict mediation and consensus building. Both principles emphasize the potential for collaborative discussion of shared concerns about specific issues, such as local environmental changes, through which people can come to learn about potential impacts and possible ways of valuing and addressing them. Through these discursive practices, people learn about each other and different points of view, and come to reflect on their own point of view. In this way, a store of mutual understanding is built up, a type of social and intellectual capital (Innes, 1994).

Consensus-building processes concern not only producing agreements and plans but also engaging in experimentation, learning, change, and the building of shared meaning. Consensus-building processes should be evaluated in the light of principles of complexity science and communicative rationality, which are both congruent with professional practice and offer principles for evaluation and a set of process and outcome criteria (Innes & Booher, 1999b). Consensus-building work can build trust, understanding, and new relations of power among participants, generating social, intellectual, and political capital that can endure beyond the particular collaborative effort (Innes, 1994).

Nevertheless, collaborative planning is only appropriate under certain conditions. Experienced process designers and facilitators conduct conflict assessment before recommending that a collaborative effort be undertaken (Susskind et al., 1999). If key stakeholders have better alternatives to a negotiated agreement and cannot be brought to the table, they will not be. Accordingly, they will not have an opportunity to produce collaborative outcomes, which may well co-opt or anger participants. A process may focus on too broad a purpose to convince participants there will be practical solutions or that a task is appropriate to their skills and interests. Moreover, an unmanageable participant can drive others away (Connick & Innes, 2003).

The several studies into collaboration as a culture have reached no consensus. Schuman (2006), who compiled several terms referring to collaboration from numerous fields, reported that there is no single way to specifically define the culture of collaboration. In a study that asked five executives involved in a discussion, "What have we learned about creating collaborative cultures in our organizations?" Kaner (2006) concluded that the participants did not share the same meaning or vision of a culture of collaboration. However, he reported that they expressed some agreement on several ideas, including agreement that discussing collaboration is actually discussing participatory values. Based on his findings, he argued that a particular context of collaboration has its own manifestation of collaboration.

Most scholars agree that collaboration is a difficult process to implement. One essential condition for successful collaboration is to avoid using a mechanistic worldview, which leads one to either fail to identify many of the most important outcomes or undervalue them (Connick & Innes, 2003). Based on their research into several models of planning and policy making, Innes and Booher (2003) concluded that collaboration is the model that best addresses a high level of diversity and interdependence of interests. Collaboration could be built through authentic dialogue in which reciprocity, relationships, learning, and creativity among the participants are encouraged.

Innes and Booher (1999b) proposed that the following process criteria (Table 3.1), all of which are present in a collaborative dialogue, and their corresponding outcomes (Table 3.2) should be present for an effort to be labeled collaborative:

Table 3.1: Process criteria for collaborative dialogue (Innes & Booher, 1999b)

* Includes representatives of all relevant interests.
* Is driven by a practical purpose and task shared by the group.
* Is self-organizing.
* Engages participants as they learn and interact.
* Encourages challenges to assumptions and fosters creativity.
* Incorporates many kinds of high-quality information.
* Seeks consensus only after discussions have fully explored issues and interests and significant effort has been made to find creative responses to differences.

Table 3.2: Outcome criteria for collaborative dialogue (Innes & Booher, 1999b)

* Produces a high-quality agreement.
* Ends stalemates.
* Compares favorably with other planning methods in terms of costs and benefits.
* Produces creative ideas.
* Results in learning and change in and beyond the group.
* Creates social and political capital.
* Produces information that stakeholders understand and accept.
* Sets in motion a cascade of changes in attitudes, behaviors, and actions; spin-off partnerships; and new practices or institutions.
* Results in institutions and practices that are flexible and networked, permitting the community to become more creatively responsive to change and conflict.

Critics of consensus-building-based theories of collaboration allege that they incorrectly claim that external power differentials are deterministic, as well as that they result in lowest-common-denominator solutions and the loss of valuable tension and produce agreements that are fleeting at best. Most researchers and critics agree that consensus building is time consuming, requires skill and training, and is only appropriate in situations of uncertainty and controversy where all stakeholders have incentives to come to the table and to engage in mutual pursuit of their interests (Innes, 2004)

3.2.2 Leadership

The role of the facilitator is central and instrumental in reaching a mutual agreement in consensus building. I assert that consensus building can be achieved in any setting, whether a group or team setting. In larger organizational contexts, such as those involving intergroup coordination, a facilitator should be equipped with adequate leadership capability. The leaders who are most effective in addressing public issues are those who have the credibility to bring together the right people to create visions and solve problems. Several theories help one understand which leadership qualities are required in a complex interorganizational context of collaboration, such as those developed by Chrislip and Larson (1994) and Bryson and Crosby (1992).

Drawing on their extensive research, as well as on the advice and guidance of the leading scholars and practitioners in the field, Chrislip and Larson describe how elected officials and other civic leaders can generate the civic will to break through legislative and bureaucratic gridlock, address complex issues, and engage frustrated and angry citizens by designing, initiating, and sustaining a constructive collaborative process (Chrislip & Larson, 1994). In the past, society looked to single institutions to solve community problems. Today, such complex

public problems as homelessness, urban crime, and global warming spill beyond the capacity and jurisdiction of any single organization, and thus must be addressed by many agencies that share power and resources. Bryson and Crosby explain that the dynamics of change in a shared-power, "no-one-in-charge" world requires a comprehensive, integrated approach to public leadership, and show how it can be used by community leaders in business, nonprofit organizations, and government to address massive public problems. Bryson and Crosby describe how leaders can plan and manage each phase of policy change, from identifying public problems and exploring solutions to developing specific proposals and implementing new plans, using a combination of practical information, negotiation techniques, and networking strategies to help them inspire and mobilize collective action (Bryson & Crosby, 1992).

3.2.3 Participatory planning

Since the beginning of the reconstruction phase, the BRR, as the coordinator of the entire recovery process, had prioritized one principle of reconstruction work above all others: that every project should attempt to meet as many beneficiaries' aspirations for it as possible. Many models of participatory-planning-based reconstruction processes were developed by donor agencies to support the practice (Fig. 3.1). However, analysis of many cases indicated that use of the practice had created more obstacles than would have been created with minimum public involvement. Several experiences from the field indicated that the roots of the problems were weaknesses in the implementing agency staff in charge of day-to-day project operation in addressing the typical exhausting and time-consuming participatory-based-planning approach.[35] Critiques of this approach have asserted that citizen participation in the planning process is aimed at the realization of the public interest, but it is difficult to define the public interest (Day, 1997).

Innes and Booher criticized public participation as counterproductive, arguing that it often leads to anger and mistrust, particularly in the absence of key elements, such as authentic dialogue, networks, and institutional capacity. They explained that participation should be understood as a multiple set of interactions between citizens and other players who together produce outcomes by developing an alternative practice framework, creating forums and arenas, adapting agency decision processes, and providing training and financial support (Innes & Booher, 2004).

Engaging in participatory-based planning is not a simple task that can be easily conducted by any professional in planning practice; it requires trained and highly experienced. Goethert and Hamdi (1988, 1997) proposed several types of workshops as the ideal forums in which to engage in participatory-based planning, depending on local situations:

1. Community action planning or microplanning workshops
2. Planning for real workshops
3. Goal-oriented project planning (GOPP) workshops
4. Urban community assistance teams (UCATs)

The strength of microplanning workshops is that they facilitate rapid data gathering and problem identification. The strength of planning for real workshops is that they effectively mobilize participants' interests and support, critical aspects in community-based development programs. As very structured workshops, GOPP workshops can customize institution policy to people, as can UCATs, which have mostly been used in more developed countries (Goethert & Hamdi, 1988; Hamdi, 1991; Hamdi & Goethert, 1997).

Figure 3.1: Typical flow of activities in community-based/participatory planning in housing reconstruction (Source: Multi Donor Fund, 2006)

A people-driven reconstruction process

Projects that largely succeeded used a community-driven reconstruction process as a strategic approach to facilitating project completion. The best example of this kind of project is that used in Ulee Lheue village (Dercon & Kusumawijaya, 2007). In a larger context, wide application of the approach to reconstruction projects following the Yogyakarta earthquake, which were mostly supported by the Java Reconstruction fund, led to much success in terms of

recovery speed (Diposaptono, 2009).

In the reality of Aceh reconstruction, implementing participatory planning was not a simple task, often resulting in mere slogans. The operators were not prepared to initiate intensive dialogue with the community, while local people unfamiliar with this development approach appeared skeptical, not understanding how it related to the construction of their new houses. Concerns arose that all procedures were eventually completed only to produce planning documents describing plans infeasible for implementation.[36]

***Gotong royong*, the local spirit of collaboration**

People participation in local development has long been a vital aspect of local community in many parts of Indonesia, with each tribe having its own collaborative tradition that serves as a means of local collaboration. On the national level, this form of collaboration is recognized as *gotong royong*. Unfortunately, there has been some indication that the practice of *gotong royong* is declining within local communities within the urban context (Koentjaraningrat, 1961; Palmier, 1963). In an examination of *gotong royong's* deep roots in the political traditions of each Indonesian tribal group, Bowen (1986) found that, also unfortunately, it was widely used as a political tool by Suharto's Administration between the 1970s and the 1990s. Many governmental programs appealed to the spirit of collaboration as a development principle while, in reality, it was part of a strategy to strengthen and sustain the regime.[37]

Until recently, *gotong royong* in the Aceh context was still widely practiced, even in urban areas such as Banda Aceh.[38] Theoretically, this practice had great potential to support the principle of people participation or community-based development during the reconstruction process. However, the opposite occurred, with many reconstruction programs even damaging this tradition by simply using the wrong strategies to encourage people participation. One of the most controversial programs was the CFW program, in which local people were paid in cash for any form of recovery work, primarily cleaning up debris in their neighborhood. After this program was introduced, it quickly became popular among the NGOs that managed reconstruction projects. Ironically, it led local people to participate only if they were paid to do so, decreasing their incentive to perform the voluntary work of *gotong royong*.[39]

3.2.4 Towards a collaborative network

Collaboration is not a simple process that should be conducted only if the required resources are available. People participation is only one condition of collaboration; other project participants, such as donors, implementing agencies, government (local and central), planners, architects, contractors, building material suppliers, and many other stakeholders must be considered to practice true collaboration. Otherwise, true collaboration does not result, simply another form of "working together."

The process of collaborative planning has its critics. Tewdwr-Jones and Allmendinger have identified three broad areas of concern and criticized Habermas's original theoretical distinction of communicative action as a fourth separate concept of sociological action. They explain that although it is useful in dissecting planning and the role of values and consensus-building in decision-settings, collaborative planning theory fails to adequately incorporate the peculiar political and professional nuances that exist in planning practice (Tewdwr-Jones & Allmendinger, 1998).

Huxham has emphasized that making collaboration work effectively is highly resource consuming and often painful. His strongest piece of advice to practitioners regarding the urgency

of collaboration is "Don't do it unless you have to." His argument is that unless the potential for gaining real collaborative advantage is clear, it is generally best, if there is any choice, to avoid collaboration. It is worth noting, however, that collaborative advantage sometimes comes in non-obvious forms, and may be concerned with the process of collaborating rather than the actual output. For example, the advantage may come from the development of a relationship with a partner rather than through achieving the substantive aims of the collaboration (Huxham, 2003).

Within a complex context and with complex ideals of collaborative planning, it is very difficult to observe ideal collaboration in real practice, as evidenced during the Aceh reconstruction in the context of large-scale planning and design practice. While using a collaborative process might not be a necessity in order to reach a project goal, applying the principles of collaboration may provide ideal parameters with which to maintain the effectiveness of project operation, particularly if the operation occurs within a network of power (Booher & Innes, 2002).

Using the acronym DIAD to represent its main concepts—*diversity, interdependence, and authentic dialogue* (Fig. 3.2)—Innes and Booher argue that a collaborative network should be viewed as an organic system:

> Diversity is the source of raw material as it brings together the ideas, values, interests, and knowledge into a new fabric. Interdependence among the participants is the source of energy as it brings agents together and holds them in this system. Authentic dialogue is the genetic code, providing structure within which agents can process their diversity and interdependence. Network power is the resulting life force of patterned action, learning, adaptation, and reproduction. (Innes & Booher, 2003, 2010)

In this dissertation, I use the DIAD model as the basis for investigating the existence of collaboration among the stakeholders in the Aceh reconstruction process. By doing so, I provide understanding of how the concept of network power can be used to understand the dynamics of negotiations among stakeholders and to identify what is lost and what exists among the DIAD elements that make collaboration present in and positively affect a project.

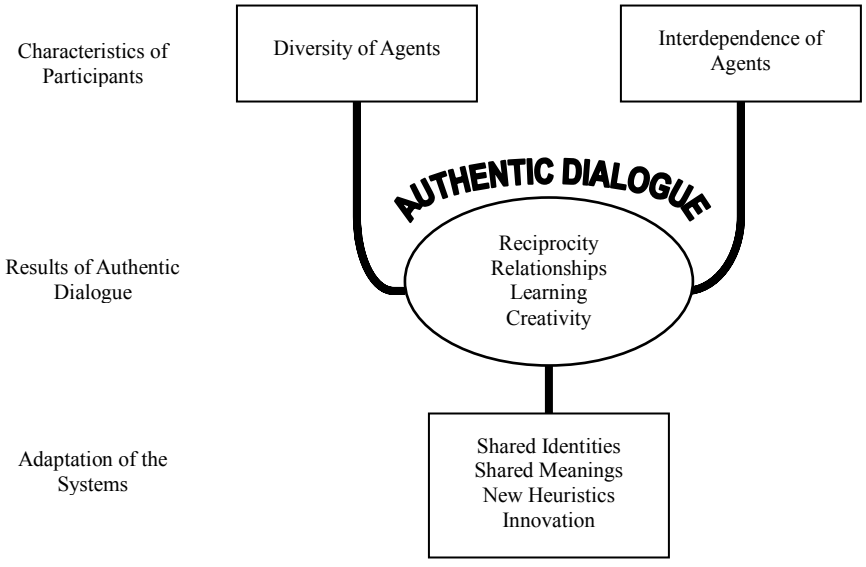


Figure 3.2: DIAD framework (Source: Innes and Booher, 2010)

Continuous presence of project stakeholders

Every project in the Aceh reconstruction effort existed in a unique project context within the realm of disaster recovery. At the same time, despite its independence, it existed as part of a large-scale reconstruction project, making coordination difficult. The project context led to a situation that encouraged many project operators to move on to another project before completing finishing the previous project. During the early phase of Aceh reconstruction from late 2005 to late 2006, it was rare to find a project that had been managed under one solid project management team from initiation all the way until completion.[40]

From the DIAD perspective, this situation is certainly not favorable for engaging in a collaborative process. I found that many projects consistently managed by the same agencies demonstrated an effective and efficient reconstruction process which reflected the existence of a collaborative network, as found in the DIAD model. On the other hand, many projects in Banda Aceh were categorized as successful although they had been managed by different agencies during the planning-design-construction process.[41]

Based on this fact, engagement in a collaborative process does not appear to be the right parameter for project success if the final product serves as the only indicator of success. Indeed, the essence of a project is the *entire set of actions* taken during the continuum of project realization. Assessing a project based on only the final result could thus be misleading. Stakeholders could easily forget the painful processes, including inefficient and ineffective practices during implementation, because of the good impression provided by the final product. In this context, architecture plays a significant role in shaping this image, although, ironically, architectural factors are rarely considered to be the main interests of any stakeholder in a reconstruction process.[42]

In conclusion, two significant elements of the collaborative process, the actors and the issue (the stakeholders' interests), have distinct features in the disaster reconstruction context. Collaboration should only be practiced if all stakeholders that have existed from project initiation can be identified. All stakeholders should be involved with the entire negotiation process at every stage of project development, no matter how small their role at a particular stage. On the other hand, if few stakeholders are available during the early stage of reconstruction, engaging in a collaborative process should not be a priority, as new stakeholders that later join the project could change any consensus previously made, significantly delaying the project when time is a critical factor. Negotiation should be focused on project processes rather than on final products related to the final architectural appearance. This does not mean that any stakeholder's interest in architecture should be put aside, but that the priority is to examine the entire process that leads to the expected final architectural product.

3.3 Architectural collaboration

While theories of collaboration in planning practice have become increasingly discussed in the context of social-organizational issues, theoretical discourse in the field of architectural practice remains related to communication and its technical aspects. The main issue is effectively and efficiently communicating architectural solutions to problems that emerge during the design process. Contrary to the conception of a process as a dynamic activity, architectural design collaboration is simply a representation of the standard design phase (Fig. 3.3). Consensus building during this sequential activity, if present, is generated through negotiation on the architectural product, with the arguments of those who support or oppose a design limited to the extent of their knowledge about the product.

Consider as an example the most common and simple A/E/C project, that of constructing a single house. All participants in the architectural design process would likely think that they had practiced a collaborative process if they were asked if they had done so. Their answer would be based on their own perception on the nature of working together during the process. One factor that contributes to this attitude is the view of the design process as part of a process-product package, which leads the participants to focus on the final product and overlook any negative experiences after completing the process.[43] This is a fundamental misunderstanding of collaboration in current architectural design practice the can be explored by asking several questions based on Innes and Booher's (1999b) characterization of the collaborative process: Did the process produce a high-quality agreement? Did the product successfully end any stalemates among the participants? Was the method used favorable compared with other planning/design methods in terms of costs and benefits? Did the product reflect creative ideas? Examining this situation requires investigation of at least two issues which dominate current research into collaboration in architectural design: the collaborative architectural design process itself and communication.

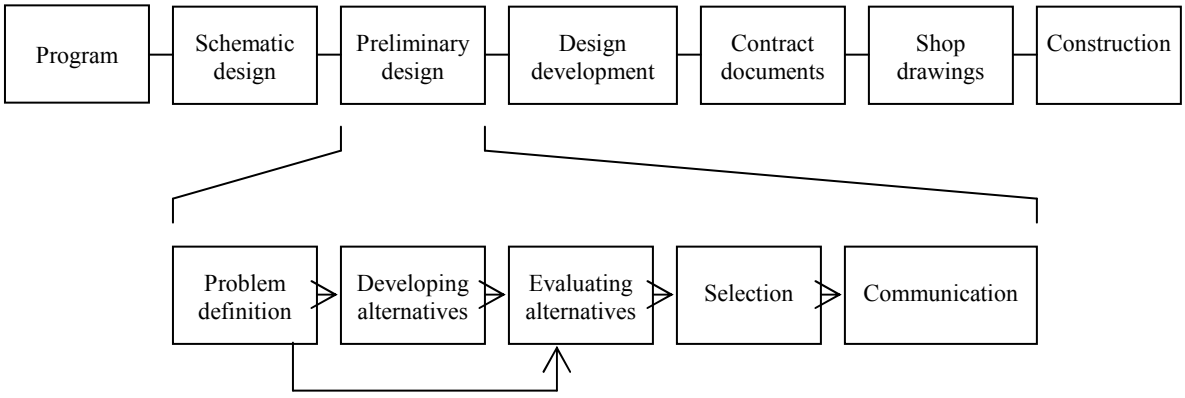


Figure 3.3: Architectural design phases (Laseau, 1985)

3.3.1 The collaborative architectural design process

Participants of collaboration in an architectural design process come from a greater variety of backgrounds than those involved in other processes. Participants in the architectural design process or, in more general context, in an A/E/C practice consist of individuals from different professional backgrounds who have different goals, objectives, and even belief systems in conducting their professional practice. Unlike collaborators in other forms of professional practice, such as medicine or jurisprudence, who share a common educational basis, architects, structural engineers, electrical engineers, clients, contractors, suppliers, property managers, and other professionals who join an A/E/C project team rarely share a common educational foundation.

As such, collaboration in an A/E/C team can be considered collaboration among

> temporary multi-organizations, where participants from *independent organizations* come together joining force to accomplish a specific project. While they work together to achieve the common, short-term goals of the project, each organization also has its own

> long-term goals, which might be in conflict with some of the goals of the other project team member, thereby introducing issues that are extraneous to the domain of collaboration. (Mohsini, 1992)

These issues may be financial, legal, ethical, or professional. Another unique aspect of collaboration in an A/E/C project is its tendency to stretch out over a prolonged period, possibly outlasting the original participants. Nonetheless, the decisions and actions that they took while part of the project team may still impact and constrain the freedom of action of the remaining participants (Jockusch, 1992).

The need to manage various participants in architectural design is the reason for implementing collaborative processes. However, the wide spectrum of an A/E/C project, which is related to the complexity of the project's functions, size, and scale as well as its context, affects determination of whether professional collaboration is necessary. What is meant as collaboration here is *creative collaboration*, not routine collaboration, which requires a higher sense of working together to achieve a novel result. As such, it is a far more demanding activity, one that is more difficult to establish and sustain, than is simply completing a project as a team (Kalay, 2004). Consequently, it is valuable to identify which circumstances encourage creative collaboration.

Collaboration and shared understanding

The aim of forming a team in design project is to share knowledge and information to obtain the best possible result. Creative collaboration is much more than sharing ideas and views about a joint project, and thus requires that team members synchronize their activities and adhere to "established" meanings. Each participant comes from different a discipline and develops his or her own meaning to facilitate the discourse within his or her own subculture (Kalay, 2001). Meanings established by one discipline, however, may not be understood or may be understood differently by another discipline.

Valkenburg has argued that addressing problems in understanding the meaning of design content, the team must institute a *shared understanding*, a mutual view among the team members on relevant design topics and design activities. Shared understanding is an important condition for team design and team decision-making, particularly when facing the challenge of synchronizing individual activities in social interaction to achieve shared understanding among team members (Valkenburg, 1998).

Creative collaboration is much more than sharing ideas and views about a joint project. It requires a new conception of the self: a view of one's self, of others, of society, not as fixed entities, but as relations able to develop. As such, it is a state of mind—a willingness to *listen*—as much as a willingness to talk. Furthermore, it is a willingness to open oneself to the possibility of discovering and joining in the formation of new paradigms, as well as to risk failure (Shibley & Schneekloth, 1988). Based on this understanding, I argue that several conditions facilitate collaboration among design team members, including a shared understanding; a willingness to listen; and an ability to engage in joint decision- making, creative processes, and reflective actions (Schön, 1983).

3.3.2 Collaboration and design communication problems

The nature of human interaction during collaborative design

The ideal form of collaboration, which is characterized by such abstract keywords as

leadership, shared understanding, and *conflict resolution*, has not been fully comprehended by researchers in the field of collaborative design. Nevertheless, several design systems, mostly computer based, that claim to be "collaborative design systems" have emerged. Their credibility as tools for solving basic problems in collaboration is still questionable. The vague term *collaboration* has also led to questioning of whether *computer-supported collaborative design* is the right term to apply to computer systems. Kvan has argued that the term *collaborative* should be changed to *computer-supported cooperative work* (CSCW) to reflect the fact that the purpose of working together is to facilitate more cooperation (Kvan, 2000).

Research has indicated that computer-based collaborative system places too much attention on improving the communication process. Furthermore, researchers in this area have tended to overlook the importance of resolving the underlying social problems in human interaction during the collaborative process. The recommendations that Nancy Cheng proposed after her research into digital design collaboration reflect the belief that communication is the fundamental problem:

> …. Better interfaces for communicating design information and standardized file information and procedures could streamline team interaction. We need to optimize the emerging systems by closely observing and evaluating them in both controlled and open-ended professional situations. For communication tools to be most useful, they must integrate visualization with building performance and provide useful functionality throughout the building life cycle. To work well from pre-design to facilities management, the tools need to be both flexible and robust. They need to facilitate large modifications to early organizational decisions while supporting later development of complex databases. Rather than simulating what is possible in face-to-face interaction, we need to use opportunities to find inherent aspects of the media. (Cheng, 2003)

These recommendations strongly reflect the tendency of CSCW researchers to view the main problem in collaboration as communication, either between agents (computers or any other communication tools) or between agents and participants (Fig. 3.4).

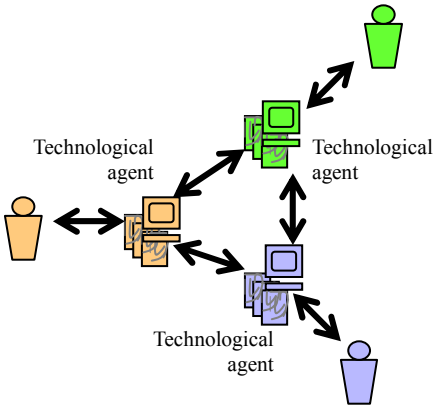


Figure 3.4: Recent CSCW research into collaboration tends to view the primary problem in collaboration as the facilitation of communication

Kalay described the types of computer-mediated systems that have been developed to facilitate collaborative design:

- *Product-sharing methods* use common data-exchange formats to facilitate the transfer of project information among the participating professionals. Communication efforts in this area are focused on the development of sharable product models and databases containing information on the relevant product.
- *Performance evaluation methods* combine specific performance-evaluation parameters (e.g., performance of energy, lighting, and cost) into an overall performance evaluation of the evolving design solution. These methods tend to emphasize the technological aspects in design process and ignore the human aspects of the collaborative process.
- *Process-based methods* emphasize the deliberative aspects of design decision-making processes in terms of design intentions, assumptions, and arguments, whether in favor or against proposed design actions. These systems have helped researchers to understand the deliberative nature of the design process but suffer from the inherent difficulty of encoding design knowledge in computational constructs, such as expert systems and agents.

In general, the methods discussed above are inadequate because they use what can be described as a *localized approach*: they focus on one aspect of the problem while ignoring its other aspects. The two central foci have been *data-oriented methods*, in the form of ever-more sophisticated product models and the means to communicate them among the participating professionals, and *process-oriented methods*, which allow the participants to talk (or argue) about the evolving product with each other (Kalay, 2004).

