

THE EFFECTS OF RESETTLEMENT ON COMMUNITY RECOVERY:

AN ANALYSIS OF POST-TSUNAMI ACEH, INDONESIA

by

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE

DEGREE OF

DOCTOR OF PHILOSOPHY

in

THE FACULTY OF GRADUATE AND POSTDOCTORAL STUDIES

(Planning)

THE UNIVERSITY OF BRITISH COLUMBIA

(Vancouver)

October 2013

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Abstract

In a context of constrained time, resources and geographical space, populations displaced by natural disaster often face diverse and/or ad hoc resettlement schemes. The purpose of this dissertation is to understand factors that can influence successful resettlement several years after a natural disaster so that it may better inform the management and planning of recovery processes. As such, this research asks: ‘How do resettlement patterns influence long-term holistic community disaster recovery?’ To address this question, this study explores recovery across five communities affected by the 2004 Indian Ocean Tsunami in Aceh, Indonesia. Using a mixed methods comparative case study design, villages in Banda Aceh and Aceh Besar that represent differences in resettlement process and pattern were targeted. Findings are based on fieldwork across these communities – Bitai, Gampong Baro, Lampulo, Neheun Compound and Panteriek Compound – six years after the disaster. Data collection included key informant interviews (i.e., village chief, elders, etc.), key expert interviews (i.e., members of government, NGOs, and academia), focus group discussions (i.e., villagers), direct observations, and secondary data.

In the absence of a generally accepted method to measure community disaster recovery, a survey tool was implemented to assess holistic wellbeing outcomes. This tool is developed by operationalizing a capabilities-based approach through a series of steps that lead to a multi-dimensional recovery index. Results show that differences in overall recovery across the villages are not explained by either resettlement process (participation versus non participation) or pattern (resettlement in previous location versus in new location). Further qualitative data analysis displays that resettlement success in the five cases is influenced by (1) location, which shapes livelihood, connectivity and safety, and (2) built environment, which shapes sociability, identity and belonging. Comparisons across cases highlight that these influences impact recovery through a number of mechanisms of importance, such as access to governance structures, availability of gathering places, and social norms and behaviours. The analysis also describes how mechanisms are mediated by leadership, proximity and community composition. The findings support a broader understanding of post-disaster processes, including an emphasis on intangible dimensions and a need to approach resettlement using a lens of ‘place’.

Preface

This dissertation is original, unpublished, and independent work by the author, D. Panjwani.

This study was approved by the University of British Columbia Behavioural Research Ethics Board on March 2, 2011 (Certificate # H11-00096).

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List of Abbreviations

ADB	Asian Development Bank
AHDR	Aceh Human Development Report
BAPPEDA	<i>Badan Perencanaan Pembangunan Daerah</i> [Regional Body for Planning and Development]
BAPPENAS	<i>Badan Perencanaan Pembangunan Nasional</i> [National Development Planning Board]
BKRA	<i>Badan Kesinambungan Rekonstruksi Aceh</i> [Aceh Sustainable Reconstruction Agency]
BPM	<i>Badan Pemberdayaan Masyarakat</i> [Community Empowerment Board]
BPS	<i>Badan Pusat Statistik</i> [Central Statistic Agency]
BREB	Behavioural Research Ethics Board
BRR	<i>Badan Rehabilitasi dan Rekonstruksi</i> [Agency for the Rehabilitation and Reconstruction]
DAI	Domestic Assets Index
DII	Disaster Impact Index
DRI	Disaster Recovery Index
DRR	Disaster Risk Reduction
EDFF	Economic Development Financing Facility
EM-DAT	Emergency Events Database
FBA	Forum Bangum Aceh
GAM	<i>Gerakan Aceh Merdeka</i> [Free Aceh Movement]
GDI	Gender-related Development Index
GEM	Gender Empowerment Measure
GIS	Geographic Information Systems
HDI	Human Development Index
HDR	Human Development Report
HPI	Human Poverty Index
ICAIOS	International Centre for Aceh and Indian Ocean Studies
IAIN	<i>Institut Agama Islam