Kalay has argued that there is a better approach to addressing the limitations of these methods: a *systems approach*. This approach, which addresses both the data and the process of collaboration, more effectively supports creative, collaborative design. The underlying principle guiding the systems approach is *interleaving*: instead of "fighting" the symmetry of ignorance, as do current approaches, it acknowledges its existence and provides the computational means to make the best use of the participants' unique knowledge and capabilities to develop a creative product. The interleaved approach does not try to develop tools that homogenize or control the efforts of the individual participants. Rather, it assumes that each professional will continue to use his or her own preferred method of data representation and manipulation and unique tools, databases, knowledge bases, precedents, and other professional means to interpret and advance the joint product. Rather than supersede or intervene in the work habits of the collaborators, this approach proposes that their individual (but not independent) efforts can be most effectively leveraged in the service of overall product development by allowing each contributor to be informed by, build upon, and inform the work of other professionals (Kalay, 2007).

The design process in the larger context

The current CSCW research focus on the design process has ironical implications for practice. It places little emphasis on the early stage of a design process, usually identified as the planning stage, despite the fact that the roots of many problems that emerge during the design process are identified during this stage. This phenomenon occurs not only within the CSCW subfield but also within the larger architectural design field. Architects often appear are more

interested in applying their creativity to problem solving than in interpreting the problem setting, which is demanded in collaborative work. This phenomenon is a characteristic of professionals with a technical-rational mind set, for whom problem solving is the main focus of their work and who tend to ignore the problem setting (Schön, 1983).

The potential advantages of using the computer-aided planning and design process become more salient when the project is complex in both scale and context, and particularly when it is a public project. One of the most crucial examples is a public project concerning marginalized people. In 1997, Donald Schön and his colleagues at School of Architecture and Planning at Massachusetts Institute of Technology began research into meeting the information technology needs of low-income communities in urban settings. Their work ultimately resulted in the creation of the Planning Support System (PSS; Schön et al., 1999).

Based on his research into critical issues regarding the implementation of information and communication technology (ICT) systems in managing a post-disaster recovery project, Quarantelli has identified ten issues on which practitioners should focus to ensure that ICT implementation will not result in another catastrophe (Quarantelli, 1997):

1. The certainty of computer-system-related disasters.
2. The probability that the rich "will become richer" in dealing with disasters.
3. The possibility that technology will be so overemphasized that what is a "means" will be turned into an "end" in itself.
4. The inevitable emergence of information overload.
5. A likely reduction in learning from errors due to a variety of technology-related reasons.
6. A greater likelihood of the diffusion of inappropriate disaster-relevant information.
7. A further diminution of non-verbal communication.
8. Greater difficulty in intra- and inter-level group communication.
9. The negative consequences of the probable acceleration of fads and fashions associated with computer use.
10. The need for certain kinds of general social infrastructure and cultures for the adequate functioning of any disaster-relevant technology.

Quarantelli's arguments are relevant to several aspects of the planning and design process of several housing reconstruction projects in Aceh. Most public meetings that were organized using a participatory-planning process did not use sophisticated computer-modeling techniques to generate the proposed the new housing models. Local people, the beneficiaries of these new houses, were comfortable with the rough models, built mostly with cardboard, that were presented as tools for communicating the plans (Fig. 3.5). Although computer-generated models were also created, they were intended as means of communicating the planning, design, and construction process to the agencies involved in the project, who were thus the main beneficiaries of the use of a computer-aided system in accelerating the collaborative process.[44]

Figure 3.5: A rough wooden model representing a new housing reconstruction project in Aceh presented at a public meeting (source: BRR, 2010)

3.3.3 Techniques: Process design

A fundamental aspect in ensuring completion of a planning and design process is the availability of a system for guidance and assessment. In collaborative planning, this method is recognizable primarily as *process design*. The main goal of this step is to create a process map (Straus 2002) that shows how a process that consists of a number of subprojects managed by different agencies will enable coordination of tasks within a system. If applicable in architectural collaborative design, process design presents an opportunity to integrate the entire planning, design, and construction process.

Within the scope of a large-scale project, such as reconstruction of Aceh, implementing process design in a particular project does not automatically guarantee the improvement of project performance. All projects under the umbrella of the Aceh Rehabilitation and Reconstruction Program were interdependent. As such, many problems emerged during program implementation because participants in different organizations working on different projects in the same area failed to coordinate their work. The most common problem was completion of a house's structure but not its utility system, primarily because of the unavailability of infrastructure, which, in the worst cases, had not been planned due to a lack of water and sanitation contractors. If the process design could have been standardized as a coordination system among projects in a reconstruction process, these problems could have been reduced significantly.

Previous sections investigated the possibility of developing an integrated design representation system that could be utilized to facilitate observation during collaborative processes in the architectural design stage (Fig. 3.6). This system was built upon previous research into design process representation systems (Hamid et al., 2006) and methods of visualizing collaboration through mapping the process developed by Strauss (2002). The proposed representation system is an analysis tool that may help identify the nature of interaction among participants in collaboration.

Figure 3.6 illustrates how this representation system would work. The graph represents the flow of the design process in a top-down direction. Each node, either a circle or square, represents a step in the design activity and its corresponding product. Use of this tool allows for investigation of the progress of design from its very early stage and the evaluation of problems, ideas, concepts, and solutions in a collaborative process. At the same time, it allows for tracking

of participant contributions in a collaborative process and identification of who contributes what, how consensus is reached, and which participant dominantly influences a meeting.

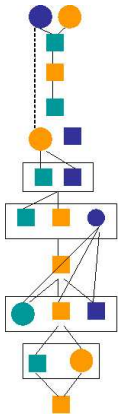


Figure 3.6: Design process representation system

Using this system also allows for identification of important aspects of the social-organizational nature of participants' interaction in a collaborative design-process setting, including:

1. Whether the roles of the participants have shifted significantly from traditional disciplinary roles (e.g., architect, structural engineer) toward managerial roles (e.g., team leader).
2. Whether mutual reinforcement has played a significant role in accelerating the design process.
3. Whether reinforcement of an idea or concept was enabled and encouraged by symbolic interaction among the actors, which is influenced by of the extent of the differences in the participants' backgrounds (e.g., education, culture.).

This representation system also enables investigation of the social-psychological nature of the participants in collaborative design (Fig. 3.7). As indicated by Michener et al., the four primary concerns of social psychology exploring human behavior within a social context are (1) the impact that one individual has on another, (2) the impact that a group has on its individual members, (3) the impact that individual members have on the groups to which they belong, and (4) the impact that one group has on another group (Michener et al., 2003). These concerns are relevant to the common social problems that arise among participants in collaborative design.

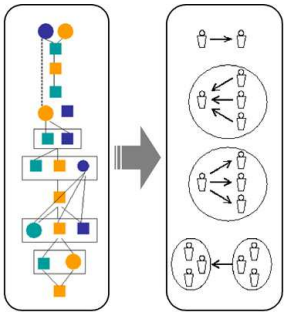


Figure 3.7: Representation system to investigate the social-psychological nature of participants in collaborative design

3.3.4 Towards collaborative design

Architectural design is a process involving many practitioners and laypeople with their own social backgrounds and vision for a project. The complex nature of creative collaboration thus requires not only a comprehensive approach but also an understanding of its social nature. Understanding the social construction of collaboration is one of the keys to understanding the collaborative design process as a whole. Fig. 3.8 shows the resulting framework when understanding of the social construction of collaboration is lacking. Social interaction should be represented as a dynamic process among individuals that reflects the ideals of collaboration, such as the existence of leadership, shared understanding, and conflict resolution. As such, problems in collaborative design should be viewed as resulting from intense dialogue among individuals in a social-organizational setting. In current approaches, these dynamics are reduced to fit the technical limitations of the ICTs that are generated to facilitate collaboration.

The ideal model is a collaborative design system that facilitates socially constructed interaction among participants, as well as the communication of information. The proposed system should enable participants to assess the typical problems of collaboration; be built upon communicative rationality, which is rooted in the interaction of social life, rather than mere technical rationality; and promote communicative action oriented toward inter-subjective understanding, the coordination of actions through discussion, and the socialization of members of the community (Dryzek, 1990).

If, as Schön argued, "Professionals are best seen as participants in a larger societal conversation" (Schön, 1983), the problem to be solved and the policy to be adopted should be constructed through the larger conversational context—the media, various institutions, and public debate—to enable realization that the descriptions of the reality are themselves socially constructed (Sandercock, 2003). The notion of a societal conversation has emerged in planning practice through the idea of planning as, above all, an interactive communicative action (Forester, 1999). This idea, which is derived from the model of technical rationality and systematic analysis, promotes a more qualitative and interpretive mode of inquiry based on the understanding that what to be understood are the unique and the contextual rather than the general rules for practice (Sandercock, 2003).

How does this approach apply to architectural design practice? Reflection in action that influences the idea of communicative planning is inspired by reflectively designing action in an architectural design setting (Schön, 1983). However, architectural design practice concerns not only recognizing the organizational or technological variables that affect design process but also understanding the local knowledge and synthesizing these variables during the process. It is thus knowledge of practice borne out of necessity and based on grassroots experience (Bankoff, Frerks, & Hilhorst, 2004) or, in other words, the understanding of understanding (Geertz, 1983). To be able to gain this understanding, the architect must be able to listen and interpret the facts deliberately as a deliberative practitioner (Forester, 1999). Luck thus summarized the process of architectural design collaboration as that of deeply investigating the social process that embraces intensive dialogue to reveal explicit and, more importantly, tacit knowledge that could lead to the development of more efficient design guides and codes (Luck, 2003).

Chapter 4
Exploring Reconstructed Banda Aceh

4.1 Research method

I experienced some difficulty in selecting the best method to employ in my dissertation research. I initially believed that application of the ethnographic method would be the best means of investigating social interaction among the individuals in a group during a construction process in order to understand how collaboration is realized. The primary problem that I faced was that I was studying collaboration in the context of a situation that no longer existed; most of the housing reconstruction projects in Banda Aceh had already been completed, or were at least at the finishing stage, when I began my research. I therefore could not directly witness events and observe social interaction among participants, such as that which occurs during any kind of meeting, both of which would have helped me gain understanding of the role of collaboration in the project.

With such limited access to sources of information, I decided to employ an in-depth case study approach informed by a mix of other qualitative methods. The units of analysis for my study were the planning, design, and construction processes of selected projects and the organizations directly and indirectly involved with the processes. I did not study individuals, although they were units of observation that provided me with information regarding the progress of the reconstruction process and the organizations that they represented. I thus investigated completed processes through the context of an individual's memories of those events, accessing those memories by conducting a series in-depth interview with participants directly involved with the reconstruction process. The information that I collected from each informant served as verification of the information that I had previously collected from other informants. As representation of each stakeholder and project group was a significant concern, I required that each group, including beneficiaries or local people, implementing agencies, planning or design consultants, contractors, and local government, be represented by at least two informants. By such means, I practiced triangulation, a technique quite common in ethnographic research.

Another great challenge in applying a research method was selecting several projects as case studies from among hundreds of housing reconstruction projects in Aceh. My goal was that the selected projects should represent the wide range of project characteristics found in a typical post-disaster reconstruction project. As my research focused on the collaboration among the participants in a project and their social interaction, I defined the type of participant as the basis of a project characteristic. Accordingly, I distinguished among participants according to their typical role in a building construction process: owner/user, planner and contractor, and external parties, such as agency or government representative. Each participant or stakeholder had several roles; for example, a project owner was also a representative of a sponsor or main funder, whether private or public or whether local, national, or international. The same condition applied to planning, architectural, and engineering consultants, as well as contractors. I ultimately decided to select five case studies, the minimum number that would allow me to complete my research while representing the wide range of perspectives in project coordination.

4.2 Research strategy

As part of my research strategy, I structured my field research into two interconnected stages. In the first stage, I examined several reconstruction projects through conducting document analysis and interviewing various stakeholders representing the typical groups involved in a housing reconstruction project. In the second stage, I used an in-depth case study approach to conduct field observation and interviews.

First stage: Preliminary study of reconstruction projects in Banda Aceh (July 2007–October 2008)

I began my research by studying several completed projects via document analysis, followed by interviews with the project participants. My document analysis focused on newspapers, news magazines, and various reports on the reconstruction project published by agencies involved with the projects. The objective of this analysis was to comprehend the overall housing reconstruction process in Banda Aceh. From this investigation, I was able to identify potential projects, whether because they had been successful or problematical, as the objects of in-depth observation for the second stage of my research. I took this step because it was difficult to make a selection based merely on documents analysis. In my field research, I had not found any assessment of these various documents that directly identified some projects as more successful than others.

Conducting in-depth interviews at this stage was helpful in selecting projects for case studies. The information that I collected allowed me to consider the views of individuals from each group of participants who I considered capable of assessing the completed reconstruction projects. Much information at this stage was provided by the BRR, the governmental institution responsible for coordinating the rehabilitation and reconstruction process for Aceh and Nias. In addition to information provided by BRR staff at all managerial levels, public information available from the agency's online information system was extremely helpful, as the website was updated regularly and provided detailed information on each project in progress under BRR coordination.[45]

Field observation at this stage was helpful in supporting my assessment of the quality of the final products, in this case housing units. My assessment was further supported by my follow-up interviews with the housing beneficiaries or inhabitants. I had three main objectives in my field observation; first, to investigate how the local people as the users measured the project as successful or problematical; second, to identify the overall characteristics of collaboration in the reconstruction process; and third, to explore the relationship between a successful/problematical project and the existence of collaboration. My interpretive study was conducted by two means: in-depth interviewing of every stakeholder or his or her representative about the reconstruction process and brief observation of how people live in their new housing units and built environment. The results of this observation helped me conceptualize collaboration in a post-disaster reconstruction process and, during the second stage of the research, analyze the findings of my selected case studies.

Second stage: In-depth study of selected projects (October 2008–December 2009)

The second stage of my research required much more time to complete than had the first stage of research. My in-depth study of the five selected cases required one year and two intensive site visits. As in the first stage, my in-depth study of the selected projects was comprised of field observation and interviews. My research began with the identification of

potential beneficiaries and ended with determination of the nature of the occupancy of the finished buildings. Between these phases, it also included further detailed analysis of media articles and other documents for each project; site visits; and review of minutes of meetings and public sessions held during the planning, design, and construction process of each project, as well as other documents prepared by the different local/regional agents.

4.3 Method of analysis

Interpretive study

A design process with a focus on social interaction among the participants during the process was the unit of analysis of my research. The embedded units of analysis were the following:

- Design process in action: interaction among individuals/groups
- Project participants: people/individuals (the group)
- Products
- Context (place and time)

Table 4.1 summarizes the information that I gathered from the five case studies.

I used an interpretive method, as it was the most appropriate method for conducting my observation and addressing my research question. My analysis was based on four types of theories. *Theories of the collaborative planning and design process* served as the main foundation, helping me dissect the reconstruction process of each case. I conducted further examination to obtain information related to issues regarding collaboration, with my analysis based on *theories of organization*, specifically organizational behavior on group processes. For a more contextual investigation of each case, I required basic knowledge of housing in a post-disaster recovery context. For this purpose, I utilized not only *theories of housing in developing countries* but also specific *theories of housing in a disaster context* that have been long employed by sociologists.

The analysis tool that used to investigate the design process of each case study was based on the design representation system described in the previous chapter. I mapped all qualitative observations of the design process of each project onto the design process map, which helped me identify the character of collaborative design and how social organizational and local cultural factors impact the process. This analysis method was supported by comparative study primarily consisting of a literature review of the design processes that had been implemented in cases of similar scale facing similar situations and with similar organizational characteristics. I anticipated that my analysis would reveal the nature of the collaborative design process in this specific case, allowing me to formulate recommendations for a typical resettlement project.

Table 4.1: Information gathered during field research of case studies

Products	Design Process in Action	Project Participants	Context
Proposal	Case identification (identifying beneficiaries) Generating/submitting proposal to potential sponsors	Implementing partner (NGOs), local government	Implementing Partner (IP)'s office, potential project site
Project plan drafts, meeting minutes, etc.	Analysis of project proposal; feasibility; etc	Sponsor	Sponsor's office
Project plan: budget; implementing partner; etc.	Determining project plan; budget; implementing partner, etc	Sponsor; Implementing partner	Sponsor's office, IP's office
	Determining planning/design consultant	Planning/Design consultant; Sponsor; Implementing partner; housing inhabitants; gov't/local inst.	Sponsor's office, IP's office
Survey data, documents, meeting minutes	Collecting data Identifying beneficiaries land surveying	Planning/Design consultant; Sponsor; Implementing partner; housing inhabitants; gov't/local inst.	Project site, IP's office
Project program: facility program; map, etc	Generating project program, facility programming	Planning/Design consultant; Sponsor; Implementing partner; housing inhabitants; gov't/local inst.	Project site, IP's office, Consultant's office
Schematic design	Schematic design		Project site, IP's office, Consultant's office
Detailed design	Design development		Project site, IP's office, Consultant's office
Construction documents development	Detailed design and producing construction document	Planning/Design consultant; Sponsor; Implementing partner; housing inhabitants; contractors	Project site, IP's office, Consultant's office
	Bidding		Sponsor's office, IP's office
Building in construction process	Construction process	Planning/Design consultant; Sponsor; Implementing partner; housing inhabitants; contractors	Project site
Completed building and facilities	Building(s) occupancy		Project site

Chapter 5
Social Challenges in Aceh

5.1 Civil conflict

We then just asked why the wave didn't take everything out… Yes, everything…including ourselves. We were so desperate living in what people recognized then as black lane area. The state army unofficially identified our village as GAM guerillas basis. If we go uphill which was a more livable area than here in the village the army would assume we were asking protection from GAM. If that's really the case it means we put ourselves in danger of being attacked from the army at any time. We could not also fix our rice fields. No means or tools were available at the moment.…[46]

Difficult situations are part of not only a tsunami survivor's everyday life but also that of representatives of any humanitarian organization involved in aid distribution. Both the Indonesian Army (TNI) and the GAM interfered with aid distribution for the same reason: Both suspected that without their intervention, all aid would go to their opponent. On many occasions, their interference hindered rather than facilitated distribution.

This chapter examines post-disaster tsunami rehabilitation and reconstruction in Aceh as the problem context of the case studies investigated. This examination is based on the premise that the problem cannot be fully understood without considering the entire historical, social, political, and cultural context of Aceh. As such, it is based on the understanding that most failures can be traced to a lack of local knowledge among project stakeholders, most of whom came from outside Aceh, as well as differences among them due to their complex, heterogeneous backgrounds.

5.1.1 The GAM and pre-tsunami events

The Province of Aceh is well-known to most Indonesian people as the Veranda of Mecca due to the strong influence of Islamic tradition on its culture. For more than 50 years, this region has experienced much tension because of the civil conflict between the Gerakan Aceh Merdeka (GAM) or the Free Aceh Movement and the Government of Indonesia or, in local terms, the central government. For the past few decades, this conflict has periodically burst into local bloody conflict and civil wars that have taken the lives of more than 12,000 people, most of whom were civilians unaffiliated with either the GAM or the TNI.

The civil conflict can be traced back as far as the era of Dutch colonialism in the nineteenth century. Aceh is considered the only region of what is now Indonesia over which the Dutch could never completely gain control, leading to never-ending war that morphed into local conflict after Indonesia declared independence in 1945. Even though political issues appeared the dominant factors on the surface, conflict over the abundant natural resources in Aceh was truly the source of conflict. The post-independence government of Indonesia failed to win the hearts of the Acehnese because its policy of centralization did not allow the Acehnese people to derive significant benefit from what was taken from their land, even decades after independence.[47]

The spirit of struggle in the face of an unjust situation has propelled continued conflict in Aceh, particularly at the grassroots level. In the 1950s, Daud Beureueh, a charismatic local leader who was a veteran of revolutionary war against Dutch colonialism, led the first civil war.

Even though the TNI finally captured him and then apprehended him for several years, Acehnese guerillas continued fighting, becoming more organized and forming the embryo of the GAM. The conflict between the GAM and the central government has experienced periods of relative calm but has never ceased. The greatest number of civilian casualties was witnessed between the late 1980s and the late 1990s, the period of peak oil and gas exploration in Aceh, in which most of the benefits derived thereof was given to local elites in Jakarta, with little left to the local people.

This unjust situation perpetuated the GAM's guerilla war for the freedom of Aceh. Soeharto, the second president of Indonesia who became prominent as the dictator of the New Order regime, took harsh measures through the TNI to counter the GAM. The civil war did not cease until Soeharto's topple from power in 1998 and the subsequent establishment of a peace process. Nevertheless, the peace process proceeded slowly during the first three post-Soeharto presidential administrations until the tsunami disaster, which occurred at the beginning of the fourth presidential term.[48]

5.1.2 The KPA and post-tsunami events

It has been widely acknowledged that the tsunami disaster ultimately accelerated the peace process in Aceh, which reached its culmination at the signing of a peace agreement between the GAM and the Indonesian government in Helsinki, Finland on August 15, 2005. This event, which occurred right at the beginning of the reconstruction process after the tsunami disaster, has had critical consequences for both civilians and former GAM combatants.

Local people who had faced the trauma of conflict were later confused with the tsunami survivors, making the identification of beneficiaries of recovery aid for the true tsunami survivors more complex. According to the UN Guiding Principles on Internally Displaced People (IDP), these two groups of local people should be treated the same, regardless of the event that made them victims or survivors (Human Rights Center, 2005). Emergency relief proceeded for several months while the peace agreement remained at the negotiation stage with no agency in charge of coordinating emergency work, although hundreds of NGOs had already arrived to distribute aid. The BRR was ultimately established as the government agency responsible for this task on April 15, 2005, almost four months after the tsunami. During this early emergency period, the TNI assumed authority to supervise aid distribution. The TNI was selective in supervising aid distribution, suspecting that aid would go to GAM combatants, leading conflict to arise in areas where GAM combatants had previously made frequent contact with local civilians. On many occasions, the TNI captured GAM combatants who were interacting with tsunami survivors and imposing consequences on all the IDPs who had let the combatants enter an emergency shelter by ceasing any aid distribution to the shelter.[49] Moreover, the TNI occasionally abused its authority, sending aid to its own storage units and later selling it. Even though this fraud was perpetuated as an undercover operation without the knowledge of the official staff in command, it damaged the TNI's reputation as the first humanitarian army coming to the rescue (Human Rights Center, 2005).

The Government of Indonesia later established the Aceh Reintegration Agency (BRA) to address any issues related to resettlement of the IDPs involved in the Aceh conflict. The GAM itself was officially dismantled and, to accommodate all the interests of former GAM members, a new institution named the Aceh Transition Committee (KPA) was formed. However, the operations of the BRR, BRA, and KPA did not proceed as smoothly as planned for each group.[50] With the peace agreement coming into effect, former GAM combatants or KPA members had no

purpose after receiving amnesty from the government. This led them to become involved with the reconstruction project at every level, with their involvement usually correlating with their level of command within the former GAM structure. In fact, the current Governor of Aceh province was once a member of the GAM elite who had, despite expectations, been elected by the people of Aceh in the first direct gubernatorial election in Indonesian political history, a surprising result indeed.[51]

Their new status as KPA members placed the former GAM elite into new institutions that enabled them to form partnerships with any governmental agency to maintain the post-peace agreement atmosphere. In other words, KPA members could freely penetrate any government-funded project, including reconstruction projects under BRR management. In the BRR management structure itself were several positions that were unofficially allocated to the KPA, despite that fact that few former GAM combatants were sufficiently educated or competent to hold any high-level managerial positions in the BRR.[52] The situation was similar in the reconstruction project field, in which aid distribution and reconstruction project work was frequently interrupted by KPA members. Witnessing the lavish lifestyle of the former GAM elite, these former GAM field soldiers, most without any managerial skills, took their own portion of resources allocated to large reconstruction projects. While the local civilians had been their targets of terror during the conflict, the agencies that managed the projects became their targets during the reconstruction period. These KPA members introduced what they called a *security fee*, basically an unofficial fee to be paid to them so that a project could proceed without interference from the KPA itself. The BRR was aware of this situation but faced limitations in taking action, including the need to address strategic issues that had priority over these more technical operational problems. The BRR believed that these technical problems were the responsibility of the concerned agencies and, eventually, the agencies took action so that project operations could proceed.[53]

5.1.3 Sharia law

Many Indonesians had believed that one of the GAM's goals in Aceh was to fight for the implementation of Sharia law. The peace agreement between the GAM and central government had allowed for the application of special laws in Aceh, including the application of Sharia law to all Muslims in Aceh. The GAM leaders had emphasized that their fight was primarily for justice in Aceh rather than for religious reasons, and that the aim to put Sharia law into practice was not the aspiration of the majority of Acehnese people but a few conservative Islamic clerics.[54] Sharia law was interpreted narrowly so that the enforcement of its practice was limited to artificial aspects of Islamic matters, such as the dress code and the forbiddance of drinking alcohol and gambling, rather than pursuance of more essential issues, such as injustice and corruption, that were the roots of the problems in Aceh. At many religious events right after the tsunami, several traditional Islamic scholars expressed their interpretation of the tsunami as a punishment from God because the Muslim community in Aceh, believed to be the most religious community, had long abandoned Islamic values. With this argument, these scholars attempted to place Islamic law as the foundation of the Master Plan of Aceh Reconstruction.[55]

With such a controversial background, it is little wonder that many people considered the enforcement of Sharia law during the rebuilding process to be a setback. The Sharia Police, a special force established only in Aceh, often strictly enforced the law publicly. During the reconstruction process, this situation created difficulty among many international humanitarian workers unfamiliar with Sharia custom and culture.[56]

5.2 The stakeholders/participants

Many agencies involved in recovery projects frequently used the term *humanitarian work* to refer to what they had done or were doing as part of the Aceh post-tsunami reconstruction effort. The usage of this term particularly attracted my interest in relation to its contribution to understanding the reconstruction project as part of a collaborative process. As explained in chapter three, individual interests play a key role in collaboration. If the participants in a project are committed to collaboration, they should be willing to negotiate their own interests. Therefore, in the context of a reconstruction project, examining whether these participants considered human rights issues their real interests when performing their work would be valuable.

This chapter presents the findings of this investigation into the participants or stakeholders in the Aceh housing reconstruction projects: the BRR, implementing agencies (NGOs), local government, contractors, consultants, and beneficiaries. To distinguish among these groups, I relied on the popular opinion of the participants in the reconstruction effort. Hence, my categorization may not follow the standard categorization of the participants in a building project. Nevertheless, I argue that the popular opinion of project stakeholders best reflects the reality of day-to-day operations in any project.

5.2.1 The BRR: A story of coordination

The Badan Rehabilitasi dan Rekonstrusi Aceh dan Nias (BRR) or the Agency of Rehabilitation and Reconstruction for Aceh and Nias was the government agency responsible for the coordination and implementation of the overall rehabilitation and reconstruction plan for Aceh and Nias. The agency was established on April 15, 2005 as part of the mandate of the Master Plan of Aceh and Nias Reconstruction and Rehabilitation, which had previously been published by the National Agency of Planning and Development, a ministerial-level governmental body, as a nation-wide development program. One article of the Master Plan stated that the establishment of an agency to coordinate Aceh and Nias recovery was the first priority of reconstruction.[57] Although the BRR was comprised of an Advisory Board, a Supervisory Board, and an Executing Agency (Fig. 5.1; BRR, 2006), the Executing Agency came to represent the BRR, with the other two bodies existing as more of an effort to present an image of an ideal governmental body than as a real attempt to practice the principles of good governance (Fasya, 2007).

The problematic image of the BRR has its roots in the ambiguous role of the Executing Agency. Many have questioned how the BRR could have the authority to coordinate the entire reconstruction project while simultaneously managing its own projects. In practice, its credibility as the coordinating agency was damaged by the poor quality of many of the houses built under its management, with some assessments of houses built by the BRR receiving the lowest ratings among the houses built by all agencies. Non-occupancy of new houses built by the BRR for various reasons, mostly related to poor quality, became a common story. Many houses had deteriorated even before the beneficiaries began to occupy them, and several had no access to utilities. In the most extreme cases, houses were built without any clear identification of their beneficiaries (Fig. 5.2).

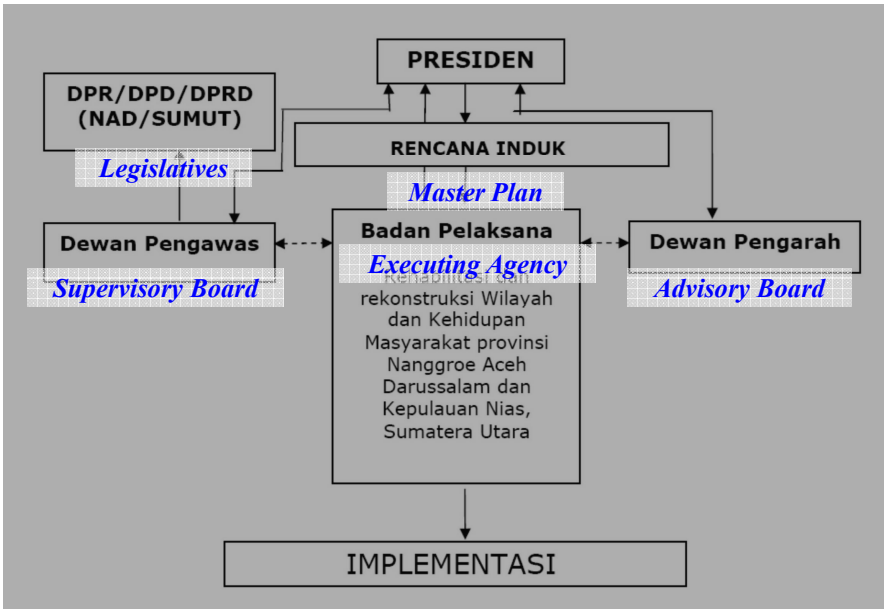


Figure 5.1: BRR organizational structure: Implementation Agency, Supervisory Board, and Advisory Board (source: Kompas, 2005)

Figure 5.2: A house built by BRR that deteriorated before occupancy

The many reasons behind the problems with housing projects under BRR management reflected a lack of strong commitment to do the best rather than merely failure due to the extremity of the situation, as is common in a post-disaster context. The most common response of the BRR to failure was to blame the contractors. Indeed, in many cases poor housing construction could be traced to the employment of unqualified contractors who built low-quality houses using materials that did not meet the required specifications. Ironically, several investigations found that the budgets for these low-quality houses surpassed normal estimations. Such common problems in building construction could have been avoided if supervision had

been under solid management, particularly as much funding had been allocated for this sector. Examining this situation, it becomes easier to understand why frustrated beneficiaries expressed their anger in controversial ways, such as threatening to tear down newly built houses if they were found uninhabitable.[58]

The Alue Naga case

The housing projects undertaken by the BRR in Alue Naga Village, Banda Aceh reflect the typical problems that arose in the projects managed by this agency. Alue Naga, one of several villages in Banda Aceh located directly on the coastline, was one of the first hit by tsunami waves. As such, it experienced a level of destruction among the highest, with 100% of its physical structures destroyed (Fig. 5.3). Reconstruction of housing in the village proceeded through a much longer and complex process than that of other villages in Banda Aceh, primarily due to problems with the identification of beneficiaries, the first stage in the reconstruction process. Among the approximately four hundred households in Alue Naga before the tsunami, the BRR could identify only 140. The BRR committed to building 65 houses and the Catholic Relief Service (CRS), another NGO, to building the remainder. The construction of the 75 houses managed by the CRS were completed, as promised, by mid-2007, while the construction of the 65 managed by the BRR was delayed without any explanation of the reason or announcement of when they would be ultimately completed. When the uncertainly continued until the end of 2007 without any clarification, the prospective beneficiaries protested, demanding that the BRR give a concrete answer. Heated debate between the two sides ultimately led to several physical altercations. BRR representatives later explained that the delay had occurred because the contractor had fled. The CRS then came to the rescue by committing to the completion of all the uncompleted houses.[59]

Figure 5.3: Alue Naga village was literally flattened when all physical structures, plants, and trees were swept away by tsunami waves. Photo taken March 2005, three months after the event (courtesy Rizal Djuned)

After the first phase of the housing project had ended, more and more Alue Naga residents who had been living outside the village began to move back to the village. These residents had never been identified as beneficiaries of the new houses. The BRR began to identify beneficiaries as it had previously done during the second phase of the project. During this phase, the BRR shared responsibility for constructing the remaining 250 houses, which were targeted for completion by the end of 2008, with two international NGOs, the Australian Red Cross and Caritas Germany. However, the same problems emerged that had emerged during the first phase. Again, while the houses managed by the NGOs were completed on time, those managed by the BRR were left unfinished by the contractors. Several of these contractors argued that the cost of the building materials had risen above budget and that they had been forced to pay illegal fees imposed by the local people. Ultimately, the BRR took the initiative by giving the beneficiaries cash in the amount of half of a house's construction cost so that they could complete the construction of their houses. Even though this resolved many problems, many beneficiaries let their houses remain unfinished, instead using the cash for purposes other than completing their house.[60]

Low-quality housing, poor beneficiary identification methods, corrupt contractors, weak supervision, a slow reconstruction process, and many other issues that arose in the Alue Naga project reflected the problems that arose in many other housing projects managed directly by the BRR. It must be understood that the BRR was charged with an extraordinary and unprecedented task and faced problems in the housing sector that were inherent issues of the local housing situation itself. Most of the housing projects managed by the BRR had been transferred to it from other agencies because of difficulties, such as unclear beneficiary identification or the remoteness of the location. Nevertheless, the BRR failed to demonstrate commitment, consistency, and leadership as a coordinating organization that should have served as an ideal model.

In some cases, the BRR even denied its o responsibility for construction problems. In April 2007, several new houses built by an NGO in Deah Raya village had been found to contain asbestos in some of their components. According to an independent research report, the level of asbestos exceeded a safe limit, requiring immediate attention. Although the BRR announced that it would rehabilitate the houses to meet safety standards, six months passed with no sign of follow-up action on the commitment. After several deadlocked meetings with the BRR, in December 2007 the beneficiaries channeled their frustration by tearing down the asbestos-ridden houses (Fig. 5.4).[61]

Figure 5.4: Asbestos-ridden houses torn down by their beneficiaries in Deah Raya village (courtesy of Komite Percepatan Pembangunan Perumahan dan Permukiman Desa)

Inefficiency

Many have argued that the ambiguous role of the BRR as both the coordinating and the implementing agency of the reconstruction process was the root of the problems experienced during the Aceh recovery process. The inevitability that problems would arise from the existence of these dual roles has been acknowledged by some experts.[62] While the construction of 120,000 new houses was required, local and international agencies could commit to constructing only 70%, leaving the remainder to the BRR. In most situations, these "left-over" projects were plagued with problems that made other agencies reluctant to complete them.[63]

On the other hand, the BRR's performance as a coordinating agency was far from expectations. The BRR was trapped by its ambitious goal to complete the entire recovery project, particularly in the housing sector, within its limited operational term of only four years. This ambition had led the agency to measure progress on a purely quantitative level, with little or no quality control of any project that had been completed. Despite the use of a quantitative approach, the agency conducted poor inventory management of project accomplishment, leading information on the progress of the entire reconstruction project to be unreliable. In some cases, the data reported completion of houses that did not exist in the field, while in extreme cases data were fabricated.[64]

What particularly angered people was the irony that the BRR was performing so poorly when its staff had been granted exclusive facilities. During the peak of the reconstruction process between 2006 and 2008, several independent agencies took the initiative to monitor how the BRR was performing its tasks and how it received compensation in return. Many of the surprising findings of these investigations, which revealed great inefficiency and the use of funding that should have been disbursed to survivors to cover operational costs, were then exposed to the public. During the recovery process, becoming a BRR employee was the goal of many, as BRR employees enjoyed a high salary and many benefits.[65] Employee salaries and benefits comprised 70% of the budget in terms of operational costs, leaving only 30% for aid provision. Controversial news regarding the BRR continued to be revealed until the BRR officially ceased operations in April 2009.[66]

Chaotic management of the recovery programs under BRR coordination could be understood if *how* the organization had been operated could be identified. None of the staff had clear job descriptions, particularly the lower-level technical and administrative staff, leading to inefficiency and poor performance.[67] Ironically, several assessments of BRR performance reported good or even excellent performance, particularly in the financial accountability sector. To BRR leaders, these reports supported their justification for granting extraordinary remuneration to their staff. Kuntoro Mangkusubroto, Head of BRR Executing Agency, continuously stated that the agency took an extreme policy on remuneration as a preventive step.[68] It was assumed that much funding was allocated to staff compensation as a means of preventing corruption. If corruption is defined simply in terms of financial abuse, then no significant corruption, except for several minor cases, occurred. The people's complaints truly concerned the inefficiency of the BRR's work performance when its contributions to the relief of tsunami survivors was compared with what the agency's employees received in return for their dedication. While BRR staff received many benefits from state funding, many survivors were still living in temporary barracks two years after the tsunami.[69]

Contrary to its negative image among local people, the BRR appeared positively to people outside Aceh, particularly the international community. Many major humanitarian agencies cited the recovery program coordinated by the BRR as an ideal model of how a large

scale post-disaster reconstruction project should be managed.[70] I attribute this contradiction in the BRR's image to its intelligent strategy in shaping its public image, particularly among international parties not directly connected with the projects. One must acknowledge that the BRR information system effectively supported its public relations efforts; information regarding the recovery progress down to the level of a specific project unit remained publicly available. In addition to practicing transparency, the BRR attempted to minimize any indication of corruption in its dual roles as an executing agency and a coordinating agency.[71] Despite its attempts to address various issues, particularly regarding inefficiency, the agency often appeared incompetent and out of touch.[72]

5.2.2 The NGOs

Implementing agencies

Before the tsunami, many NGOs had aimed to assume a significant role in monitoring the civil conflict in Aceh Province. However, they were often prevented from doing so by the Indonesian government, which prevented their access to Aceh and controlled distribution of sensitive news on the conflict, especially that related to human rights issues. After the tsunami, the government loosened restrictions, resulting in a wave of international agencies entering Aceh. The provision of facilities and distribution of aid by representatives of these agencies became a common sight in Banda Aceh and other areas struck by the disaster. Cars, trucks, temporary shelters for offices, or rented houses were some of the facilities that could be easily identified by local people through the agencies' logos or symbols. The local people usually identified these agencies as NGOs regardless of whether they were truly NGOs, even those attached to a particular government, such as USAID (a US agency), GTZ (a German agency), or the World Bank (a multi-governmental agency). To reflect the perception in the field and to describe the situation as would the local people, I use the term *NGO* to refer to any agency, especially an international agency, in this section.

Apart from people's perception of an NGO, many complex issues must be understood in order to appreciate the entire work of an NGO in relation to its mission. As Lewis has emphasized, there is a high level of diversity among development NGOs and enormous complexity involved in the various tasks undertaken in the name of "development." NGO management can be viewed in composite terms as the flexible deployment of relevant combinations of theory and practice from the wider "third sector," the for-profit business world, and the public sector. In terms of practice, the management of development NGOs, perhaps more than other kinds of organization, can be best understood as an improvised performance that continually draws upon ideas and techniques from other fields as part of an ever-changing, ambiguous, and hybrid whole (Lewis, 2003).

Applying Lewis' conception of NGO performance to Aceh may allow one to address criticism of the NGOs that operated in this area, particularly their unclear priorities and motives. Local people suspected an ulterior motive behind the distribution of abundant aid, specifically a need for the agencies to present a positive image to donors. Consequently, quantity, particularly in housing construction, assumed priority over quality. This approach had a tremendous impact on the local society, economy, and culture. The CFW program, one of the controversial examples, was intended to accelerate the reconstruction process while helping local people. Despite the good intentions of the agency to help local people, this approach destroyed the culture of collaboration that had already been part of everyday life. People became willing to work, even for the sake of their own neighborhood, only if they received cash compensation. In

spite of severe criticism by the stakeholders of reconstruction projects, several agencies recognized the CFW program as a success.[73]

The target number of new houses to be built every term had to be changed several times because many projects were not able to meet deadlines, primarily because NGOs broke their commitment to building new houses. Among the many reasons that they gave were the emergence of unanticipated situations at project sites, such as the charging of illegal security fees by KPA members. Data regarding the number of houses built by some NGOs were fabricated, with houses reported to the BRR as having been completed later found by an independent NGO monitoring the reconstruction process not to exist.[74] These phenomena should no longer be surprising with continuing revelations of similar practices during so-called humanitarian work, with agencies managing aid was would a for-profit business. The aid agencies see beneficiaries as no more than targets of their business; their donors as the capital; and their operational costs, including salary, as profit (Hancock, 1989; Lewis, 2003; Klein, 2007). The presence of these NGOs throughout Banda Aceh and other affected areas thus had a tremendous impact on the local economy, society, and culture, a clear indication of which was Banda Aceh's status as the city with the highest inflation rate in Indonesia during the recovery period.[75]

The most extreme impact was on property values, including the extraordinary increase in rent. Several luxurious houses in strategic locations in Banda Aceh were rented for an amount almost equal to their actual market value just before the tsunami (Fig. 5.5). It is unclear how and when property owners began taking advantage of the opportunity to rent their properties at such high rates to international agencies, which, appearing to have no choice, paid what was asked. Paying such rates appeared not to be a problem for these agencies, as indicated by their willingness to rent expensive houses as offices. At the same time, embezzlement of disaster funding was discovered.[76] The NGOs simply accepted the inevitability of corruption, with one UN officer responding to an indication of an NGO's poor performance by stating, "Another project, another new flashy car."[77] (Fig. 5.6)

Figure 5.5: A house rented by a UN agency at a rate several times higher than the market price

Figure 5.6: Fancy and flashy cars of NGO representatives in Banda Aceh traffic, a common sight during the recovery process (photos taken at several locations on different dates in 2007)

The excessive lifestyle of many NGO employees compared with the miserable living conditions of the survivors generated severe criticism among local people. Criticism was particularly rife among those involved in governmental programs, who had experienced much difficulty mobilizing local people to execute several governmental tasks aimed at accelerating the recovery program. Local people, especially those with high-levels skills and education, were more interested in working for international NGOs that paid salaries and benefits that they would never be paid in a normal situation.[78]

Nonetheless, international NGOs experienced difficulty filling positions with employees who had the required skills. Working in disaster recovery projects usually requires particular skills or experience in addition to the typical skills required for a position, which most people from local or surrounding regions did not have. The participatory or community-based planning process, a complex and time-consuming effort, was conducted simply to fulfill the BRR and UN requirement that BRR reconstruction projects use a bottom-up approach. The result of this process was simply the production of a fancy report for NGO donors and other stakeholders; whether the essential goal of people participation in the project had been achieved was not a crucial issue. Several investigations of project sites indicated that project beneficiaries often felt confused, indicating that an approach that was supposed to increase their sense of belonging to the project had in fact created distance between the people and the project.[79]

Lack of skill and capability were found not only among local staff, with many foreign staff found to be even more incompetent. A common practice of several international NGOs was placing salary stratification between local and foreign staff as the first priority, followed by expertise, work experience, and other factors. Local staff soon observed that although foreign staff performed objectively worse, they received better remuneration because of a policy that could be described as racist. The high turnover of local staff in NGOs was attributed to this

controversial policy.[80]

Despite the various controversies regarding the work performance of several NGOs, other NGOs contributed much to the overall recovery process in Aceh and were recognized for doing so by representatives of prominent global humanitarian organizations. What most disappointed people was the fact that mistakes repeated so many times in the past had occurred again as if no lessons had been learned. If there had been strong commitment from all NGOs to treat their projects as true humanitarian efforts, they could have overcome failures and found creative ways to ease the survivors' burden, as reflected in the fact that several NGOs in Aceh reported great success in using the CFW program while others experienced failure.[81]

Many NGOs appeared not to realize how painstaking and time-consuming their work would be when they began a project. The need to race to meet a particular target in order to provide a good report to stakeholders or donors should not have been a reason for cutting corners. The transition from relief to rehabilitation is a complex process, often measured in months rather than years, that may appear painfully slow to those living in temporary camps and shelters. The success of return or relocation programs should be determined not in terms of speed but in relation to their capacity to promote community participation in the reconstruction process, as well as to restore and improve on pre-existing conditions associated with health, life, and livelihood (Rofi, Doocy, & Robinson, 2006).

5.2.3 Other project stakeholders

Local government

The role of local government in the reconstruction process cannot be separated from its perception during the civil conflict in Aceh. Seeing the local government as an extension of the central government and as accommodating its political interests, the local people, particularly those who had been affiliated with the GAM, long lacked trust in their local government, and have continued to do so in the post-tsunami era. Hence, the role of local government in reconstruction was minor. Indeed, the disaster itself disabled the local government, destroying most governmental facilities and infrastructure in every affected area. The loss of important documents and archives required that public service during the post-tsunami era start from zero. In Banda Aceh, the situation was even worse due to the literal absence of leadership; the former mayor, who had been detained in a local jail for corruption when the tsunami occurred, was among the missing.

Many reconstruction projects under BRR coordination concerned restoration of local governmental facilities in every affected area. As the works were in progress, government employees began to become involved, with most participating in reconstruction projects managed by the BRR through its project implementing units (PIUs), whose main task was to execute BRR project implementation in the field. Even though these units were under the control of the Head of the BRR Executing Agency, they had full authority to carry out reconstruction work in the field. As previously explained, aside from its main task as the coordinating agency of the entire reconstruction process, the BRR was also responsible for executing a significant proportion of reconstruction work due to the limited number of local, national, and international executing agencies prepared to do so. BRR units managed a large number of projects and were allocated much funding, most of which came from the state budget fund (Table 5.1). During Aceh recovery, BRR projects were recognized as on-budget projects and those managed by international organizations, private donors, or NGOs as off-budget projects.[82]

Table 5.1: Number of BRR Project Implementing Units in 2005-2008 (BRR Book Series: Supervision, 2009)

No.	Fiscal year	Number of Project Implementing Units	Budgeted value (Rp)*
1.	2005	101	3,966,952,500,000
2.	2006	121	14,075,267,954,000
3.	2007	118	10,421,421,421,000
4.	2008	85	10,888,322,764,000
	Total	**425**	**39,351,964,639,000**

* Budget values include budget carry-over amounts

Within most of its officials directly involved with project execution and assuming roles in the BRR, the local government placed less focus on its main role as a public servant organization. For government employees, working with the PIUs meant much more compensation than what they received for working in ad-hoc governmental projects. To the BRR Executing Agency, this attitude was clearly a challenge in maintaining its commitment to zero tolerance of corruption,[83] which required supervision of the large amount of funding managed by the PIUs as well as their working mechanisms, which involved many external parties (Figure 5.7). This situation made attempts to detect any corruption quite difficult. A former UN Deputy Director of Investigations reported that the most common modus operandi of fraud and corruption was collusion between public officials and companies that had been set up to win a bidding process (McClymont, 2007). Several cases of more obvious fraud were found to be, ironically, executed through collusion among the public officials themselves.[84]

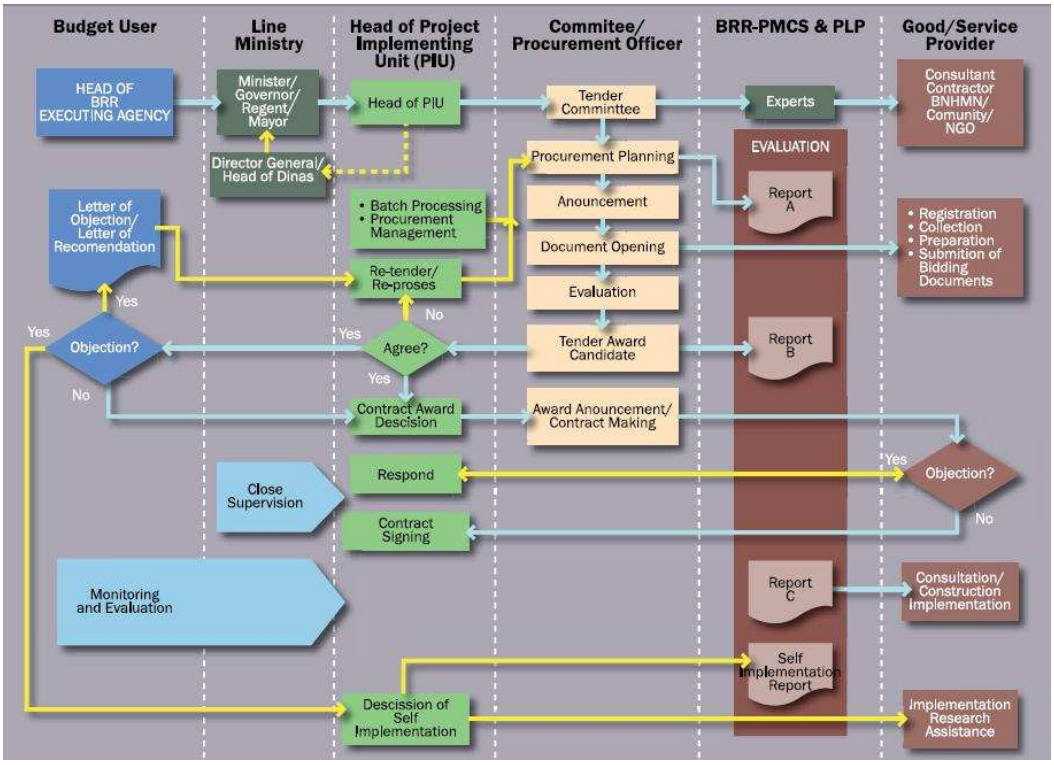


Figure 5.7: Project Implementing Unit Mechanisms: Workflow in reporting goods/services procurement (BRR Book Series: Supervision, 2009)

These findings regarding public officials led many stakeholders of Aceh reconstruction projects doubt the feasibility of continuing the recovery process in the post-BRR period. As had been mandated in the Master Plan, the BRR would cease operations in April 2009 or four years after its initiation. There was some optimism when a new governor who had been elected directly elected by the people was sworn into office in 2007. Local people expected that the success of this democratic process would have a positive effect on all local public offices in Aceh (Fasya, 2007). However, observation of the complex problems of reconstruction work and the deep-rooted corruption among bureaucrats led them to doubt the preparedness of the local government to take over the recovery process [85]

Local People/Beneficiaries

Determining the actual beneficiaries of a new house was a difficult task that lay at the roots of many problems. During the early stages of reconstruction, the BRR, donors, and implementing agencies established the policy that they would provide houses only to those survivors who had already owned land before the tsunami. Ironically, those who most desperately needed houses were ineligible to receive them as, due to their poverty, had previously lived in rented houses and owned no land. During the emergency and recovery process, these people lived in tents or barracks for the longest period.

At later stages, the BRR and other implementing agencies experienced difficulty in building houses for survivors because of this policy. Although much funding was available for building new houses, very few beneficiaries could provide solid proof of land ownership. In response, the BRR and other agencies simply built houses whenever and wherever they saw an opportunity for doing so. As a result, in some cases two, three, four, or even five houses were built for a family on one site (Fig. 5.8). In some cases, the owner acquired the house legally, typically in cases in which a number of families had lived together in a house before the tsunami.[86] However, many beneficiaries acquired multiple houses by manipulating household data, colluding with their village leader, or performing another form of fraud.[87] Until the end of BRR operations in April 2009, a significant number of beneficiaries still retained multiple houses.[88] The Aceh provincial government, which had assumed responsibility for the remaining reconstruction projects after the BRR had ceased operations, had allocated a significant proportion of its budget to executing the legal processes necessary to resolve this issue. However, the legal issues concerned more than the houses themselves, as most of the land parcels on which these houses had been built were owned by the beneficiaries; if the government reclaimed the house, should it also buy the land?[89]

Other realities regarding the beneficiaries of new houses other than multiple house ownership also reflected the complexity of the local situation during the reconstruction process. Agencies often came to a destroyed village with misleading assumptions regarding the tsunami survivors. One misleading assumption was that people desperately in need were willing to accept any plan and aid to help them survive before their life returned to normal or even improved. The first big test came less than three months after the tsunami, when local people refused to be relocated to areas far from their village, which was required to implement the Master Plan of Aceh Reconstruction.[90] In other cases, people reacted strongly against an aid program that seemed to be simply a mechanism to use a donor's money as quickly as possible before concluding with a final report rather than a means of providing humanitarian aid, as occurred in Deah Raya village (Fig. 5.4). The most common cases concerned those in which beneficiaries sent strong messages to the agencies that had built their houses regarding the poor construction

quality. Many of these houses were inhabitable for only several years before becoming totally uninhabitable. This situation occurred in Gampong Java village, whose housing project had once been claimed to be one of the most creatively and rapidly completed. The houses had been built with coconut wood, with which local contractors were not familiar, leading many houses to deteriorate rapidly (Fig. 5.9). The beneficiaries then insisted that the implementing agency that had managed the reconstruction project, a local partner of an international NGO, was responsible for the deterioration.[91]

Figure 5.8: A family with multiple houses on one site

Figure 5.9: A house in Gampong Jawa with a missing roof due to strong winds less than two years after its construction had been completed

Other misleading assumptions about the Acehnese people were that they were stubborn, difficult to manage, and unwelcome to outsiders. Such a characterization had become so widespread that every outsider, even Indonesians who lived outside the village, blamed it for any problem encountered during the implementation process of a program. According to Batson et al., this kind of characterization only becomes fixed through a process based on a long-term partnership (Batson et al., 1997).

In summary, a basic yet misleading assumption was that the survivors, as reflected in the term itself, could survive in even the most extreme situation; that is, one in which no aid came into their village. This assumption was based on the belief that the village's culture of collaboration or *gotong royong* would serve as the social capital necessary to allow them to overcome difficulties. In the context of Aceh post-disaster reconstruction, many agencies seemed to view the survivor as the unit of their aid project and measured their success quantitatively in terms of how many houses they had built, how fast they had built them, and how much money they had disbursed. They did not attempt to determine whether the survivors truly required the programs.[92] What they truly needed was motivation to rebuild their lives, which would have required extensive and prolonged assistance from the aid agencies (Poerwandari, 2006). The agencies that realized this fact during the first stage of reconstruction began acting more as facilitators and less like aid agencies, allowing people to reconstruct their villages by organizing themselves and mobilizing any remaining resources. This approach later inspired the government, in this case the BRR, to require every agency to practice a community-based approach to implementing its program.[93]

Consultants

Even before the tsunami, Aceh had been experiencing a shortage of professional consultants who could manage mid- to high-level A/E/C projects. As the tsunami had made this situation worse, the involvement of professionals from outside Aceh was inevitable. Their involvement with almost every project of every scale had effects on the reconstruction process, with their performance indicating that their primary motivation for participation was not a humanitarian concern but rather professional pride. Many initial plans, including early concepts in the Aceh Reconstruction Master Plan, were dominated by a technocratic approach focused on the process rather than a community approach. For instance, the flat vacant land left by the tsunami wave was seen as a potential site for putting urban planning into reality. Land consolidation, which was impossible in the past, appeared the right strategy to organize the typical disarray of land parcels in an urban context (Fig. 5.10). However, the local people did not accept this strategy; for them, the land was more than simply a commodity.[94] Among the hundreds of housing reconstruction projects in Aceh and Nias, only one project in Lambung village successfully implemented land consolidation, as is further discussed in chapter seven. Apart from this case, an ideal urban housing plan could only be implemented by relocating many people to undeveloped land (Fig. 5.11).

The initial plans of housing reconstruction developed by outside consultants, which were based on ideal principles of contemporary urban design standards without a deep understanding of local conditions, reflected their ignorance of the local context. Even among local professionals, the Master Plan was considered controversial.[95] A similar technocratic mind set could be identified among bureaucrats as well.[96] I argue here that these are the reasons why almost no professional consultants, either planners or architects, had any significant role in any housing reconstruction project. Besides lacking understanding of local culture, these

professionals were not prepared to engage in a community-based planning and design process.[97]

Facing such a complex challenge as housing reconstruction in this context, it is not surprising that very few of these consultants became wholly involved with the entire process of a reconstruction project, particularly as few projects offered any space for creativity. On the other hand, the mega- reconstruction process in Aceh also included new public building projects that offered more space for exploration of ideal building and environmental design. Projects for constructing schools, health facilities, religious facilities, government buildings, transportation terminals, public recreational facilities, and many other such facilities required the involvement of professional consultants in the planning and design process (Fig. 5.12a and 5.12b). A high demand for planning and design experts in the non-housing project sector, complemented by a lack of interest among planners and designers in participating in public low-income housing projects, created a wide gap between meeting real needs and performing real deeds in planning and design practice in the context of disaster recovery for low-income groups.

The Tsunami Museum Design Competition, held during the peak of the reconstruction process, might be the best reflection of the lack of attention accorded to this gap by professionals in planning and design practice (Fig. 5.13a-5.13b). As this architectural competition offered the largest cash prize for design that had ever been offered in Indonesia, almost all professionals involved in planning and design, whether in academia, government, or professional practice, became involved with it in various capacities. This competition, along with the US$7.5 million budget for the museum, triggered much controversy among the stakeholders of Aceh reconstruction projects. The irony of holding a contest whose prize could build houses for at least one thousand tsunami survivors still living in temporary shelters or barracks was realized by many. The architecture community involved with the competition never gave any response to that irony rather they just argued about the urgency of building the museum as a token of commemoration of the big catastrophe. This architect's attitude emphasized the gap between their vision of ideal practice and what the real world required of their profession.[98]

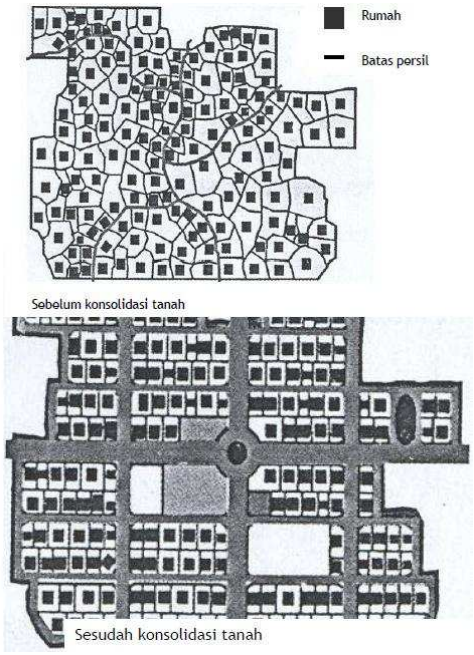


Figure 5.10: Land consolidation strategy as part of a planner's ideal urban plan (Master Plan of Aceh-Nias Rehabilitation and Reconstruction, 2005)

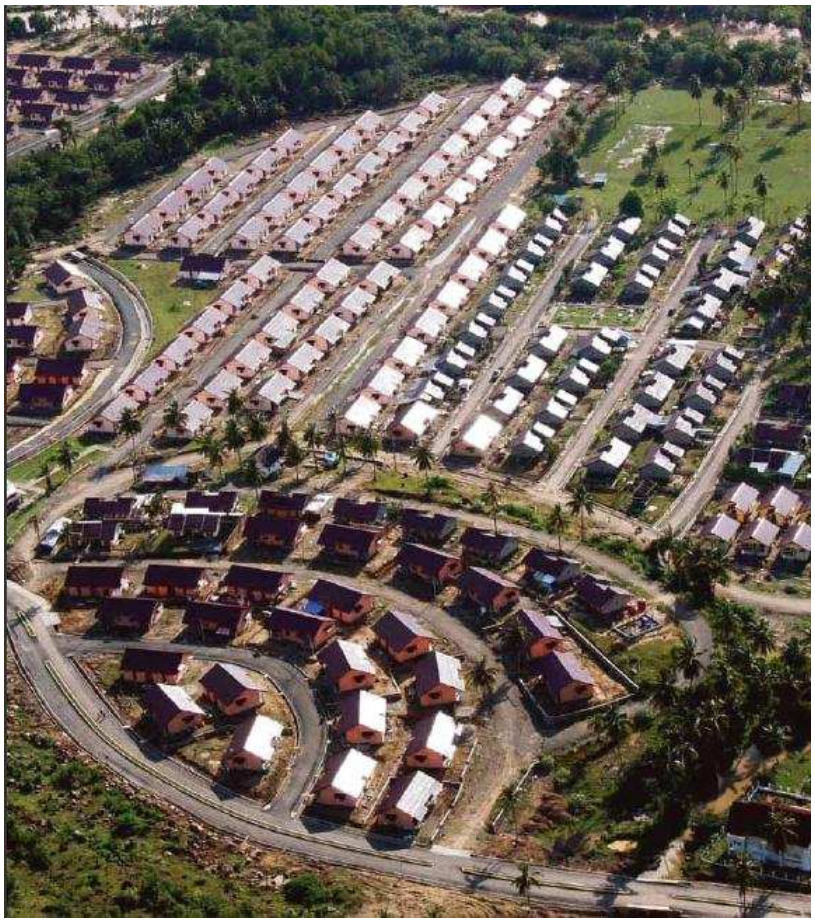


Figure 5.11: Example of an ideal housing plan that could only be implemented on a new (undeveloped) site (source: BRR Book Series: Housing, 2009)

Figure 5.12a: A new hospital in Banda Aceh

Figure 5.12b: A new public elementary school in Banda Aceh

Figure 5.13a: Tsunami museum in Banda Aceh, built based by the winner of a museum design competition

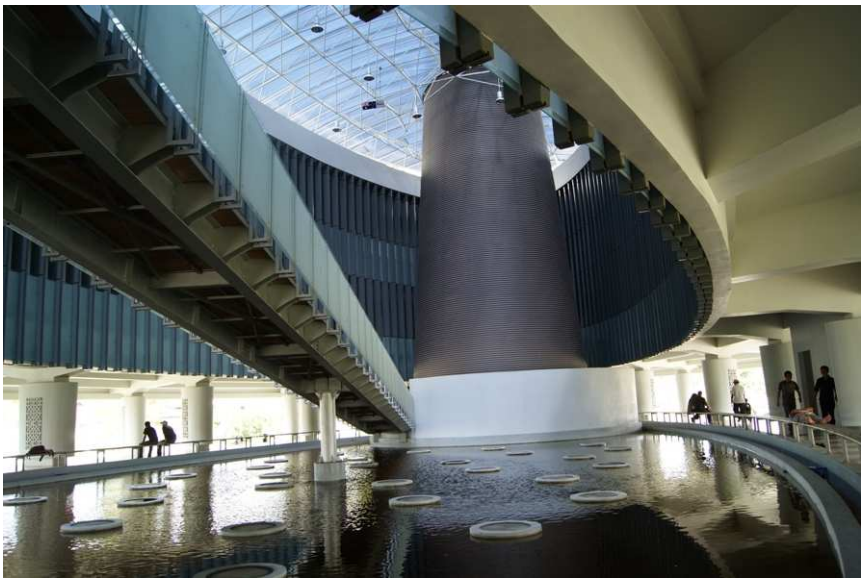


Figure 5.13b: Tsunami Museum in Banda Aceh, inner hall

Contractors

The same situation that existed among professional consultants existed among contractors. It soon became obvious that there were an insufficient number of local contractors to execute all the reconstruction projects, both in Aceh and in Nias. As a result, many outside contractors were employed, many of whom did not have any experience, even in managing a small construction project, such as construction of a single house. It was thus not surprising when many contractors abandoned their projects after receiving the funding intended to finance the projects until their completion (Fig. 5.14).

The lack of qualified contractors was clearly one of the reasons behind many cases of poor construction. The BRR, which recognized this problem but did not have sufficient capacity to resolve it, was forced to accept the blame for the poor performance of its housing projects due to contractor irresponsibility.[99] The BRR attempted to address this issue by creating a list of contractors who had been found engaging in malpractice and widely distributing it so that all agencies involved with reconstruction would not hire them or allow them to take part in a project tender. Ironically, most of the contractors on this list were small local contractors, whose employment the BRR had encouraged and prioritized during the early stage of reconstruction to accelerate the growth of the local economy.[100] Their most common form of malpractice was subcontracting a project with a much lower budget for the project in the original contract.[101]

In response to allegations of malpractice, the contractors argued that they had been forced to pay many illegal fees, which were recognized informally as "security fees," to mafia-like gangs that "owned" the territory on which they had been building. Once a project had started, these gangs would charge the contractor a fee on a regular basis until project completion, leading the cost of the project to cost much more than had been estimated.[102]

Figure 5.14: A new house left uncompleted by the contractor was a common sight in housing reconstruction projects

5.2.4 Collaboration instead of coordination

As explained in chapter two, the context of collaboration depends on the organizational level. On the macro organizational level, political issues drive the context and the image of the working together of the stakeholders in reconstruction projects. As such, coordination instead of collaboration represents the level at which these stakeholder work together. This theory accords with the role of the BRR as the agency of coordination of the entire rehabilitation and reconstruction process. On this level, there has been much recognition of what the BRR and all stakeholders achieved in Aceh. However, on the micro organizational or project level, it is difficult to identify the existence of collaboration and its role in the performance of the reconstruction projects. As the agent of coordination, the BRR had the greatest ability to promote collaboration but appeared not to realize its power.

The wide divergence among the common interests of the stakeholders, in addition to the complexity of the social, cultural, and political context, increased the difficulty of achieving collaboration during the reconstruction process. It would have taken a tremendous effort to direct all of the interests of the various stakeholders in the same direction by appealing to their humanitarian sensibilities. A significant factor that was lacking was the presence of a facilitator to promote negotiation of interests among the stakeholders. The findings of this investigation indicate that none of stakeholders could have assumed this role. Even the consultants, either the planners or architects who should have been most equipped with the necessary knowledge, would have been unprepared to assume this role. Moreover, they were more concerned with designing an ideal product than performing an ideal process, although the latter action was more important in this context. Within such a complex setting of multiple stakeholders, it is difficult to identify a project among the hundreds of reconstruction projects that could be taken as a model of a process-based reconstruction project.

Nevertheless, several assessments by various institutions have portrayed specific projects as representing an ideal model of housing reconstruction. Such a portrayal, although mostly concerned with the quality of the final product, has allowed several agencies to obtain

recognition for their extraordinary reconstruction processes. The most prominent project was the housing reconstruction project managed by the local NGO Urban Poor Linkage (UPLINK), which was granted the 2007 World Habitat Award for the Implementation of Integrated People-Driven Reconstruction. This project is one of the case studies investigated in chapter seven. Nonetheless, it must be remembered that collaboration is not always synonymous with or leads in the same direction as community participation. If so, how important is the role of collaboration in the worst of disasters? The following chapters attempt to address this question by further investigation of the general and specific findings as they apply to five projects that serve as case studies of disaster recovery in Aceh.

Chapter 6
Reconstructing Banda Aceh: From playing politics to village planning

6.1 Housing development in disaster recovery

Introduction

One serious mistake made in the examination of housing problems in disaster recovery is a tendency to focus on a utilitarian approach. The progress and success of the recovery process are usually measured by quantity, with a focus on indicators such as number of houses successfully reconstructed, length of roads rehabilitated, or amount of time in which recovery is accomplished. Yet many housing reconstruction problems in a disaster-recovery context, particularly in developing countries, do not derive from a failure to meet targeted numbers; rather, they are influenced and constrained by social, cultural, ecological, historical, and political-economic forces (Bolin, 1994). Parallel phenomena have long occurred in relation to housing problems. Housing is now so firmly embedded in the social, economic, and political structure of every society that it cannot be studied in isolation. In this section, I discuss how and to what extent housing theories can shed light on typical housing problems in disaster recovery, particularly in the reconstruction stage.

Complicated context

Recovery refers to the condition in which a disaster-affected community achieves the state it would have achieved if the disaster had not occurred (Bates & Peacock, 1987). Recovery, in this sense, incorporates the notion that disasters interrupt social processes, including those involved in housing, often either accelerating or decelerating them.

Sheltering and housing in post-disaster recovery constitute a social process determined by a complex set of factors. Housing victims in the aftermath of major disasters experience complex social processes. The actions of household members are not the outcomes of individual choice; they are influenced and constrained by social, cultural, ecological, historical, and political-economic forces. Relevant factors include the availability of non-hazardous areas for temporary housing facilities, historically prevalent community housing practices, government housing and aid programs, relocation of employment sources, post-disaster land use changes, and hazard mitigation efforts. In addition, political factionalism and the promotion of specific class interests in the reconstruction process can influence post-disaster sheltering and housing (Bates, 1982; Bolin, 1986; Oliver-Smith, 1990, 1991; Quarantelli & Dynes, 1989).

The consideration of disaster recovery in communities as complex networks within a social system requires a multi-dimensional perspective (Bates & Peacock, 1987; Dynes, 1970; Lindell & Prater, 2003; Wenger, 1978). An important element of community recovery is associated with infrastructure and lifelines that are fundamental for the operations of other systems dependent upon transportation, electricity, water, and waste disposal. Getting business up and moving again is critically important for resuscitating economic activities within communities. Businesses provide economic resources in the form of wages and salaries as well as goods and services. Communities that lack economic opportunities, jobs, goods, and services will lose their populations. However, if the population lacks housing, will residents stay or return regardless of economic factors? In other words, housing recovery is critical, and all types and forms of housing recovery, including affordable housing, are important. There is, of course, a

chicken-and-egg quality to this discussion. Which should come first, business recovery or housing recovery?

In summary, pre-disaster social patterns will shape permanent housing recovery in the reconstruction stage. Patterns of post-disaster sheltering and housing are bound up in larger social processes of recovery and reconstruction. Housing and overall recovery processes are strongly influenced by social dynamics already manifest in the pre-disaster social structure (Bates, 1982; Blaikie et al., 1994; Oliver-Smith, 1990, 1991; Quarantelli, 1982).

6.1.1 On the reconstruction stage

I would like to return to the questions posed at the beginning of this sub-chapter. How and to what extent do housing theories help to explain the housing problems typical of disaster recovery, particularly in the reconstruction stage? Focusing on this stage is essential if we want to determine how housing theories that pertain under 'normal' conditions could apply to a disaster recovery context. The main argument is that housing development in this stage of the recovery process is quite close to that under normal conditions. Perhaps this is the reason that research and theory concerning the reconstruction stage of the disaster recovery process are still limited (Bolin, 1985, 1994; Nigg & Tierney, 1993; Peacock & Girard, 1997; Tierney et al., 2001). Scholars in this area have been more interested in conducting research on the earlier stages of disaster recovery, in which the situation is considered more unique and more challenging. However, as discussed previously, even in normal conditions, problems in housing development programs, particularly in developing countries, cannot be simply understood through theories. The social and political economy context of each housing problem is important.

Furthermore, recovery is not merely an outcome; it is a social process that begins prior to disaster impact and encompasses decision-making concerning restoration and reconstruction activities. It must also be recognized that what takes place during the aftermath of a disaster has roots in the pre-disaster phases of response and recovery planning as well as mitigation implementation. Bricks and land use codes are only aspects of reconstruction, which mostly concerns social values and group interests (Quarantelli & Dynes, 1989).

From this perspective, what becomes important is how decisions are made, who is involved in decision-making, what consequences decisions have on the social groups within disaster-stricken communities, and who benefits from these decisions and who does not.

Haas et al. (1977) have defined a sequential model of disaster recovery that consists of four phases: the *pre-impact period*, when preventive or mitigating strategies are possible; the *emergency period*, when the disaster occurs and normal activities are suspended; the *restoration period*, when damaged property and utilities are sufficiently repaired to enable them to operate again and evacuees return to the city; and the *reconstruction period*, when social and economic activities are rebuilt to pre-disaster levels or higher. The last phase has been a particular concern for Hass et al. They argue that almost no previous research has been done on urban reconstruction following disasters, in contrast to the relatively abundant information available about the immediate response to disaster.

Furthermore, Haas et al. (1977) claim that the reconstruction process is ordered, knowable, and predictable because the investment in cities, both emotional and physical, goes far beyond whatever damage has been sustained. All of the four case studies included involved natural hazard events that were sudden, brief "acts of God" rather than "acts of man." One is led to wonder how the reconstruction process in these cases is similar to, or different from, that in cities ravaged by war or by the slower processes of urban blight. In contrast to other stages of

recovery, the reconstruction process is ordered, knowable, and predictable (similar to a normal situation). Quarantelli (1982), referring mostly to cases of developed countries, has claimed that permanent housing is the least planned of all sheltering and housing phases in disaster recovery.

6.1.2 Political-economic issues

In developed countries, permanent housing recovery is essentially a market-driven process (Bolin, 1985; Comerio, 1998; Peacock & Ragsdale, 1997). In keeping with the market-based logic of housing recovery, private insurance is the primary source of most private funding for repairing and rebuilding homes. The government does not take an active role in housing recovery processes. The basic aim of government policy is filling gaps or providing a "safety net" (Comerio, 1998; Kunreuther, 1998) by supplementing individual resources such as private insurance and nonprofit charity. This laissez-faire approach tends to be totally ignored in local community-level disaster planning. In the United States, allowing the market to manage housing recovery has been characterized as the result of a conservative approach in which restoration of the status quo is the goal (Bolin, 1985, 1994; Quarantelli, 1982). In other words, the market is a suitable mechanism in disaster recovery if one wishes to maintain or increase pre-disaster social inequities (Bolin, 1985; Bolin & Stanford, 1991; Haas et al., 1977).

Permanent housing recovery is dependent on financial resources for repairing or rebuilding housing. One might also regard labor and expertise as critical for rebuilding, particularly in areas where household and family members are actively involved in the actual repair and rebuilding process. Labor and expertise can be especially important in the developing world but can also play a significant role in developed countries, particularly among low- to moderate-income households and in cases in which many family members have worked in construction and are able to donate their skills, expertise, and labor in the reconstruction process. However, more often than not, both in the First World and the Third World, labor and expertise are eventually purchased (Bates, 1982; Bolin & Stanford, 1991; Wijkman & Timberlake, 1988).

Neoliberalism: An example

The 1970 Peruvian earthquake occurred just one and a half years after a bloodless military coup installed General Juan Velasco Alvarado as president of Peru. Velasco's "Revolutionary Government of the Armed Forces" operated under a corporatist model of participation and struggled to apply a "process where reforms were aimed at achievement of a pluralistic and humanistic society—neither capitalist nor communist, based on a social democracy of full participation" (Oliver-Smith, 1986). The government's assumption was that "the citizen is not capable of participating effectively without government assistance" (Palmer, 1980); thus, it sought to channel popular participation carefully through state-controlled organizations. This system of centralized control resulted in a situation where the state was accountable to itself for its actions, rather than to its citizens. Participation in state-controlled organizations was encouraged while autonomous movements were generally suppressed. Although the population participated actively in these groups, tight control made any direct involvement in decision making purely illusory (Palmer, 1980). It was in this context that post-disaster reconstruction planning in the disaster zone was carried out.

A self-help housing program known as *auto-construction* was developed, whereby the residential zone was divided into lots and assigned to people under a similar system of priorities. Although the old towns already reflected and were characterized by marked and rigid stratification, under this program, class differences were even more marked, not only by house

size, but also by materials and construction (Oliver-Smith, 1986).

The reconstruction authority provided electrical and water hook-ups according to the town plan, as well as technical expertise related to construction. Although the plan called for full electric, water, and sewer services for the city, planners did not consider the prohibitive connection charges that effectively prevented significant portions of the population from obtaining these utilities. Families' choices were confined to two house designs, but many made unauthorized modifications during construction. The program's advantage was that it provided a less expensive alternative and less uniformity than identical Russian chalets. A disadvantage was that the purchase and distribution of materials was often untimely, seriously delaying the construction process. As of 1983, some participants were still unable to finish their homes due to lack of funds (Oliver-Smith, 1986).

Many participants are dissatisfied with the way the program was organized. Their initial request was for a loan program that would allow them to design and build their own homes. Their views corroborate the findings of Turner's (1977) study of self-help housing, which indicates that such programs have better chances of success when participants are given loan money outright and are free to use their own networks of contacts to buy quality materials in a timely manner. Another consequence of the program was that it split up family and village groups, putting together people who had not had any prior association and were of widely differing capabilities to perform cooperative tasks. This resulted once more in social difficulties and hampered construction.

Scale of disaster effects

It should be noted that while the inhabitants of Mexico City reacted well to the 1995 earthquake and the organizations in the metropolitan area did what they could, this was not a catastrophic occasion. The disaster was a major one and worse than it appeared on the surface. Nonetheless, the earthquake did not disrupt the everyday community behavior of Mexico City in the way that, for example, the Tangshan, Managua, and Guatemala City earthquakes in recent times, or the San Francisco, Messina, and Tokyo earthquakes in the past completely disrupted the everyday activities of the cities involved. These cities experienced catastrophic disasters; Mexico City did not have a catastrophe (Dynes et al., 1988).

The worst damage caused by the Mexico City earthquake occurred in two modern high-rise housing developments and in housing in two wards of the old city – Cuauhtemoc and V. Carranza, home to poor but well-established working-class families. According to a government report, 3700 residential buildings were destroyed and 76,000 units were lost. There was definitely a short-term alternative housing problem, as at least thirty thousand to fifty thousand people were left homeless. However, many unofficial reports estimated that the number of housing units lost and the number of people left homeless were nearly double the official estimates. Given that neither owners nor tenants had home insurance, the recovery process in poor neighborhoods faced a serious financing problem.

Fortunately, the Mexican Government was in the middle of its debt restructuring concession. Together with a World Bank loan, this situation helped the government to rebuild the damaged infrastructure and to subsidize victims' purchases of new units. Recovery efforts related to the post-disaster housing crisis in the Mexico City case were highly influenced by the local political situation and the city government system. Though the victims represented less than 1 percent of the city population and only 6 percent of the two wards were heavily impacted, the catastrophe affected the stable working-class population in the city. This situation created the

political perception of a housing crisis and motivated the government to act quickly, decisively, and generously to avoid a more serious housing and political problem in Mexico City. The government assumed primary responsibility for rebuilding after the 1985 earthquake devastated densely settled, working-class neighborhoods and public housing towers (Comerio, 1998).

Implicit in the sociological notion of "community recovery" is the assumption that social groups will experience the recovery process differentially. Communities are not monolithic entities consisting of only one type of residential group. Although we sometimes characterize cities by their major demographic and social trends, this description tends to give the false impression that other social groups do not exist or are not significant. However, all communities are made up of a variety of social groups—the elderly and the very young; the very wealthy and those on welfare; ideological conservatives and radicals; and different racial and ethnic groups—to name only a few.

Because these social groups differentially experience the recovery process, an overall discussion of the community recovery process must include a consideration of pre-disaster intergroup dynamics and relationships, as well as their relative political influence. These groups vary markedly in their ability to influence the decision-making process in their communities, depending on their relative size in the community; their political linkages to those in decision-making positions; the informal as well as organizational contexts within which contacts take place; and the cultural history of intergroup relations that has preceded the current encounter.

It must be remembered that these relationships do not change substantially in post-disaster contexts (Nigg & Tierney, 1993). Although there may be brief periods following the actual impact of the disaster agent on the community during which social group barriers are lowered and an altruistic therapeutic community (Fritz, 1968) arises, providing a context in which supportive and altruistic norms can emerge and enabling a collective response to victims of the immediate disaster event, these periods are usually very short-lived. As has been frequently evidenced, community conflict soon replaces altruism as communities move from the immediate impact period into the relief and long-term recovery phases of a disaster.

On the informal sector

Studies of post-disaster reconstruction have shown that spontaneous shelter and housing frequently occur in the absence or in spite of post-disaster planning. The debate that usually arises following disasters in urban areas concerns whether the city should be rapidly rebuilt on the model of the pre-disaster city, or whether time should be invested in designing and constructing a better city. It has been found that residents do not want to wait for elaborate plans; they have the plan of their old city in mind and are anxious to begin reconstruction (Haas et al., 1977).

Consequently, urban housing planners working in post-disaster reconstruction are often faced with severe opposition and constraints. Even in non-disaster circumstances, policy and implementation are constrained by elements of the social context such as political pressures, demands of special interest groups, and prevailing economic conditions (Roy & AlSayyad, 2004). For example, a problem common to any type of housing development in the Third World that is especially prevalent in post-disaster situations is the disparity between the perceived needs of the residents or beneficiaries and those that the government, policy makers, or planners assess. Each group has divergent images of the urban environment resulting from class origins, ethnicity, and other differentiating factors. Because most of the elites are trained in the methods and maintain the ideology of the advanced industrialized nations and are usually not local residents,

they frequently hold environmental images that differ from those of the recipient populations and may tend to impose their cultural values on the resultant urban environment.

Pre-disaster social inequalities determine and are reflected in the permanent housing process (Bates, 1982; Oliver-Smith, 1986). Specifically, Oliver-Smith (1986), who has been involved with longitudinal research on the process of recovery since the 1970 Peru earthquake, documents a painful reconstruction involving divisive, violent struggles. He observes how culturally and ethnically demeaning attitudes resurfaced in the new redeveloped area. He reflects that the traumatic experience did nothing to alter the conservative essence of interethnic relationships that have traditionally characterized Peruvian society.

Perhaps the worst experience was that of the pre-impact homeless populations, another social group that is usually missing from discussions of disaster recovery (Phillips, 1993; Wisner, 1998). These homeless people run high risks of injury from falling trees in parks and from exposure to wind and flooding along rivers. Even if they retreat to indoor refuges, they are at risk of losing their meager possessions, which deepens the poverty that helps to make them vulnerable.

Large-scale demographic shifts have been stimulated by forces in the political economy of the nation, affecting individual lives on a mass scale. However, some constants have persisted despite rapidly changing circumstances. Even though the disaster almost eliminated the urban-dwelling upper class, those who survived were quick to reestablish their preeminence through personal power in social networks that afforded them access to capital and other resources and enabled them to claim a virtual monopoly on community affairs and direction. Neither the reconstruction authorities nor the government agency in charge of popular participation did anything to change this. Although the government began carrying out major structural changes on the national level, particularly in the areas of rural and urban property ownership, agrarian reform, social welfare, and education, these new policies did little to alter the local system in which elites had been able to adapt. In summary, social class is a determinant of the type of housing and the level of recovery accomplished (Wijkman & Timberlake, 1988).

However, among hundreds of facts supporting the urgency of devoting significant attention to the locality of each case in post-disaster events, there is still a major factor that can be found in any of those events. Regardless of the context of any natural disaster, whether it occurs in a developed country, a developing country, or a country classified in some other manner, the worst post-disaster impact, both physically and psychologically, is felt by marginalized or disadvantaged people who do not have access to the formal system. Vulnerability is a reality of daily life—a reality that has long been a challenge in planning and design practice yet ironically has never been a major focus of attention for professionals in these areas.

Along the continuum of these political perspectives, there are two central issues of housing implementation strategy—**self-help** and **tenure**—that significantly influence the success and failure of housing programs in developing countries.

6.1.3 Housing implementation strategy

Self-help Housing Program

Self-help housing emerged from the debate concerning alternative approaches to the housing problem in the Third World. A growing awareness of the shortcomings and consequences of the urban housing strategies of many developing countries led to an intensified search for reliable and cost-effective ways of improving the housing plight of the working poor.

This search has resulted in a shift of housing policy from slum clearance and conventional public housing provision to sites and services and upgrading, which is known as *self-help housing* (Turner, 1977). Within this framework, Turner and his followers argue that providing only basic services and shelter allows poor families to expand their units over time as their savings and resources permit and to use their own labor to maintain and increase their wealth (Kearne & Pariss, 1982; Swan et al., 1983). The self-help discussion was very much oriented to the purely material and physical aspects of squatter housing and slum-settlements. Self-help was seen as a vital component of a new spontaneous, self-determined, neighborhood-based and non-anonymous way of living.

Since the 1990s, this approach has gained support from international agencies, with the World Bank playing the leading role as an agent of neoliberalism. At the same time, it has been recognized that self-help approaches cannot prevail without any supplemental aid from outside the targeted households; with this understanding, the concept should be more appropriately renamed 'aided self-help' (Harris & Giles, 2003). This typical model of 'aided self-help' has gained popularity in many developing countries around the world, with specific contextual practice varying according to the social and political economy of each country (Payne, 1984).

Critiques of the self-help housing program

The self-help housing program, whose implementation cannot be separated from political interests, has been the target of many criticisms. In Latin America, its conceptualization was challenged mostly from the perspective of Marx's theory of labor-power reproduction. From this political perspective, self-help housing programs have been accused of being part of the government's attempt to quell popular movements. Participation in them has been seen as turning popular organizations into state subordinates and immobilizing workers in their struggle (Pradilla, 1977 as quoted in De Azevedo, 1987). Most Latin American governments adopt self-help housing construction programs as miraculous solutions only in rhetoric. Although official discourse continues to praise self-help construction as a means of resolving the housing problems of the poor, in reality, states allocate only minimal resources for these alternative programs. These initiatives, therefore, have principally symbolic and ideological roles in most countries in representing the official response to the problem of popular housing (De Azevedo, 1987).

This neo-Marxist perspective is not the only critique of self-help housing programs. A more prominent criticism advocated by those called radicalists is that the notion of the reproduction of labor-power is inappropriately applied in Third World countries. This is due to the growing importance of the informal sector, which exists alongside and is exploited by capitalism. Self-help housing becomes an informal means of delivery of land, property, and infrastructure, in addition to providing the socio-spatial environment required for the functioning of informal sector activities. The debate has also been concerned with the fact that self-help solutions can result in a reduction in the state's responsibility for the provision of housing (Burgess, 1982; Harms, 1982; Ward & Macoloo, 1992). They provide critical reviews of the more recent housing policies of Third World governments that are supported widely by the World Bank and other international agencies. The major issues within this debate are the following:

- Exploiting the poor

  Self-help is another means of exploiting the urban poor, in that they have to work hard to build their houses while the upper level group can obtain finished housing. In other words, the capitalist indirectly exploits the labor of the poor to build low-cost houses for the program. It is the most affordable alternative for them, given the

low salary they receive from the capitalist (Harms, 1982).

- Speculation

The second issue concerns the debate over who should get 'use value' vs. who should get 'exchange value' from housing. A house will have exchange value whenever it is seen as a commodity. On the other hand, a house will have use value whenever the resident or the owner feels satisfied living in it. Whenever there is a transfer from use value to exchange value, it is always accompanied by an increase in the price of the house. Ironically, in most cases of self-help housing projects, the increased value of the house does not go to the first owner but to speculators (Harms, 1982; Ward & Macoloo, 1992).

- Participation

Participation in self-help housing programs has come to be conceptualized in political rather than development terms. Through this concept, the government dramatizes individuals' participation to cover its failure to provide adequate housing for its people (Burgess, 1982).

- Standard

Housing units under self-help programs are typically subject to extremely low standards concerning what constitutes a habitable house. Low standards for the core house and its infrastructure tend to create new slums and underscore the spatial segregation of housing between households of low income and those of middle and high income (Burgess, 1982).

- Tenure

Radicalists tend to put the concept of the rental house into practice rather than give ownership to the poor. Giving ownership to the tenant only enables speculators to gain more benefit by letting house prices rise uncontrollably (Harms, 1982).

The last point emphasizes the implications of self-help programs for another significant issue in the implementation strategy for housing provision, which is known as tenure. Angel (1983) and McAuslan (1985) discussed its strong relationship with land ownership. Further studies conducted by UNCHS-Habitat (1984, 1985) showed that the manner in which dwellers contribute to self-help programs varies with the type of tenure they hold on the property.

Tenure-related issues

In the aftermath of a natural disaster, renters are much more likely to be displaced, for they have few if any rights to the property, only to the contents within it, whereas single-family homeowners can often choose to stay despite damage. Relative to owners, renters are much more likely to be displaced, are much less likely to have insurance to cover their assets (Kunreuther 1998), and have access to a much more limited range of government programs (Bolin, 1985; Bolin & Stanford, 1998; Comerio, 1998; Quarantelli, 1985).

Low-income and minority households often have particular difficulty finding alternative housing, in no small measure because affordable housing is likely to be in short supply prior to a disaster. As a consequence, they are much more likely to find themselves in various forms of temporary sheltering and housing options. In developing-country contexts, it is very common for temporary shelters and houses to become permanent dwellings (Oliver-Smith, 1991; Peacock et al., 1987; Quarantelli, 1985). Even though, theoretically, renters are free to move on to other rental opportunities, their ability to locate permanent housing depends on a number of factors such as transportation, economic resources such as savings, job opportunities, family location,

and most importantly, rental vacancies.

In summary, low-income and minority households tend to suffer the most of damage in disasters (Bates, 1982; Bates & Peacock, 1987; Bates et al., 1963; Blaikie et al., 1994; Bolin, 1986; Dash et al., 1997; Drabek & Key, 1984; Haas et al., 1977; Peacock & Girard, 1997; Quarantelli, 1982). In light of the differential damage impacts, it can be anticipated that permanent housing recovery, unless supplemented with higher levels of recovery resources for housing occupied by low-income minority households, is likely to be an uneven process. It is understandable that governments and NGOs have adopted neoliberal approaches to this issue such as self-help and a tenure-based recovery process in allocating aid for housing recovery.

Along with self-help housing, other programs focusing on the creation of an "enabling environment" for the urban poor in developing countries have become favorites of the World Bank and other neoliberal promoters. The underlying concept of the enabling environment is economic empowerment, whereby people can finally afford tenure or homeownership (World Bank, 1993). There are strong interactions between urban poverty and tenure status. Insecurity of tenure, the threat of forced eviction, and poor access to basic urban services contribute to the further deterioration of the economic status of the poor. Tenure insecurity deters investment in home-based activities, which play a major role in poverty alleviation. In *The Mystery of Capital* (2000), Hernando de Soto, a prominent theorist in this area, strongly emphasizes the importance of property rights or security of tenure and title in transforming the economic opportunities of poor people. Ensuring secure property rights is the reason that capitalism is such a productive economic system. The absence of secure tenure, meanwhile, explains the failure of capitalism to take hold in developing economies. This neoliberal approach was derived from de Soto's critique of capitalism in Peru, which he presented in his earlier work "The Other Path" (1989).

Even though his works were based on informal housing in Peru, de Soto's theory is relevant to similar cases of informal housing in other Third World countries. The unique characteristic of informal settlement is that the various stages of traditional urban development are reversed. First, informals occupy the land. They then build on it. Next, they install infrastructure. Only at the end do they acquire ownership. Along this continuum, de Soto identifies ten stages representing what he calls the long march toward private property for the informals. Informal settlements have given rise to a system of private, extralegal property rights developed in an environment in which there are no efficient legal mechanisms to express the value that people of humble origin attach to land. However, the system is unstable because it does not protect the informals when others seek to invade their land. The absence of a legal system of efficient property rights is detrimental to all.

6.1.4 Land tenure is not everything

On the social and anthropological perspective

One of the most fundamental dimensions for de Soto's theory is that of cultural and local social context, yet this dimension is missing from his discussion. Many of the complications arising from implementing de Soto's policy recommendations have manifested when insufficient attention has been paid to cultural and local issues. Concepts of property rights and ways of conducting social, political, and cultural life are as varied as human civilization itself. Demsetz (1967) argues that property rights develop when there is sufficient demand for them—that is, when the benefits of internalizing externalities exceed the costs of not doing so. Based on this perspective, the absence of property rights reflects the absence of demand for them.

The anthropological perspective of Peattie and Aldrete-Hass (1981) suggests that

property rights involve a spectrum of choices that depend on idiosyncratic circumstances. It is true, as de Soto points out, that Mexico City taxi drivers and Filipino rice farmers do not lack entrepreneurial spirit. But that is not the same as arguing that all major cultures can get with the individual-property-rights program. Moreover, the notion of informality that de Soto employs is debatable. It comes from the assumption that informality is truly a problem, and that the only panacea is a transition to formality. However, when conditions within the informal sector seem to be improving, the question of whether the sector is growing is no longer relevant (Gilbert, 2004).

In most developing countries, there is what might be called an anthropological perspective on tenure. This concept involves a continuum of tenure categories in which there are different levels of security of tenure. Across this spectrum, some may value titles much more than others, and no simple policy reform will change the situation (Payne, 2002).

On the legal-extralegal issues

Even if we recognize de Soto's main idea of giving title to the extralegal, its adjudication seems to entail a complicated or impossible process. Several factors may account for this. First, giving title is often a costly process; it is not just a matter of formalizing informal arrangements that already exist. Very often, contradictory claims of ownership succeed announcements of titling programs. The costs of processing these claims may abrogate the gains of titling. De Soto fails to recognize that the local actors in charge of this transformation are those who have a vested interest in the status quo (Bromley, 2004; Woodruff, 2001).

Second, by using de Soto's definition of informality as extra-legal behavior, we can easily see that the rich and the powerful, supported by the status quo, are much better at informality than the poor. Bromley (2004) has documented some events from First as well as Third World countries that reveal the extra-legal behavior of the elite.

Third, an apparent paradox accompanies any titling program for informal residents. Much of the land on which informal houses are built is obtained through illegal squatting on private property without compensation to existing owners. Therefore, any titling program has to consider providing amnesty to those who benefit from invasion. Whether such a process will result in greater respect for property rights is open to debate (Woodruff, 2001). A case in Bogota indicates that giving legal titles has not created a better housing market or better supply of credit for the poor (Gilbert, 2002).

Fourth, there is less value in a title if it is not meaningful as collateral. This is the case in most of Sub-Saharan Africa as well as in many other developing areas, as no effective formal financial system exists to realize the value of the collateral. Moreover, even when a formal financial sector is functioning, many who live in informal housing are self-employed or work in the informal sector, so it is difficult for them to offer proof of income, which is a necessary condition to obtain credit from formal financial institutions. The result is that the collateral value of a property title in most developing economies remains low (Buckley & Kalarickal, 2005).

Giving title is not everything

The problems with title reform do not imply that housing policy should not include reforms to improve tenure and the legal framework for individual ownership. However, formal titling programs are rarely sufficient as the sole solution to the problems of urban poor people. Undoubtedly, formal titles are often a necessary condition for a fully functional housing market to develop, particularly in terms of a housing finance system. But they are not a sufficient condition to unlock trillions of dollars that are allegedly locked up in dead assets.

Complementary reforms are also necessary. In short, poor people are not impoverished because a simple housing market panacea has been ignored or simply misunderstood.

According to de Soto, land titling by itself is not likely to have much effect. Titling must be followed by a series of politically challenging steps. Improving the efficiency of judicial systems, rewriting bankruptcy codes, restructuring financial market regulations, and similar reforms will involve much more difficult choices by policymakers (Clift, 2003).

For cultural reasons, the diversity of tenure systems requires a diversity of responses. This is not the case when emphasis is placed on a single option such as the delivery of individual property titles. Tenure is also a reflection of social relations. Social links that are established on the occasion of land transactions, whether legal or illegal, play a major social role that must not be underestimated. The mass delivery of property titles may weaken the social link (Payne, 2002).

6.2 Disaster planning

6.2.1 Vulnerability and technology

Tsunami 2004 triggered awareness of how vulnerable people live in many regions of Indonesia. Unfortunately, there was no standard safety procedure available at the time of the tragedy. This factor contributed to lack of preparedness for local people facing a natural disaster. A survey conducted in Banda Aceh not long after the disaster indicated that if people had possessed more knowledge concerning how to react when the earthquake happened, casualties would have been much lower. The evidence shows that, based on the knowledge and procedures existing at the time, any expectation of an effective warning prior to the tsunamis was unreasonable. On 26 December 2004, as much action was taken as was feasible. Prior to the catastrophe, the Indian Ocean tsunami risks were acknowledged, but no warning systems were implemented because other priorities were deemed more important (Iemura et al., 2006; Kelman, 2006).

Further research on local preparedness prior to the tsunami revealed that local residents' knowledge about the disaster was limited to what they had heard by word of mouth from family members and neighbors. These conditions were found in almost of all the areas surrounding the Indian Ocean that were hit by the tsunami, such as the coastal regions of Sri Lanka and the resort area of Phuket in Thailand (Kurita et al., 2006; Ichinosawa, 2006). In Indonesia itself, there were no laws or regulations regarding the management of post-disaster emergency situations or the reconstruction that typically follows the emergency phase. The first law of this kind was put into effect in 2007. The legalization process for this law was indeed triggered by the 2004 tsunami and its tremendous impact.

Recovery from disaster is not merely concerned with the reestablishment of the physical or built environment. Community recovery should not be conceptualized as an outcome, but rather as a social process that begins before a disaster occurs and encompasses decision making concerning emergency response, restoration, and reconstruction activities following the disaster. In other words, reconstruction is less a technical problem than a social one. In order for successful post-disaster decisions to be made, there must be awareness of pre-disaster conditions that created situations of social and structural vulnerability, putting some segments of society at greater risk in the event of an earthquake than others. From this perspective, what becomes important is how decisions are made, who is involved in decision making, what consequences those decisions have for social groups within disaster-stricken communities, and who benefits from these decisions and who does not (Nigg, 1995). In line with Nigg's argument, Kreps and

Drabek argued further about the specificity of the social aspects of disasters, which are characterized as non-routine social problems. Disaster is more likely to involve social constructivism than functionalism (Kreps & Drabek, 1996).

In addition to the social dimension of disasters, one must take into account anthropological issues such as poverty, ethnicity, gender, age, kinship, institutional policy, and the media in order to understand disaster recovery problems comprehensively (Oliver-Smith & Hoffman, 1999). Failure to notice these issues is likely to cause one to oversimplify post-disaster effects such as negation of local government in allocation procedures and class/ethnic bias in resource distribution (Doughty, 1999; Rajan, 1999).

Even the technological application of disaster recovery must consider the social and cultural context of the affected area. Specifically in developing countries, technical limitations that affect efforts to reduce the economic cost of earthquake damage are visible, and familiarity with advanced technological infrastructure remains insufficient. Within this context, social and cultural factors should be part of the proposed solution (Comerio, 2006). A lot of facts from the Aceh reconstruction process have shown how the implementation of new technology in disaster mitigation without social or cultural consideration can lead to operational problems. In many cases, vandalizing of equipment for the tsunami-earthquake early warning system occurred. Vandalism happened within several months of the installation of these systems around Banda Aceh (Fig. 6.1). In extreme cases, buoyed equipment that was placed offshore in the Indian Ocean was lost or damaged.[103]

Figure 6.1: Tsunami early warning system installed in several strategic location in Banda Aceh

Public buildings and infrastructure had more visible impacts than the tsunami warning system equipment due to the absence of social and cultural considerations during the planning and design process. As I conducted my lat field research by the end of 2009, among the three escape buildings that were built as part of a future mitigation system in Banda Aceh, only one was still in proper condition. The two remaining buildings had become run down and

underutilized (Fig. 6.2). The planning of this facility put too much focus on functional and technological considerations while social and cultural aspects of its daily operation had been neglected. From a utilitarian perspective, there was nothing wrong with this building, given its main function as an emergency facility. Whether it functioned properly or not would be tested when an emergency situation following a disaster occurred. Yet in the view of the surrounding community, the building was more than an emergency facility. Whether a disaster would occur or not, the building had been established as a presence in the middle of a neighborhood. The problem of its non-emergency function had not been among the planning considerations. As a result, many of the building's parts and fixtures were vandalized within a few months of its construction.[104] The only escape building that had been left intact was located next to the village administration office (Geuchik Office). It functioned as community multipurpose facility and was maintained regularly under the coordination of the Geuchik Office. This kind of multifunction facility later became the preferred solution for escape buildings, as this arrangement addresses operational and maintenance issues (Fig. 6.3).[105]

Figure 6.2: One of three escape buildings in Banda Aceh had deteriorated in many places due to lack of maintenance

Figure 6.3: Tsunami Disaster Mitigation Research Center Building, which also functioned as an escape building

The many problems in the Aceh reconstruction projects as well as in efforts to develop new systems for mitigation have revealed the outcomes of programs in which human vulnerability is approached from a utilitarian perspective. Any program designed to reduce vulnerability tends to ignore the social, cultural, and political context of the locality in which it is implemented. There were cases from previous large-scale disaster reconstruction projects in which similar problems had emerged; these could have provided important lessons for planners in Banda Aceh.

The experience of Hurricane Mitch in Central America 1998 validates the notion of socially constructed disasters. Risk reduction and hazard mitigation strategies must address the underlying practices that contribute to vulnerability. If they do not, response and reconstruction policies are likely to perpetuate the very disasters that should be avoided. Instead of helping people to understand and ameliorate the root conditions of disaster, humanitarian aids actually perpetuate and worsen the living conditions of survivors (Blaikie et al., 1994; Comfort et al., 1999).

In this case, the role of government and the political context of disaster recovery have a significant influence. During post-disaster reconstruction following the 1976 Great Tangshan Earthquake in China, this factor accounted for why the situations before and after the quake were relatively obscure. Assessments of the level of destruction and fatality were unclear to the extent that international agencies had no idea how much help was needed. On the other hand, the government itself had refused to accept international aid (Li, 1991; Spence, 1999).

The Turkish experience offers a better case of lessons learned concerning how to deal with the social and cultural context of post-disaster recovery. Located in one of the world's high-risk earthquake zones, Turkey underwent a series of disaster recovery efforts. These recovery experiences taught most of the agency recovery works not pay too much attention to a technological approach. Instead, a social organizational approach began to emerge as the main driver of the recovery process and was widely implemented in the latest post-disaster recovery

following the Izmit earthquake (Corbacioglu & Kapucu, 2006).

Many agencies in charge of reconstruction projects after the tsunami in Aceh, including BRR, the coordinating agency, had also attempted to implement organizational approaches as the main drivers of their projects, yet they had encountered numerous challenges. The experiences of Aceh were a testing ground for the massive application of community-driven development, which is meant to be the backbone of a sustainable development effort by the people themselves. Particularly in the housing reconstruction sector, there had been growing concern about higher quality finished products, more integration of housing with residential infrastructure, and additional livelihood support, as it is not only habitat that matters, but also reconstruction of lives and communities (Steinberg, 2007).

All of these efforts to place more responsibility for rebuilding the built environment back on the people indicated growing awareness of the critical role of an organizational approach. In the Aceh reconstruction, this approach was mostly represented by a community-based reconstruction program that had been declared in the Master Plan of Reconstruction as the main driver of any reconstruction program. However, the unpreparedness of stakeholders to implement a community-based approach led to contradictory actions, as evidenced in what happened to the deteriorated escape buildings or people's changing attitudes toward the "gotong royong" tradition as a result of the implementation of a cash-for-works program.[106] Efforts to tackle vulnerability by increasing people's capacity seem to have been oversimplified and reduced to dealing with technical issues.

For some technologies, the appropriate safety culture may be totally lacking. In such cases, there is not the necessary acceptance of certain values, norms, and beliefs about the use of technology. Quarantelli gave an example of how technology implementation without social and cultural awareness of the context becomes useless. In many cases in developing countries (although the problem is not confined to them), one finds fire-exit doors in public or commercial buildings such as hotels or auditoriums that were correctly built according to appropriate specifications yet are locked, blocked, hidden behind heavy drapes, or otherwise made totally unusable. In those situations, one sees that the application of correct architectural and engineering principles was not accompanied by necessary conceptions of safety and accident prevention, which are implicit social necessities for the appropriate use of fire technology. In such settings, the greater presence of any technology cannot accomplish much. In another situation more directly related to disaster preparedness, an emergency management agency had bought many of the most up-to-date computer hardware and software that could be used in the event of a disaster but turned to DRC[107] to ask in what ways they could be used for such planning. The related culture could not be bought in the manner that the technology was and therefore was absent (Quarantelli, 1997).

There are many examples from history that demonstrate that technology does not determine the behavior or human beings and that the reverse is often true (Bijker et al., 1987). We agree with those who argue that the rates, directions, and specific forms of technological change and its effects are social as well as technical.

6.2.2 Vulnerability, capacity, and disaster resilience

Vulnerability and Capacity

Bankoff et al. suggested there are at least four pathways to take in comprehending the complexity of vulnerability. First, because vulnerability is politically determined—both in policy

making and in labeling who is vulnerable—there is a need for critical policy review. Second, in order to address vulnerability, we need to improve the ways in which we model and measure it. Third, disaster management globally is dominated by the military, both in terms of planning and response. There is a greater need to resource and empower communities to manage and respond to disasters. Finally, power must go to the people. Nothing will change unless the social and political structures that marginalize people and reinforce their vulnerability are overthrown. Change to existing conditions of vulnerability will not occur passively (Bankoff, Frerks, & Hilhorst, 2004).

Wenger and Weller specifically related the neglect of social and cultural issues to the failure of attempts to fix human vulnerability. Typically, much of the activity and organization utilized by a community in responding to a disaster emerge during the actual stress of the disaster situation. However, the shape of disaster response depends in part upon a community's past experience with similar events. That is, previous community disaster activity provides some residue of learning that is applied to subsequent situations. When these residues are preserved, we can speak of a community possessing a "disaster subculture." Preservation, therefore, is the essence of a disaster subculture. One the one hand, the residues of learning are applied to aid in the community's survival. On the other hand, the subculture itself is preserved through time by the transmission of its elements to new community members. The true indication of the existence of a disaster subculture, therefore, is the perpetuation of successful patterns of adaptation to the disaster context through socialization. These subcultures appear to develop in many communities that experience repetitive impacts from specific disaster agents (Wenger & Weller, 1973).

The International Research/Development Project (IRDP), a collaborative program of research that has examined the relationships and links between relief and development, has documented several disaster recovery projects around the world as lessons for future planning and implementation programs. The hallmark of their work is a model of analysis named Capacities and Vulnerabilities Analysis (CVA). This model has pioneered a people-centered and dynamic model of analysis of disasters and their impacts, which combines insights from social analysis with practical means of identifying needs in the immediate and longer term. The premise of this model is that people's existing strengths and weaknesses influence the impact that a crisis has on them and affect the way in which they respond to it. The CVA framework is notable for requiring an analysis of not only the physical and material capacities and vulnerabilities of a community at risk, but also social relationships and the psychological realm (Fig. 6.4). Development in this instance is defined as the process by which vulnerabilities are reduced and capacities are increased (Anderson & Woodrow, 1989).

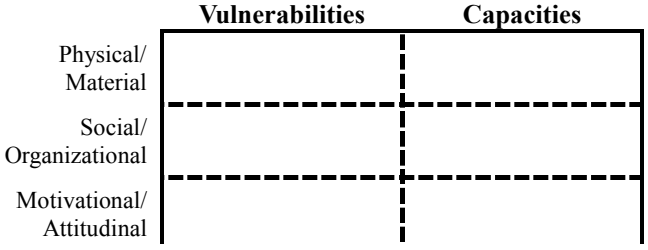


Figure 6.4: Capacities and Vulnerabilities Analysis Matrix (Anderson & Woodrow, 1989)

In the rapidly changing and unpredictable environment of a disaster, it is also important to track interactions between different categories of analysis. Analysis can be applied at different levels and adapted to different scales of event. The CVA is now well known and widely used. While relatively easy to employ, it is not simplistic; it can map not only the factors in a complex situation, but also the relationships among them. Further, the CVA is not prescriptive. It does not dictate what to do in any given situation. It is only a diagnostic tool. However, as a tool, it has power to organize and systematize knowledge and understanding of a situation so that we can recognize important factors affecting people's lives and more accurately predict the impact of an intervention on their internal resources (Anderson & Woodrow, 1989). If we place this within Schön's framework of reflection in action, the CVA is a "problem setting tool" for an abnormal situation—a disaster recovery situation.[108]

Disaster resilience

Another term related to the concept of capacity is seismic resilience, which is defined as "the capacity to adapt existing resources and skills to new situations and operating conditions." The term implies both the ability to adjust to "normal" or anticipated levels of stress and to adapt to sudden shocks and extraordinary demands. In the context of hazards, the concept can be thought of as spanning both preventative measures that seek to avoid hazard-related damage and losses and post-event strategies designed to cope with and minimize disaster impacts. The objectives of enhancing seismic resilience are to minimize loss of life, injuries, and other economic losses—in short, to minimize any reduction in quality of life due to earthquakes. Seismic resilience can be achieved by enhancing the ability of a community's infrastructure (e.g., lifelines, structures) to perform during and after an earthquake, as well as through emergency response and strategies that effectively cope with and contain losses and recovery strategies that enable communities to return to levels of pre-disaster functioning (or other acceptable levels) as rapidly as possible (Comfort, 1999).

Resilience can be understood as the ability of a system to reduce the chances of a shock, to absorb a shock if it occurs (abrupt reduction of performance), and to recover quickly after a shock (re-establish normal performance). More specifically, a resilient system is one that shows the following effects(Bruneau, 2003):

- Reduced failure probabilities
- Reduced consequences from failures, in terms of lives lost, damage, and negative economic and social consequences
- Reduced time to recovery (restoration of a specific system or set of systems to their ''normal'' level of performance)

A broad measure of resilience that captures these key features can be expressed, in general terms, by the concepts illustrated in Fig. 6.5. This approach is based on the notion that a measure, Q(t), which varies with time, has been defined for the quality of the infrastructure of a community. Specifically, performance can range from 0% to 100%, where 100% signifies no degradation in service and 0% indicates that no service is available. If an earthquake occurs at time t_0, it can cause sufficient damage to the infrastructure that the quality is immediately reduced (from 100% to 50%, for example, as seen in Fig. 6.5). Restoration of the infrastructure is expected to occur over time, as indicated in the figure, until time t_1, when it is completely repaired, as indicated by a quality of 100% (Bruneau, 2003).

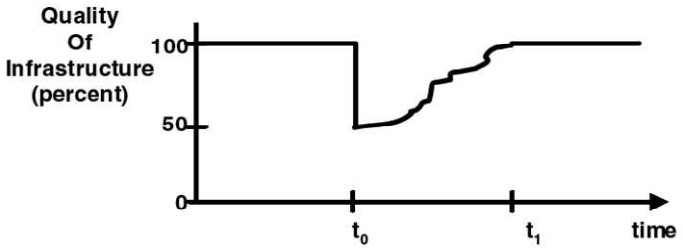


Figure 6.5: Measure of seismic resilience—conceptual definition (Bruneau, 2003)

Resilience can also be conceptualized as encompassing four interrelated dimensions: technical, organizational, social, and economic. The *technical* dimension of resilience refers to the ability of physical systems (including components, their interconnections and interactions, and entire systems) to perform at acceptable/desired levels when subject to earthquake forces. The *organizational* dimension of resilience refers to the capacity of organizations that manage critical facilities and have the responsibility for carrying out critical disaster-related functions to make decisions and take actions that contribute to achieving the properties of resilience outlined above—that is, that help to achieve greater robustness, redundancy, resourcefulness, and rapidity. The *social* dimension of resilience consists of measures specifically designed to lessen the extent to which earthquake-stricken communities and governmental jurisdictions suffer negative consequences due to the loss of critical services following earthquakes. Similarly, the *economic* dimension of resilience refers to the capacity to reduce both direct and indirect economic losses resulting from earthquakes. These four dimensions of community resilience—technical, organization, social, and economic (TOSE)—cannot be adequately assessed by any single measure of performance. Instead, distinct performance measures are required for different systems under analysis (Bruneau, 2003).

For example, Comerio pointed out that one social measure is community performance, which involves the community's capacity to provide housing for residents. Enhancing construction practices and retrofits make single and multifamily housing more resistant to earthquakes, but since dwellings can also become uninhabitable due to lifeline service disruption, enhancing the earthquake resistance of lifeline systems such as water and electrical power also contributes to resilience with respect to the housing supply. Following an earthquake, the rapid provision of emergency shelter and short-term housing for earthquake victims, rapid responses on the part of lifeline organizations to restore services to residential dwellings, and government programs and insurance payouts that facilitate housing reconstruction further contribute to community resilience. These measures can be quantified, making it possible to assess communities according to their ability to mitigate housing damage and respond effectively and in a timely manner to disaster-induced housing losses (Comerio, 1998).

6.2.3 Recovery complexity and disaster resilience

Haas et al. once argued that the recovery process involves four sequential phases termed emergency response, restoration of the restorable, reconstruction (I) of the destroyed for functional replacement, and reconstruction (II) for commemoration, betterment, and development. Each phase lasts approximately ten times longer than the previous stage (Haas et al., 1977). However, since they outlined these phases, there have been many researches based on recovery cases all over the world that have demonstrated that the reconstruction process is much

more complicated than merely categorizing the progress of the recovery process based on technical or physical achievements. Any construction project that occurs as part of disaster recovery could happen within any one, two, or three of those sequential phases. In order to understand how post-disaster reconstruction has brought changes of the variables in construction practice, it is helpful to put the common sequential construction process into the framework of recovery. Fig. 6.6 illustrates how different construction projects have different disaster resilience and capacities-vulnerabilities consequences.

The comparative study of construction projects illustrated in Fig. 6.6 (Projects A, B, C, and D) is taken from sample projects that were part of the reconstruction effort in Banda Aceh. They are expected to be generic representations of various projects situations. Social, cultural, technological, and economic considerations of the context are complicated due to the resilience and the vulnerability of each case, though Projects A, B, C, and D were located in the same area (Fig. 6.7). Project A and Project B had a similar residential function. Project C was a water and sanitation project that would serve Projects A and B. Project D was a street rehabilitation and upgrading project that would also serve Projects A and B. In Fig. 6.6, one could see the extreme differences in the complexity of the four projects based on the approximate resilience of each.

The event t0 is the moment when a tsunami event destroyed all structures at the location. t1, t2, t3 and t4 are consecutively the moments when the housing for Projects A and B, water and sanitation for Project C, and the street for Project D were restored to normal conditions. Based on field observation as well as field interviews with project stakeholders including beneficiaries, I conclude that the final condition of all projects was of better quality than the condition pre-tsunami.

Next to the disaster resilience graph of each project is a correspondent vulnerabilities capacities (CVA) matrix both before the tsunami and after the reconstruction was completed. Based on the matrix, we can observe that not all projects decreased their vulnerability and increased the capacity to withstand disaster. Reconstruction does not entail the improvement of communities as well as making buildings and infrastructure resistant to future disasters.

Project A, with physical quality after the tsunami disaster less than 50%, was able to achieve recovery earlier than Project B, for which the level of destruction was less severe. This situation was able to happen because the element of capacity in Project A served to accelerate the recovery process. In other words, the capacity factor of Project A was larger than that of Project B. However, high speed of physical recovery does not guarantee high quality. New houses in Project A were found to deteriorate faster than anticipated (see Fig. 5.9). Further analysis of what happened in Project A revealed that the technology applied to the housing was not feasible. Due to the limited availability of building materials, especially timber, during the early reconstruction period, the agency that managed Project A, with the agreement of the beneficiaries, decided to use coconut wood that was ubiquitously available in the area as the main building material. However, the contractor didn't master the construction technology for this material. On the other hand, Project B was quite slow. There was no particular agency available to manage the reconstruction during the early phase of recovery. The reason was not that no agency was willing to take care of the project. The beneficiaries of Project B, led by their Geuchik (village leader), were quite selective in choosing the right agency to be their partner in the rebuilding process. Partnership and community-based development were the main drivers of the process. The result, though Project B took longer than Project A, has been quite satisfactory for all stakeholders.

When Project A and Project B were already under construction, Project C and Project D, which were both infrastructure projects, had not finished the bidding process. Thus, Project A

and Project B were conducted without adequate infrastructure support. Additionally, when Project C and Project D were under construction, numerous problems occurred in the field. The street rehabilitation (Project D) was finished while the infrastructure system (Project C) was still under construction. There was no coordination between these two projects; therefore, part of the newly finished street had to be demolished to allow for construction of the water and drainage pipe system for Project C. Ironically, when the entire water and sanitation project in this location had been finished, residents still could not get clean water in every house. The problem was that there was a shortage of water to be distributed throughout the system in Banda Aceh.

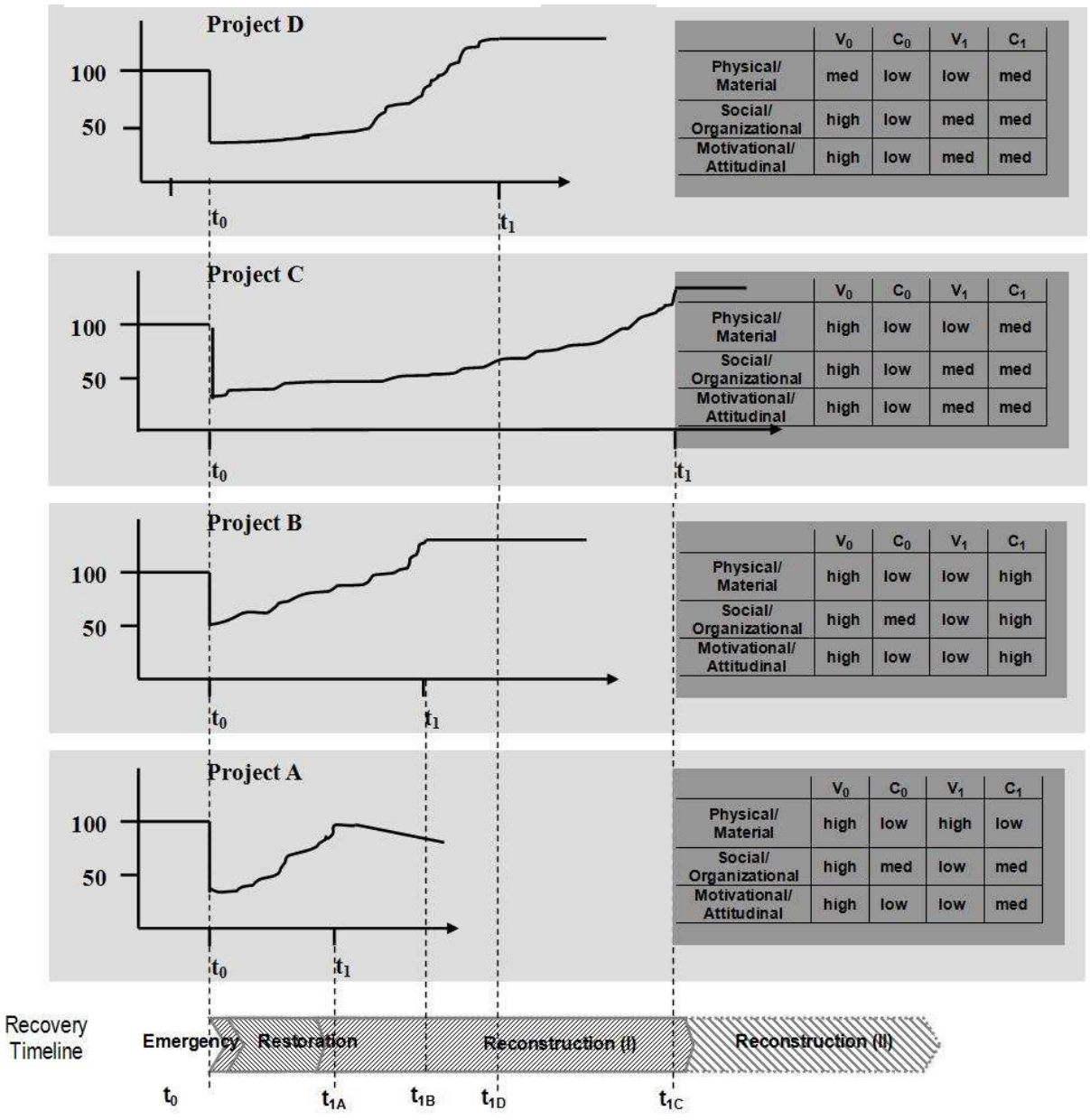
It is difficult to expect a positive result from the reconstruction process when there is such lack of coordination among projects. My qualitative analysis of the disaster resilience of the four projects, as indicated in the CVA matrix in Figure 6, describes how the reconstruction process could not fix the vulnerabilities and capacities of each project to the expected level. If before the disaster happened, local people and the supporting infrastructure experienced high vulnerability along with low capacity to address the vulnerability, the ideal reconstruction process should have been able to place people at a level of low vulnerability and should have possessed high capacity to maintain this level of vulnerability. The CVA matrix in Fig. 6 indicates that among the four projects, only Project B successfully accomplished this goal. Project A failed mainly in its physical/material aspect due to the serious failures caused by coconut wood based construction. Project C and Project D both achieved much better quality for the neighborhood streets and infrastructure than existed before the tsunami. However, both projects could not demonstrate a significant improvement in their capacity to reduce potential local vulnerability. The reconstruction process did not cover the scenario of operation post-reconstruction, such as maintenance aspects. Meanwhile, public facility maintenance had been a long-unsettled problem in the local context. The case of the escape building, as described in sub-chapter 6.1.1, is the most relevant example of this pattern.

The effort to increase capacity to adapt existing resources and skills, along with the effort to reduce vulnerability as an inherent element of the reconstruction process, is the fundamental factor that distinguishes the different measures of resilience for the four projects. In other words, the common technical, organizational, and attitudinal variables of a routine construction process must be placed within a capacity-vulnerability analysis.

6.2.4 Toward collaborative disaster recovery

Creating disaster resilience was not a simple task. The goal sounds straightforward: reducing people's vulnerability and increasing their capacity to face any potential disaster. However, given the four cases previously discussed, implementation requires a strictly coordinated reconstruction process among projects as well as complicated process within each project. This condition is essentially a reflection of what I have discussed in Chapter 2. We could indicate what kind of coordination works best in a particular context based on the organizational level at which interaction between groups or individuals occurred. In general, coordination works on the macro level as the mechanism of interorganizational management among the four projects. Meanwhile, collaboration is effectively conducted on the micro level as a management tool for each project.

Project's disaster resilience graph **Project's CVA analysis matrix**



	V_0	C_0	V_1	C_1
Physical/ Material	med	low	low	med
Social/ Organizational	high	low	med	med
Motivational/ Attitudinal	high	low	med	med

	V_0	C_0	V_1	C_1
Physical/ Material	high	low	low	med
Social/ Organizational	high	low	med	med
Motivational/ Attitudinal	high	low	med	med

	V_0	C_0	V_1	C_1
Physical/ Material	high	low	low	high
Social/ Organizational	high	med	low	high
Motivational/ Attitudinal	high	low	low	high

	V_0	C_0	V_1	C_1
Physical/ Material	high	low	high	low
Social/ Organizational	high	med	low	med
Motivational/ Attitudinal	high	low	low	med

Note:

V_0, C_0 = Existing vulnerabilities and capacities before the tsunami or at t_0

V_1, C_1 = Vulnerabilities and capacities after the particular reconstruction project finished or at t_1

Figure 6.6: Generic sample of disaster resilience of several projects at the same location

Figure 6.7: Project A (top picture, housing), Project B (bottom picture, housing), Project C (water and sanitation, under construction), and Project D (street rehabilitation, under construction)

The question is how this condition would apply in a disaster recovery context such as the four projects previously discussed. Both coordination and collaboration would be valuable if they could improve the vulnerability-capacity of local housing and infrastructure within the context of disaster resilience. Presumably, the poor disaster resilience of most of the projects, as indicated on the CVA analysis described in Fig. 6, could be attributed to lack of coordination as well as collaboration.

Coordination, as a form of collaboration on the macro level, failed particularly due to the absence of a coordinator or facilitator as the main driver. BRR, which was expected to take this role, did not have any substantial experience in this regard and is still in a learning stage at the moment. The agencies for the projects never negotiated in cases of potential common interest.

They mostly focused their work on the technical aspect of capacity and vulnerability analysis. As a result, several problems emerged not long after each project's completion. The unanticipated rehabilitation of the newly rehabilitated street, as indicated before, to give way to the drainage pipeline system was one example. This kind of problem could have been avoided if an entire CVA analysis had been implemented. However, this does not mean that project participants must know or be able to master CVA analysis.

The three aspects—technical, organizational, and attitudinal—could be referred to many other development approaches and strategies, and should have been adopted in any development program recently recognized as sustainable development.[109] The Master Plan of Aceh and Nias Rehabilitation and Reconstruction mentioned some principles that were basically derived from sustainable development, in which a holistic and integrative approach is the foundation. However, facts from the field did not reflect these principles. The implementation strategy was never planned deliberatively. It is true that there was always some attempt to include all stakeholders in the planning process. In the context of fixing disaster resilience within the framework of CVA analysis, these steps seemed to be part of organizational and attitudinal efforts. Yet the entire process indicated that people were trapped by physical or technical aspects of the reconstruction. People measure project accomplishments mainly through the quality of houses and infrastructure. Consideration of how these structures would be sustainable, or, in the context of disaster resilience, how they could reduce the vulnerability and increase the capacity of the locals in the long term, was missing over the course of the projects. To fix this situation in a manner consistent with the CVA analysis framework, participants need to practice a deliberative planning and design process. A collaborative work environment should be an ideal option to respond to that challenge.

The mechanism of working relationships among the four projects is an example of the complication of reconstruction projects. Figure 6.8 depicts a scheme of the organizational relationships among the four projects. By referring to the understanding of collaboration in relation to the organizational context that I discussed in Chapter 2, I see the potential to differentiate the organizational relationships among the projects into those on the coordination level and those on the collaboration level. On a macro level, coordination would be the ideal circumstance to manage organizational working relations among the projects. BRR itself would act as the coordinating agent. On the micro level, collaboration, if it existed, would be best practiced within each project's organization. Each project was essentially composed of several groups of stakeholders. The exception was Project D (street rehabilitation), for which the implementing agency of each project basically acted as the liaison agent of its project within the whole project's coordination.

In many elements of the reconstruction protocols, whether issued by BRR or internally published within each NGO, there had been strong emphasis on participatory practice widely involving the local community. Nevertheless, actual practice indicated neglect of community-based principles. The implementation was just a formality that usually used the term socialization for the event. On this occasion, people were invited to listen to a presentation on neighborhood planning, or, in popular local terminology, village planning. Ironically, most of the time, people could not capture a full idea of this planning process. They were not familiar with the technical terms or the presentation technique used in this kind of forum.[110]

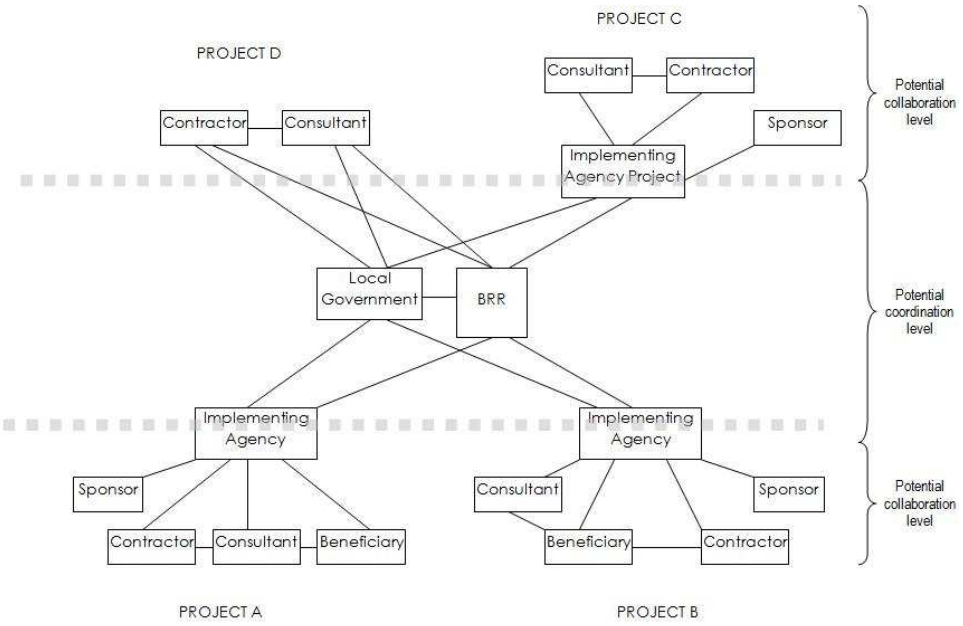


Figure 6.8: Scheme of organizational relationships among projects and within each project

The idea of a participatory planning process was not successfully implemented. The practice did not evolve based on a deliberative planning and design process. Its participants, especially the professionals who were working for the agencies, were not prepared for a time-consuming and exhaustive process. In relation to the aspects of fixing disaster resilience within the framework of CVA, this process actually becomes the core of fixing organizational and attitudinal issues. Sustainability of physical structures at a site can only be accomplished as long as these two other aspects are addressed in the process consistently. This can be achieved by building a genuinely collaborative environment during the reconstruction process.

The main obstacle in developing a deliberative planning and design practice is the unavailability of practitioners who could act as drivers or facilitators of the whole process. Project B (housing reconstruction) had an advantage over the other projects (A, C, and D) due to the presence a group of practitioners who already had significant experience in managing community-based development projects as part of the implementing agency. In contrast, most of the practitioners working on reconstruction projects in Aceh either for an implementing agency or for an independent consultant had inadequate skills to conduct the mandated participatory planning process. As a result, the real common interest could not be dug out. The negotiation, if any, that occurred during the course of the project was developed mostly over tangible aspects of the project. That is why housing projects were much more popular among sponsors and agencies than other type of projects, such as those related more directly to recovering survivors' livelihood.

Eventually, a deliberative planning and design process would guarantee that all beneficiaries obtain the benefit of reconstruction in a fair manner. In the context of disaster resilience, this cannot be accomplished if all three aspects of CVA are not taken into consideration equally during the process. Putting too much priority on building houses and infrastructure without simultaneously increasing people's capacity to get a better livelihood than

they had before the tsunami does not advance the goal of building back better.[111] People of low-income families feel the most serious implications. On many occasions during my field interviews with beneficiaries from low-income groups, I discovered disappointment due to lack of livelihood support. These individuals were on their own once they moved into their new houses.

Most of the reconstruction projects that finished quite early left the poor of the old neighborhood poor. In this case, disaster resilience reflects a wider socioeconomic gap among beneficiaries than was evident in pre-tsunami conditions. People from middle and higher income groups usually had their own safety net. The aid program, however, did not differentiate its allocation between poor beneficiaries and rich beneficiaries. The program would just empower the rich to restore their previous livelihood better and faster. The wider the gap, the more vulnerable the process at stake, as well as the more challenging it was to achieve a collaborative process. In this situation, the poorer residents usually had the smaller voice to express their interests.

Issues related to what would happen to people after the project's completion were never integrated during the planning process. The question of how people would get along with new houses and infrastructure that are physically and technically much better than their previous properties was never deliberated. A better house means higher demands for its maintenance. Thus, sustainability became the real critical issue. Meanwhile, people of low income had totally lost the resources of their livelihood before the tsunami. Village planning,[112] as a popular term for the planning process in the Aceh reconstruction, was more an attempt to map future physical structures in the neighborhood—the houses, public facilities, and infrastructure—than a holistic plan that included all aspects of people's livelihood.[113] (See Fig. 6.9.)

Figure 6.9: An example of village planning map of Labuy Village in Aceh Besar (BRR Book Series: Breakthrough, 2009) – Notice that all stakeholders had to confirm their approval of the plan by signing the site plan.

Chapter 7
Conclusion

There are basically three main issues that have been investigated in this dissertation. Each represents three subject areas elaborated based on various theories in relation to issues of collaboration, which include: social organizational issues, planning and design process related issues, and housing and disaster resilience issues.

Investigation on social organizational issues is basically directed to determine macro organizational and micro organizational context of a project in order to see how collaboration plays its role to streamline the reconstruction process. On the macro level of the project there is small room for collaboration regarding the wide range of organizational context to be managed, such as a government ministry, or a UN agency, that already had its own complexity of organization within its body. Collaboration is more a political term here. Coordination is actually the more realistic representation of the working together situation, in which an organization or its representation acts as the coordinating agency. In Aceh reconstruction case, this role should be taken by BRR. One important issue here is to find the characteristic of coordination that would facilitate collaborative process at macro level, the level where real collaboration is expected to emerge.

On micro organizational level, the investigation resulted in four propositions:

Proposition 1: Project teams that develop shared leadership mechanisms in conducting their tasks early in or soon after the forming stage will experience more effectiveness in achieving collaborative processes than teams that maintain traditional notions of leadership.

Proposition 2: Collaborative work within a project team is characterized by information sharing among members aiming to avoid unanticipated problems that might arise during the construction process.

Proposition 3: The greater a member's knowledge of the other members' social and cultural attributes, the less conflict that will arise regarding team performance, which increases the extent of collaboration.

Proposition 4: The members of a design team in which tasks are fairly distributed between local and foreign members based on education and tenure will experience a higher level of trust than members of teams in which this policy is not practiced. Consequently, the greater the disparity in the reward structure between local and foreign staff, the less the likelihood that team collaboration will be generated.

Planning and design process of each project are investigated with the intention to identify the changing issues or common interest of each participant during the entire continuum of reconstruction since initiation all the way thru project completion. As it has been indicated in the previous chapters most of agencies of housing projects, in some cases including the contractors, were not involved with the whole process. There was a shift of stakeholders' interest over the recovery course from humanitarian issue to self-organizational centered issues. This clearly affects how frequent collaborative process emerges during a particular project timeline. It is also important in the investigation on the design subject to see how architectural related issues emerged, if really occurred, during the process, and how prospective its role as a principal negotiated interest in the context of collaborative process.

Investigation on housing and disaster resilience issues are focused on the fairness of reconstruction project in dealing with beneficiaries, who came from various level of social

economic background. My analysis in the previous chapter indicates that disaster resilience could also be viewed as a reflection of social economy gap between beneficiary and other stakeholders compared at the beginning and at the end of recovery process; the wider the gap the more susceptible/vulnerable the process at stake as well as the more challenging situation to achieve collaborative process. Related to this issue is land tenure. The poor usually didn't own a piece of land that became the basis for a survivor to be eligible as beneficiary. It seems here that land title was really matter in housing reconstruction project in Aceh. Meanwhile on my analysis in the previous chapter it had been indicated that land title was not everything in housing development especially in the context of housing revitalization for low income groups in a developing country, a context that was quite relevant with the reconstruction project setting in Banda Aceh. The last issue that has been investigated within this subject is village planning. The main discussion is to see whether the village planning process to a certain extent had adopted a principle of deliberative planning and design process that is basically the heart of collaboration, or it is just a mundane participatory process. The focus is on the question whether the process included all CVA (Capacity-Vulnerability Analysis) aspects, technical/physical, social/organizational, and motivational/attitudinal in planning and design process.

In the context of disaster resilience, I would argue that fixing people's vulnerability and capacity had to be executed through deliberative village planning. All stakeholders needed to sit together within a collaborative environment in order to successfully uncover people's common interest as the gist of sustainable recovery's product (see Fig. 7.1). Stakeholders' interaction in the current model of village planning should be extended to accommodate the possibility of examining participants' interest not only in a technical/physical context, but also in a social/organizational context and an individual/attitudinal context. With such a method, participants could reduce the possibility of dealing with artificial issues. Issues that sound plausibly important, such as the significance of building permanent house and putting this as the first priority, should be critically examined. Many cases of housing problems that manifested not long after project completion demonstrated that there was an unclear standard for permanent housing. The houses of Project A as discussed in chapter six were a good example. Temporary shelters in the same location had proven more livable than the permanent houses (see Fig. 7.2).

In many cases, what beneficiaries needed was a livable shelter that was adequate to meet the functions of a house while they rehabilitated their livelihood little by little. Once they reached the financial capability to build a more comfortable house, they would have built it.

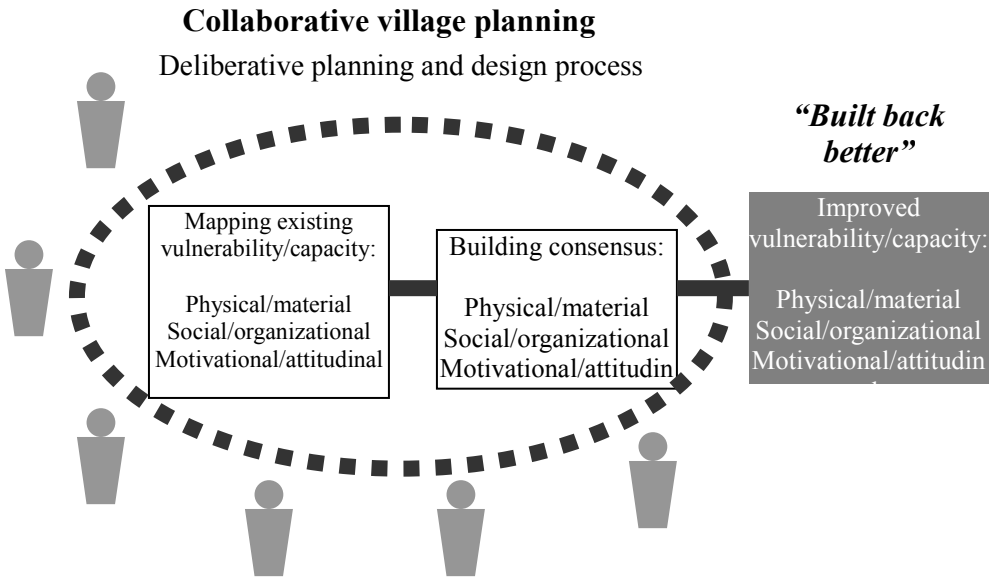


Figure 7.1: Proposed ideal scheme of collaborative environment organizational relationship

Figure 7.2: Permanent house (left) and temporary shelter (right) in Gampong Jawa Banda Aceh

Notes

[1] Collaboration or *kolaborasi* is in an Indonesian term of describing people working together during the recovery process that was commonly used in print and in everyday communication. I frequently encountered usage of this term by my interviewees during my field research.

[2] Acehkita (2006a). "BRR Harus Bertanggungjawab" (BRR must be responsible), *http://www.acehkita.com*, May 2006. Acehkita (2006b). "Ratusan Rumah BRR Tak Layak Huni" (Hundreds of BRR's House are uninhabitable), http://www.acehkita.com, May 2006.

[3] Kompas, 'Pemerintah rampungkan cetak biru rehabilitasi dan rekonstruksi Aceh' (24 Maret 2005).

[4] Suara Karya, 'PBB dan pemprov NAD mulai bahas "cetak biru" Aceh' (21 Pebruari 2005) ; Kompas, 'Rencana tata ruang Nanggroe Aceh Darussalam mulai disosialisasikan' (2 Maret 2005).

[5] Kompas, 'Rencana tata ruang NAD mulai disosialisasikan' (2 Maret 2005); Kompas, 'Menko Kesra: Segera sosialisasikan cetak biru pembangunan Aceh' (26 Maret 2005).

[6] 'Blue Print Aceh pascatsunami' (24 maret 2005). Retrieved from http://www.acehkita.com.

[7] Kompas, 'Perpres revisi master plan BRR diterbitkan' (28 Juli 2008).

[8] Kompas, 'Masyarakat Aceh minta pemerintah lebih terbuka' (29 Maret 2005); Suara Pembaruan, 'Banyak asumsi dasar "Blueprint" Aceh salah' (1 April 2005).

[9] Kompas, 'Kami perlu tanah yang menyimpan kenangan ini…' (28 Maret 2005).

[10] Kompas, 'Rekonstruksi salahi cetak biru' (26 Januari 2006); Suara Pembaruan, 'Penyimpangan tata ruang terjadi pada rehabilitasi Aceh dan Nias' (16 Januari 2006).

[11] Serambi Indonesia, 'Tuntut rumah bantuan korban tsunami unjuk rasa lagi ke BRR: Dialog berakhir buntu' (24 Januari 2009); Kompas, 'Korban tsunami tinggalkan Banda Aceh' (2 Februari 2009); Kompas, 'Bangun pendidikan yang andal' (27 Desember2009).

[12] Ratusan rumah bantuan tidak layak huni (9 Mei 2006). Retrieved from http://www.acehkita.com; Ada yang dapat rumah enam unit (15 Mei 2006). Retrieved from http://www.acehkita.com.

[13] Suara Karya, 'Lebih baik pulang ke desa daripada tinggal di barak' (9 Maret 2005); Koran Tempo, 'Agar warga tak tertipu' (22 Maret 2006).

[14] Puluhan rumah BRR tak layak huni (30 Mei 2006). Retrieved from http://www.acehkita.com. Besides its primary mandate to coordinate rehabilitation and reconstruction, the BRR also had to manage several housing projects due to an inadequate number of implementing agencies.

[15] Kompas, 'Rehabilitasi lingkungan NAD: KLH janji peduli kepentingan warga' (3 Pebruari 2005); Bisnis Indonesia, 'WWF: Menhut agar tagih janji pengusaha kayu' (2 Mei 2005).

[16] Kompas, 'Rekonstruksi Pascagempa Ancam Kelestarian Hutan' (16 September 2009).

[17] The Jakarta Post, 'Activists worry Aceh reconstruction could harm forrests' (February 1, 2005).

[18] New York Times, 'The challenge of rebuilding', (August 6, 2006).

[19] Tsunami refugees might stay in camp until 2007 (2005, November 13). Retrieved from http://ww.acehkita.com . Many critiqued the BRR's policy of prioritizing building permanent housing rather than building livable temporary shelters, a more realistic goal with the resources available in Aceh at that time.

[20] Data from Biro Pusat Statistik (BPS), Statistics Central Bureau (2010).

[21] Bakornas PBP-Depkes-Depsos-Media Center Lembaga Informasi Nasional (LIN), Updated Senin, 31 Januari 2005.

[22] Kompas, 'Tidak sekedar merekonstruksi kondisi sebelum tsunami' (19 Januari 2006).

[23] Kompas, 'Membangun Banda Aceh dari Nol' (2 Mei 2005).

[24] Suara Karya, 'Warga korban tsunami mulai patok batas tanah milik' (9 Maret 2005); Suara Pembaruan, 'BPN sulit tangani klaim tanah di Aceh' (10 Maret 2005); Suara Karya, 'Sulitnya mencari batas tanah pascatsunami' (25 Maret 2005).

[25] The term A/E/C (Architecture/Engineering/Construction) project is used throughout this dissertation to refer to any project in the Aceh post-tsunami reconstruction context.

[26] Serambi Indonesia, 'Wardah Hafidz koordinir demo: Tuntut BPN hentikan pengukuran tanah' (28 Oktober 2005). This case of land re-measurement in Ulee Lheue village is striking, as it involved conflicts among stakeholders at all organizational levels. On the governmental level, the roots of the conflict lay in controversial implementation of the Law on land registry.

[27] As quoted in Pfeffer, 1981, p. 98.

[28] As quoted in Pfeffer, 1981, p. 99.

[29] Weick, 1969, p. 64, as quoted by Pfeffer & Salancik, 2003, p. 72.
[30] Fligstein's lecture Spring 2005, University of California Berkeley.
[31] *Acehkita*: March 30, 2007, "Petugas BRR Dipukuli Massa di Alue Naga" (BRR staff hit by the people in Alue Naga); *Analisa*: March 17, 2007, "Soal Rumah, Koordinasi BRR dengan Pelaku Pembangunan Dinilai Buruk" (About the housing, BRR coordination with the developers viewed badly); *Acehkita*: March 16, 2007, "Ada yang Tidak Tahu Pindah ke Mana" (Some people do not know where to move); *Acehkita*: March 15, 2007, "ARF Temukan Kejanggalan Pembangunan Rumah" (ARF found defects in housing development); *Waspada*: March 9, 2007, "Puluhan Rumah Dibangun Asal Jadi" (Tens of housing were built with low standards). Many other news reports of project problems have been published since the reconstruction projects began.
[32] Based on an interview with a staff member of a local partner of an ADB consultant that manages the Gampong Pande village resettlement project in Aceh, July-August 2006.
[33] The Indonesian Institute of Architects (IAI) has published a guide that provides advice on the professional relationship between architects and their counterparts from abroad to help regulate the architect's professional code of conduct. The aim is to regulate the current practice of multinational design projects in Indonesia, in which more and more foreign architects are assuming the role of main architect of large construction projects. In this case, a local architect usually acted as a local partner in a subsidiary rather than partnership context with a foreign architect. As such, the main architect had no obligation to practice transfer of knowledge, which is strongly recommended in this guide.
[34] Based on several interviews with reconstruction project participants in Banda Aceh, July-August 2006.
[35] Interview with Arie Infanto, July 25, 2007, CARE – Canada Assistant Project Manager Donor/Implementing agency; Interview with Nova, August 1, 2007 – GRC office, Banda Aceh German Red Cross Architect
[36] Kompas, 'Planing yang bikin pening' (20 Februari 2006).
[37] For more details on the implications of *gotong royong* in Indonesian politics, see Bowen (1986).
[38] Local collaboration or *gotong royong* in the Aceh dialect is called *meuseuraya/meurame*.
[39] Interview with Irdus, July 23, 2007 – Pak Idrus' home Gampong Pande; second interview in 2009. Local people (victim) Geuchik Gampong Pande, Beneficiary; Interview with Wardah Hafiz, February, 2010 Uplink Coordinator Implementing agency.
[40] According to field interviews with BRR staff and several village leaders, many projects passed through different project management or different actors for one particular task. In some cases, a project had to be taken over by another sponsor for some reason. In a worst-case scenario, no alternate sponsor was available. The most common cause of this problem was that a contractor had abandoned his or her responsibility for the project, usually due to a lack of available resources.
[41] The category of *successful project* was used in a survey conducted by the University of Syiah Kuala Banda Aceh in collaboration with UN Habitat (2006), in local newspapers and magazines, and in my field interviews with local people.
[42] Based on field interviews with various sources who were directly involved with reconstruction projects in Banda Aceh.
[43] Further explanation of this common phenomena is found in discussion of the architectural design process.
[44] Interview with Marco Kusumawijaya, February, 2010, Architect Implementing Agency.
[45] Online information was maintained by the Media Center, a BRR sub-branch. The BRR was praised for maintaining transparency of its operations, primarily by making information easily accessible to the public.
[46] Interview with Pak Rasyid, July 23, 2007 – Pak Rasyid's home Peukan Bada local people (tsunami survivors) Geuchik Lam Baro Neujid Beneficiary.
[47] The Christian Science Monitor (as transl. on Koran Tempo, 2 Januari 2006), 'Dalam arus tsunami, ada perdamaian' (December 30, 2005).
[48] For an overview of the entire social political, economical and cultural background of the conflict, see articles by Barter (2008), Reid (2004), and Ross (2005).
[49] Interview with Wardah Hafiz, February, 2010, Coordinator Implementing Agency.
[50] BRR tidak ambil alih tugas BRA (26 April 2007). Retrieved from http://ww.acehkita.com; Persoalan reintegrasi jangan dijadikan komoditi elit politik (30 April 2007). Retrieved from http://ww.acehkita.com.
[51] There were seven slates of candidates that each consisted of a governor and a vice governor. A survey conducted before the election indicated that the current governors, Irwandy and Muhammad Nazar, would not win the election. Even though they did not win a majority of votes, Irwandy and Nazar received 36% of the votes while the second-place candidate received 22%. According to election rules, the candidates with the highest percentage of votes, if at least 25%, are the winners, so Irwandy and Nazar won the election. Many attributed their winning to

the fact that they were the only candidates who did not have any connection with the former oppressive government. Irwandy was formerly a faculty member of a state university who later joined GAM and Nazar was an activist of a local NGO. Most of the votes that they received are believed to have come from Acehnese people who suffered from the long conflict between the GAM and the government.

[52] Based on several interviews with BRR staff and informants involved with BRR projects who encountered BRR staff who were representatives of the KPA. During several field interviews, my informants helped me identified these former GAM members at the BRR headquarters.

[53] This mafia-like practice was experienced mostly by contractors, since they are usually in charge of day-to-day operations on project sites. This practice did not occur on every project site. It was most likely to occur on sites that once served as the sites of the GAM's fighting command during the conflict. Interview with Subhan Harahap, July 26, 2007 – Secretariat of AHC Local Contractor Field engineer/supervisor Contractor; Interview with Lundu, Situmorang, Benny, Ucok, July 30, 2007 – Warkop Solong Ulee Kareng, Banda Aceh Supplier, (Sub)Contractor engineer/technical staff/site supervisor Contractor. Other source: Teror (6 Mei 2007). Retrieved from http://ww.acehkita.com.

[54] GAM leaders stated that the GAM actually tended to be a secular movement. Implementation of sharia law was not part of their mission, see: Jakarta Post, 'Sharia Hinders Aceh Development' (21 September 2007).

[55] Suara Karya, 'Ulama Aceh kritik rencana induk NAD' (1 April 2005); Suara Pembaruan, 'Ulama nilai blue print Aceh tidak punya ruh Islam' (11 April 2005); Republika, 'Ulama Aceh: *Blue print* NAD belum miliki 'Roh' (12 April 2005).

[56] San Francisco Chronicle, 'After Tsunami, Islamic Religious Police Gain Power in Aceh' (25 Desember 2005).

[57] The Master Plan had become the principal guide for the recovery. No nationwide law or governmental body had been responsible for any post-disaster emergency situation when the tsunami occurred . The first law on this issue was later enacted in 2007. Based on this law, the first permanent governmental body in charge of post-disaster emergency situations, the State Agency of Emergency Relief (BNPB), was also established in 2007.

[58] Problems regarding low-quality housing built by the BRR made the headlines of local and national mass media outlets during the first years of reconstruction. Analisa, '100 Rumah yang dibangun BRR di Leupung tak layak huni' (23 Oktober 2007); Analisa, 'Hancurnya rumah bantuan di Simeulue akibat lemahnya pengawasan BRR' (3 Maret 2008); AntaraNews,'Greenomics: BRR gagal sediakan pemukiman korban tsunami' (18 Maret 2009); Republika, ''Kinerja BRR tak memuaskan' (20 Maret 2009); Serambi Indonesia, 'Plafon rumah bantuan BRR ambruk' (25 Juni 2009). For further investigation of the overbudgeting of housing issues, see Fasya (2006). For further description of beneficiaries who threatened to tear down new houses, see Kompas, 'Warga memberi BRR waktu 10 hari' (8 Desember 2007).

[59] For more detailed reporting of the incidents, see Petugas BRR dipukuli massa di Alue Naga (30 Maret 2007). Retrieved from http://www.acehkita.com; Warga Alue Naga sambangi BRR (28 Januari 2008). Retrieved from http://ww.acehkita.com.

[60] For more detailed reporting of the second phase of the Ale Naga housing project, see Serambi Indonesia, 'CRS tangani sisa rumah di Alue Naga' (2 September 2008); Serambi Indonesia, 'Korban tsunami Alue Naga: Empat kali puasa tetap di barak' (1 September 2008).

[61] BRR Ingkar Janji, Rumah Asbes Dibakar, Warga Deah Raya Mengamuk (2007, December 11). Retrieved from KP4D.ONLINE (Komite Percepatan Pembangunan Perumahan dan Permukiman Desa), http://news.kp4d.org/REHAB-DAN-REKON/68.html.

[62] Interview with Eric Morris, Director of UN Office of Recovery Projects Coordination. May 2007.

[63] Tsunami waves and the earthquake had destroyed all infrastructure networks in the regions along the West Coast of Aceh Province. This factor, in addition to difficult access to the location, led to the high price of building materials due to transportation costs.

[64] Analisa, 'Soal rumah, koordinasi BRR dengan pelaku pembangunan dinilai buruk' (17 Maret 2007); Analisa, 'Walhi: Bubarkan BRR jika terapkan politik cuci tangan' (30 April 2007); Banyak PR belum tuntas (26 Desember 2006). Retrieved from http://www.acehkita.com.

[65] The BRR paid the highest salary of all agencies involved in Aceh recovery projects, including international agencies, except UN agencies. For the results of further investigation of this issue, see Harian Analisa, 'Serapan anggaran BRR lebih tinggi untuk gaji' (25 Oktober 2007); Source: Serambi Indonesia and PerPres 34/2005.

[66] The BRR's tendency to lose direction in program implementation was another weakness of this agency that could be clearly identified through several indicators, such as its lack of coordination with local governments (see Analisa, 'BRR terkesan tinggalkan azas manfaat dalam membangun' (28 Pebruari 2008), and allocation of significant funding for issues not related to tsunami victim recovery, such as to pay the bonuses of high-ranking

state prosecutors of the regional office (see: BRR Gaji 10 Pejabat Kejati Aceh (31 Oktober 2007). Retrieved from http://www.acehkita.com) or holding grand reception party in Jakarta (see: BRR Gelar "Thank Reception" di Jakarta (21 Januari 2008). Retrieved from http://www.acehkita.com. For further information on issues related to wasteful spending, see Serambi Indonesia, 'Kuntoro "dikerjai" anak buah?' (4 Desember 2007); Suara Pembaruan, 'Korban tsunami kritik kinerja BRR' (19 Januari 2006); Serambi Indonesia, 'Dipertanyakan, rencana penambahan staf BRR' (25 Februari 2006); GeRAK nilai BRR boros (24 September 2007). Retrieved from http://www.acehkita.com; Kompas, 'BRR Aceh-Nias dirikan 10 kantor wilayah' (4 Mei 2006).

[67] Interview with a former BRR staff member in the planning department (July 17, 2007) a BRR staff member in the housing department (August 10, 2007). Even though they were initially satisfied with the high salary for their job, they later became uncomfortable with the work atmosphere. Some subdivisions were overstaffed so that their staff had nothing to do other than appear at the office. For the results of a more detailed investigation of BRR inefficiency, see Effendi, R. (2009, February 2). Kinerja BRR dan nasib korban.

[68] As the Head of the BRR Executing Agency, Kuntoro Mangkusubroto faced much pressure regarding the agency's performance. To the Indonesian government and most large donors, he was the right person for the position, remaining smart and tough despite accusations. To the agency's employees, particularly those on the upper-managerial level, he was also a respectable leader. But to most tsunami survivors who were still living in barracks years after the tsunami, he was the person responsible for their suffering. The central government also faced much pressure from many other agencies regarding the need to replace him with someone more capable. Nevertheless, the President of Republic of Indonesia decided to retain him in his position. This situation can be explained by what Ross and Staw (1986) described as the *escalation procedure*. If the government had replaced him, it would have confirmed that the agency's previous policy on the recovery program had failed. However, it must also be acknowledged that Kuntoro did much to minimize the negative performance of the agency that he led. For further reporting of these issues, see Jakarta Post, 'Kuntoro blends heart, skill' (May 16, 2005); Jakarta Post, 'Turning pledges into reality the main obstacle in Aceh, Nias' (June 11, 2005); Kompas, 'Personel BRR yang tidak optimal akan diberhentikan' (13 Januari 2006).

[69] For a more comprehensive critique of BRR performance, see *Serambi Indonesia*.; Gerak: Rp 285,1 M bantuan Jepang diduga raib. (31 Oktober 2006). Retrieved from http://www.acehkita.com; Masalah rekonstruksi Aceh dilaporkan ke Komnas HAM (3 April 2009). Retrieved from http://www.detik.com; Kompas, 'BPK: Audit umum Aceh janggal' (4 Maret 2006); Koran Tempo, 'BPK tak sanggup audit seluruh bantuan Aceh' (20 April 2006); Jakarta Post, 'Rp 354 billion in Aceh funds unaccounted for, BPK says' (19 April 2005). Non-transparent operations led to much suspicion (corruption) as indicated by Gerak, ICW, and many other NGOs working on supervision of corruption cases in Indonesia. The current system does not have adequate mechanisms as well as resources to monitor the BRR. While several indications had signed some (financial) flaw.

[70] President Clinton, who at that time was a special envoy of the US Government, had mentioned this on many occasions. An editorial in The New York Times critiqued the slow progress of the recovery process after Hurricane Katrina and compared it with the process in Aceh, which it described as outstripping the halting progress made in New Orleans (The New York Times, Editorial: 'The Challenge of rebuilding' (August 6, 2006).

[71] BRR sedang mengusut kualitas rumah 2005 (28 Maret 2007). Retrieved from http://www.acehkita.com.

[72] The most common reason mentioned for the difficulty in addressing the extreme inefficiency in the BRR was that other government ministerial offices were just as inefficient. The BRR is a governmental body directly under the President of the Republic of Indonesia and on the same level as other ministry offices. (Interview with Irwansyah, July 26, 2007 – Human Resources and Institutional Empowerment Operational Manager BRR). A report regarding fraud in projects under BRR coordination describes how bad management practices, such as manipulation of the bidding process, bribing, mafia-like practices, etc., appeared untouchable by BRR supervision. This report can be read in McClymont, K. (2007, October 6). UN turns a blind eye to reports of million-dollar aid fraud. *The Sydney Morning Herald*.

[73] Interviews with Pak Irdus, Geuchik (village leader) of Gampong Pande and Dr. Mirza Hasan, Head of Department of Architecture, University Syiah Kuala Banda Aceh, and member of BRR Supervisory Board. Both described the CFW program as doing more harm than good. People don't really need money. They could survive by themselves. (Kompas, 'Jak beudoh beusaree ta bangun Aceh…' (29 April 2005). For positive recognition of the program, see UNDP Indonesia (2005). *Aceh emergency response and transitional recovery programme: Tsunami one year commemoration report December 2005*. Jakarta, Indonesia: Author.

[74] Source: Banyak NGO belum penuhi janji (7 Oktober 2005). Retrieved from http://www.acehkita.com; ARF temukan kejanggalan pembangunan rumah (15 Maret 2007). Retrieved from http://www.acehkita.com; Aryani, S. (2006, April 11). Questioning NGO accountability. *Kompas*.

[75] The National Bureau of Statistics placed Banda Aceh and several other cities in Aceh Province at the top of the list of cities with the highest inflation rate. The presence of international communities in Aceh during the recovery period was indicated as one of the significant factors that triggered inflation, more information on this issue could be seen on the following report on Analisa, 'Februari 2008, Banda Aceh Inflasi 1.98 Persen' (4 Maret 2008).

[76] Jakarta Post, 'Oxfam suspends operations in Aceh' (March 17, 2006)

[77] Jakarta Post, 'For some NGOs, another disaster means new flashy cars' (August 24, 2006); Kompas, 'Kisah para dewa kemanusiaan di Aceh…' (28 April 2006).

[78] Based on interviews with Pak Irdus, July 23, 2007 and in 2009, a tsunami survivor, housing beneficiary, and village leader (*geuchik*) of Gampong Pande and with Pak T. Dermawan, former chief of Dinas PU Kota Banda Aceh (the Office of Public Works of the City of Banda Aceh). For more reporting of these issues, see Dale, C. J. P. (2005, December 26). Bisnis bantuan di Aceh dan Nias. *Kompas*, and Fasya, T. K. (2008, January 8). Setelah tiga tahun tsunami. *Kompas*.

[79] Kompas, 'Planing yang bikin pening' (20 Februai 2006).

[80] Based on interviews with Sangkot, June 2006, Banda Aceh, a local architect working on an NGO project; Retno Sutrisno, July 22, 2007, AHC secretariat THW Architect Consultant; Yanti Ramdani, July 22, 2007, former AHC ILO consultant, AHC (local NGO) Project Manager; Andrie Irwanto, July 25, 2007 – café, Neusu CARE – Canada Assistant Project Manager Donor/Implementing agency. These interviewees revealed several extreme cases, such as that of a baker from a European country without any experience with disaster recovery work being appointed a project manager.

[81] Mercy's Corps, an international NGO, indicated that its CFW program had been the only source of livelihood for survivors between the emergency and rehabilitation periods, empowered displaced populations to return to their communities, provided productive activities, and gave communities an opportunity to work together. It argued that when implemented on a short-term basis, a CFW can have positive impacts at the individual and community level. For more detailed reporting on this issue, see Doocy, S., Gabriel, M., Collins, S., Robinson, C., & Stevenson, P., (2006). Implementing cash for work programmes in post-tsunami Aceh: Experiences and lessons learned. *Disasters, 30*, 277-296.

[82] For more detailed information regarding the involvement of governmental officials in the BRR IPU, see the BRR Book Series 'Supervision, Eradicating corruption with no tolerance,' published by the BRR in 2009.

[83] Between 1999 and 2004, Indonesia's ranking in the Corruption Perception Index was among the lowest, which indicated that it was one of the most corrupt countries. Most corruption cases were related to governmental projects. President S.B. Yudhoyono, who was first elected in 2004, primarily won the election on his anti-corruption agenda. The Aceh and Nias Recovery Project, which was operating in the first years of his term, was a test of his anti-corruption platform. The BRR's zero-tolerance commitment was an extension of the President's agenda in Aceh. Information on Indonesia's Corruption Index was quoted from the Transparency International Indonesia Press Release, October 20, 2004, as quoted in the BRR Book Series 'Supervision, Eradicating corruption with no tolerance,' published by the BRR in 2009.

[84] One case reported in a local newspaper concerned collusion between PIU staff and local regency governmental officials in which these officials were granted multiple new houses. For further reporting of this case, see Serambi Indonesia, 'Oknum pejabat Aceh Barat kuasai rumah bantuan ganda' (20 Januari 2010).

[85] The following articles, published close to the deadline of the termination of BRR operations, report on local people's worries regarding the take-over of reconstruction coordination: Kompas, 'Pemprov NAD harus siap hadapi kepergian BRR' (18 Desember 2008); Kompas, 'Rp 5 trilyun untuk kelanjutan proses rehabilitasi Aceh' (17 Juli 2008).

[86] The most common cases are married children living with their parents in a large family house, a tradition in Aceh. If the site of the old house was large, making it feasible to build several houses on it, the agency in charge would usually provide the same number of houses as the number of families who lived in the old house. Based on an interview with Ferry Suferilla, a local staff member of Caritas Germany, which helped build new houses for Lhong Villages residents in Aceh Besar.

[87] The forms of fraud used to obtain multiple houses varied. In one case, a married couple declared themselves to be single that they could get two houses. Source: Serambi Indonesia, 'Terungkap di Aceh Barat: Untuk dapatkan rumah, suami istri mengaku duda dan janda' (26 Januari 2010).

[88] See Serambi Indonesia, 'Kuasai 1.048 Rumah bantuan: 400 penerima rumah ganda dilapor ke polda' (9 Pebruari 2009); Serambi Indonesia, '408 rumah ganda: Ada yang kuasai delapan rumah' (10 Pebruari 2009).

[89] For information regarding the complex process of prosecuting beneficiaries of multiple houses, in which land problems became a crucial factor, see Serambi Indonesia, 'Siapkan anggaran untuk selesaikan rumah ganda. (20

Januari 2010).

[90] The residents of fifteen villages located along the coastline in Banda Aceh refused to be relocated to areas far from their former village. The Master Plan had initially mandated that new villages had to be built at least 2 kilometers from the coastline, although most villagers were fishermen. For more detailed reporting of this case, see Kompas, '15 desa berikrar kembali ke kampung halaman' (9 Maret 2005); Republika, 'Ribuan pengungsi berikrar kembali ke desa' (9 Maret 2005); Koran Tempo, 'Sebagian pengungsi menolak tinggal di tempat relokasi' (2 Pebruari 2005); Jakarta Post, 'Acehnese refuse to be relocated to govt barracks' (February 24, 2005).

[91] Interviews with Syamsudin (survivor and beneficiary), whose house was damaged because of poor construction, August 8, 2007, Gampong Jawa, and with Ibu Rohani Musa (survivor and beneficiary), August 8, 2007, Gampong Jawa. Beneficiaries did not ask for much other than compensation for the damage. On the other hand, the NGO in charge denied responsibility for the damage, most of which was due to poor construction work by the contractor. In such a situation, it was almost impossible to investigate these contractors, as most were freelance contractors without any ties to formal or registered bodies. The beneficiaries then prevented the NGO from completing any remaining activities in their villages and threatened the staff every time that they tried to enter the village: "We also got a slightly unwelcome attitude the first time we tried to approach beneficiaries whose house was one of the deteriorated. They suspected we had a connection with the NGO. Almost everyone with an unfamiliar face to the locals would get the same attitude."

[92] Articles in Jakarta Post, 'Acehnese working but for how long?' (April 24, 2006); Kompas, 'Hidup kami ada di sini' (3 Maret 2005); Kompas, 'Pak Surya membangun rumah' (3 Pebruari 2005); Kompas, 'Membangkitkan kembali semangat yang tersisa…' (17 Pebruari 2005); Kompas, 'Mimpi Ismet Nur tentang Aceh yang damai' (18 Maret 2005), reporting from the field regarding how most survivors could have survived on their own. They had incredible survival capability.

[93] This case concerned survivors of villages along the coastline of Banda Aceh. According to the Reconstruction Master Plan, these villages were designated for relocation because they were in high-risk zones. However, the villages mobilized to reject the plan and committed to rebuilding their villages in the original location. The Head of the BRR Executing Agency later verified that these actions had impeded the implementation of BRR plans. For further reporing of this case, see Kompas, 'Warga menyusun sendiri "cabinet"-nya' (9 Maret 2005); Kompas, 'BRR harus tingkatkan partisipasi masyarakat' (9 Januari 2006).

[94] The following chapter provides a more detailed discussion of this topic.

[95] Kompas, '"Kalau cuma begini banyak orang bisa bikin!"' (3 Maret 2005); Suara Pembaruan, 'Forum akademisi tolak "Blue Print" NAD' (12 Maret 2005); Benton, G. G. (2005, February 11). Rebuilding Aceh: A new town with new hope. *Kompas*; Siswanto, A. (2005, March 3). Konsep, proses, dan model rekonstruksi tata ruang Aceh. *Kompas*; Siswanto, A. (2005, February 16). Merekonstruksi tata ruang Aceh. *Kompas*.

[96] Several local governmental officials with whom I spoke confirmed their disapproval of the excessive tolerance with which the Master Plan was revised to accommodate the wishes of survivors, who mostly wanted to return to their old village rather than be relocated to another site as mandated by the Master Plan. Based on my interview with Pak Bahagia, August 7, 2007 – Office, Banda Aceh – Government of NAD Province – Division of Urban and Housing Director Government, and Pak T. Dermawan, Former Chief of Dinas PU Kota Banda Aceh, December 20009.

[97] Based on interviews with Arsi Into and Masjo Kentara, professional planners and architects working with an international NGO, on their experience with community-based planning processes. They revealed that most architects were not equipped with adequate knowledge of, let alone had practice with, community-based processeses. For further indications of this lack of knowledge, see Kompas, 'Penataan ruang pascatsunami harus lebih ketat' (24 Pebruari 2005).

[98] Based on interviews with several prominent architects in Indonesia as well as local architects in Banda Aceh on their concerns with the Tsunami Museum and the reaction of the architectural community to it. Most disappointment stemmed from the involvement of big names in architectural practice in Indonesia as part of the jury or organizational committee, as well as participants and supporters. In the debate conducted within the mailing list of the architectural community in Indonesia during the organization of the competition, I observed that those concerned with the competition and the plan to build the museum were in the minority.

[99] The most common practice of these contractors was to use lower-quality materials than those listed on the contract and to leave the project site right after completion so that they could not be prosecuted for their misconduct when it was discovered during follow-up procedures. Several extreme cases, such as water meters without any water pipes, were commonly found. Visually, a house that looked finished would be found to have many defects. For reporting of these issues, see Analisa, '100 rumah yang dibangun BRR di Leupung tak layak

huni' (23 Oktober 2007); Analisa, 'Hancurnya rumah bantuan di Simeulue akibat lemahnya pengawasan BRR' (3 Maret 2008); Serambi Indonesia, 'Plafon rumah bantuan BRR ambruk' (25 Juni 2009); Serambi Indonesia, 'Rumah korban tsunami diduga ditelantarkan' (5 Februari 2009); Serambi Indonesia, 'Banyak kontraktor telantarkan rumah BRR' (28 Nopember 2007).

[100] This was more popular among black-listed contractors. See: Kompas, '165 kontraktor masuk daftar hitam' (16 Desember 2007).

[101] The most prominent case was that of a national contractor that managed a project in Bitai village. For more details, see the discussion of this case in chapter seven and Serambi Indonesia, 'Waskita Karya agenkan proyek' (8 Februari 2006); Serambi Indonesia, 'Tindakan WK bentuk pemerasan' (9 Februari 2006); Serambi Indonesia, 'BRR cabut "black list" 17 perusahaan' (8 April 2006).

[102] Many complaints regarding illegal security fees charged by an informal local group, most of whose members were former GAM combatants, have been revealed. The BRR had trouble dealing with these groups because another agency, the Agency of Aceh Reintegration (BRA), was responsible for Aceh post-conflict matters. Tsunami survivors who lived in the former GAM base camp area experienced the worst situation, as very few aid agencies were willing to build new houses in that area due to the high security fees (based on interviews with staff of several contractors who worked on the site and dealt with these groups). For reporting of lack of supervision by the BRR, see Serambi Indonesia, 'Penilaian BRR sepihak, Panitia lelang dan lemahnya pengawasan disorot' (4 Desember 2007).

[103] 'Angry Aceh residents disable tsunami warning system' (7 June 2007), Retrieved from http://www.alertnet.org/thenews/newsdesk/JAK317440.htm; 'Tsunami siren stirs anger in Aceh' (7 June 2007), Retrieved from: http://www.news.bbc.co.uk/2/hi/asia-pacific/6730545.stm. During reconstruction projects, several early warning systems were installed throughout Banda Aceh and other areas of the province. Just a few months after the installation was completed, some equipment had been damaged due to vandalism. In addition, there had been a false alarm that had caused panic among locals. Some people speculated that these accidents had triggered the vandalism. Some more extreme damage occurred to the buoyed tsunami warning system that was installed in several offshore areas of the Indian Ocean. Some equipment was found missing or vandalized. Reports on these cases can be read in the following sources: Asiaone News, 'Indonesia to put 3rd tsunami buoy off Sumatra' (19 September 2007); The Jakarta Post, 'President concerned about missing tsunami buoys' (11 November 2008).

[104] During the first year of its operation, there had been many complaints due to the unanticipated function of this building. Its location, which was somewhat isolated, made it a favorite place for illegal dating among youth, which in Acehnese local tradition is considered taboo.

[105] In the context of the Aceh reconstruction, installing a specific building just for escape purposes seemed to be an unwise strategy at a time when there were dire needs for housing for survivors. There could have been a more effective solution in this case, such as attaching the function of escape facility to public buildings, as occurred in the case of a government office of a disaster research facility. The government, through BRR, had encouraged the sponsor of public building reconstruction to take a similar strategy. Some public buildings, mostly mosques, have been assigned as escape buildings if a tsunami emergency is in effect.

[106] See note 75.

[107] DRC = Disaster Research Center at University of Delaware, a research center focusing on the social organizational aspect of disaster, of which Quarantelli is one of the co-founders.

[108] See Schön, (1983), pp. 40. "… with the emphasis of problem solving, we ignore problem *setting*, the process by which we define the decision to be made, the ends to be achieved, the means which may be chosen. In real-world practice, problems do not present themselves to the practitioners as givens. They must be constructed from the materials of problematic situations which are puzzling, troubling, and uncertain."

[109] I referred to a UN Document on Sustainable Development issued in 1986 entitled "Our Common Future: Towards Sustainable Development." The Master Plan of Aceh and Nias Rehabilitation and Reconstruction basically referred to this document in establishing the principles for rebuilding Aceh and Nias. The first six principles represent similar ideas of sustainable development: people oriented and participatory; sustainable development; holistic; integrated; efficient, transparent and accountable; and effective monitoring and evaluation.

[110] Kompas, 'Planing yang bikin pening' (20 Februari 2006).

[111] President Clinton popularized the term "build back better" in the context of disaster recovery when he was appointed the United Nations Secretary-General's Special Envoy for Tsunami Recovery. This term has since been a common goal of all disaster recovery efforts, especially those that take place in developing countries. The recovery process should cover all aspects of people's livelihood and can be elaborated as ten propositions. See

Clinton (2006) for a complete explanation of these propositions.

[112] Village planning was never mentioned in the Master Plan of Reconstruction and Rehabilitation of Aceh and Nias or in the State Law that enacted the Master Plan. The term evolved during the early stage of reconstruction and became increasingly popular to represent the planning and design process of villages destroyed by the tsunami. If in the early stage village planning represented a rather holistic approach to the planning and design process, which among the NGOs is more popular as community-based development, in the later stages it was simply a process of creating a site plan for housing and infrastructure. BRR officially used the term *village planning* in its "Guidelines of Village Planning" published in April 2006.

[113] I built this argument based on my in-depth interviews with several key informants who were directly involved with reconstruction projects. Most of these informants are Geuchik (village leaders) or former village leaders, and a few others are professional planners who worked with implementing agencies.

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Appendices

List of interviewee:

Consultant: planner, architect, engineer/contractor

	Name, date & place	Institution	Position	Role
1	Iin Rima Zahara, June 2006, Banda Aceh		Staff	Consultant
2	Johan Silas, June 2006, office Banda Aceh	ITS	Expert staff	Consultant
3	Safwan, June 2006, Office, Banda Aceh	Caixa	Architect	Consultant
4	Yenny Rahmayati, 07/22/2007 – 1 - AHC secretariat	ILO/AHC	Project Manager	Consultant
5	Johan Silas, June 2006, office Banda Aceh	ITS	Expert staff	Consultant
6	Rina Susanti, 07/22/2007 AHC secretariat	THW	Architect	Consultant
7	Nizarli, July 26, 2007 – Secretariat of IAI NAD	IAI – NAD	Chair/Architect	Consultant
8	Hariadi Asoen, July 28, 2007 – Wisma Anggrek (?)	GTZ	Planner	Consultant
9	Antonio Ismael	GTZ	Architect	Consultant
10	Tavip KM	IAI – North Sumatra	Architect	Consultant
11	Dino Argianto, July 27, 2007 – Handicap office, Geuceu Komplek	Handicap – Logika AIPRD	Project Manager	Consultant
12	Marlina, Banda Aceh	Meidiatama Indokunsultan	Architect/planner	Consultant
13	Subhan Harahap, July 26, 2007 – Secretariat of AHC	Local Contractor	Field engineer/supervisor	Contractor
14	Lundu, Situmorang, Benny, Ucok, July 30, 2007 – Warkop Solong Ulee Kareng, Banda Aceh	Supplier, (Sub)Contractor	engineer/technical staff/site supervisor	Contractor

15	Elysa Wulandari, August 3, 2007 – Elisa's house (faculty's housing complex) Darussalam	Research Institute - Unsyiah	Planner	Assessor
16	Esa Paaso	ADB consultant	consultant	Consultant

Donor and implementing agency

	Name, date & place	Institution	Position	Role
1	Ferry Suferilla, June 2006, Banda Aceh	Caritas Germany		Implementing agency/Donor
2	Maureen, office, June 2006, Banda Aceh	Caritas Germany	Project manager	Implementing agency/Donor
3	Masrijal, June 2006, Banda Aceh, office, Jalan Sudirman, Banda Aceh	Mamamiya	Direktur	Implementing agency
4	Bang Rizal, June 2006, Bandung	Bandung's NGO	Staff	Implementing agency
5	Edhy Mirwandono– 07/16/2007	Muslim Hands	Staff	Implementing agency
6	Hilda Mufiaty, 7/20/2007 (Dep. of Architecture, Unsyiah)	AIPRD/Unsyiah	Technical staff/academic staff	Implementing agency/Donor
7	Arie Infanto, July 25, 2007 – café, Neusu	CARE - Canada	Assistant Project Manager	Donor/Implementing agency
8	Mirza Hasan, 7/20/2007 (Dep. Of Architecture, Unsyiah)	LGSP-USAID/Unsyiah	Regional Manager/	Donor/Consultant
9	Nova, August 1, 2007 – GRC office, Banda Aceh	German Red Cross	Architect	Donor
10	Bimo, August 1, 2007 – house, Banda Aceh	Saudi Charity – Saudi Arabia	Architect	Donor
11	Marco Kusumawijaya, February, 2010	Uplink	Architect	Implementing agency
12	Wardah Hafiz, February, 2010	Upliink	Coordinator	Implementing agency
13	Bagus Kusumawanto, December 23, 2009, Banda Aceh	Ex Uplink	Logistic coordinator, Technical team	Implementing agency
14	Ali Akbar, November 30, 2009, Banda Aceh	Ex Uplink	Drafter	Implementing agency
15	Iskandar, November 30, 2009, Banda Aceh	Ex Uplink	Supervisor	Implementing agency
16	Rizal, November 30, 2009, Banda Aceh	Ex Uplink	Surveyor	Implementing agency

17	Jekson Amran Manurung, December 17, 2009, Banda Aceh	Rekompak	Staff	Implementing agency
18	Imam	CARE	Facilitator	Donor/facilitator
19	Mashadi, August 7, 2007 – Coffe House, Banda Aceh – 5 pm	World Vision	Facilitator	Donor/Facilitator

BRR

	Name, date & place	Institution	Position	Role
1	Dian Aryanto, (ex BRR staff – 7/17/2007 (Warung Steak Jl Dr. Mansyur)	BRR	Ex staff planner	BRR
2	Wisnubroto Sarosa, July 24, 2007 – BRR office – 45 minutes	BRR – Housing Program Directorate	Director	BRR
3	Irwansyah, July 26, 2007 – his office	BRR – Human resr. & Institution empowerment	Operational manager	BRR
4	Erwin Fahmi, August 6, 2007 – BRR office, Banda Aceh	BRR – Planning Directorate	Director	BRR
5	Abdillah, August 10, 2007 – Solong coffee house, Ulee Kareng, Banda Aceh – 5 pm	BRR – Planning division	Ex staff technical staff – mapping & data inventory	BRR
6	Zahrul Fuadi	Academia/BRR	Supervisory Board	Academia/BRR

Local government

	Name, date & place	Institution	Position	Role
1	Ramli Rasyid, July 30, 2007 – Kantor Dinas Pendidikan Prov. NAD	City Government of Banda Aceh, educational Division	Head	Government
2	Ustadz PKS, July 31, 2007 – PKS secretariat, Banda Aceh	Legislative member		Government
3	Bahagia, August 7, 2007 – Office, Banda Aceh – 9:30 am	Government of NAD Provice – Division of urban and Housing	Director	Government
4	T. Dermawan	Dinas PU Kota Banda Aceh	Chief	Government

Local people/beneficiary, including village leader (geuchik), local facilitator

	Name, date & place	Institution	Position	Role
1	Syamsudin… residence, June 2006, Lhong	Local people, Lhong village Aceh Besar		Beneficiary
2	Ibu Inong, residence, June 2006, Lhong	Local people, Lhong village Aceh Besar		Beneficiary
3	Rasyid, July 23, 2007 – Pak Rasyid's homePeukan Bada	Local people (survivor)	Geuchik Lam Baro Neujid	Beneficiary
4	Irdus, July 23, 2007 – Pak Idrus' home Gampong Pande; second interview in 2009	Local people (survivor)	Geuchik Gampong Pande	Beneficiary
5	Junaidi, August 6, 2007 – house, …. , Aceh Besar – 4 pm	Local people (victim)	Geuchik Lambade	beneficiary
6	Rohani Musa, August 8, 2007 – Ibu Rohani's house, Gampong Jawa – 4 pm	Local people (survivor)	home-industry	beneficiary
7	Reza, August 8, 2007 Gampong Jawa – 4:30 pm	Local people (survivor)	merchant	beneficiary
8	Azimah, August 20, 2007 – mini museum, kampong Bitai – 11 am	Local people (survivor)	house wife	beneficiary
9	Ulee Lheu people,	Local people (survivor)		beneficiary
10	Yusran, first interview in Bitai, second interview November 24, 2009	Local people (survivor)	Geuchik Bitai	beneficiary
11	Ibu Ulee Lheu (uplink beneficiary), August 20, 2007 – Ulee Lheue – 3 pm	Local people (survivor)		beneficiary
12	Luqman	Local people (survivor)/Uplink	Facilitator	facilitator/beneficiary
13	Sudarmi	Local people (survivor)	Government official	Beneficiary
14	Fatimah, December 4, 2009, Ulee Lheue,	Local people (survivor)	house wife	beneficiary
15	Irwansyah, November 24, 2009, Banda Aceh	Local people (survivor), Ulee Lheue	Housing inventory	beneficiary

16	Sofyan Hadi, November 24, 2009, Banda Aceh	Local people (survivor), Ulee Lheue	TPK	beneficiary
17	Bachtiar, November 20, 2009, UleeLheue, Kedai kopi	Local people (survivor), Ulee Lheue, relocating to Lampeunereut	Sekdes	Village leader
18	M. Deham, December 8, 2009, Banda Aceh	Local people (survivor), Bitai		beneficiary
19	Surya Darma, December 23, 2009, Banda Aceh	Local people (survivor), Bitai	Kaur pembangunan, Desa Bitai; supervisor Meidiatama,	Local gov't; consultant staff; beneficiary
20	Amiruuddin, Banda Aceh	Local people (survivor), Gampong Pande	Presently Geuchik Gampong Pande	Local gov't; beneficiary
21	Erni Ningsih	Local people (survivor), Gampong Pande	Presently Financial staff, Gampong Pande	Local gov't; beneficiary
22	Ahmad Nawawi	Local people (survivor), Gampong Pande; CV Lenggahara	Presently Kaur. Pemerintahan, Gampong Pande; ketua PPRG (Panitia Pengawasan Rehabilitasi Gampong); Site supervisor CV Lenggahara	Local gov't; beneficiary; contractoir staff
23	Aman Bahagia	Local people (survivor); self building contractor	Builder	Beneficiary; self-contractor
24	Irwansyah, December 9, 2009, Banda Aceh	Local people (survivor), Lambung	Presently Kaur pemerintahan	beneficiary
25	Hardiansyah, December 17, 2009, Banda Aceh	Local people (survivor), Lambung	Presently Sekdes	beneficiary
26	Zaidi M. Adan, December 1, 2009	Local people (survivor), Lambung	Geuchik	Local/village gov't; beneficiary
27	Nofriana, December 15, 2009, Banda Aceh	Local people (survivor), Lambung		beneficiary
28	Zuhra, December 9, 2009, Banda Aceh	Local people (survivor), Lambung		beneficiary
29	Lenita Mutia, December, 2009, Banda Aceh	Local people (survivor), Pante Riek, originally Lampineung		beneficiary
30	Sukirso, December, 2009, Banda Aceh	Local people (survivor), Pante Riek, relocating/moving through local gov't allocation		beneficiary
31	Bukhari, November 25, 2009, Banda Aceh	Local people (survivor), Pante Riek, relocating/moving through local gov't allocation	Presently Geuchik Pante Riek	beneficiary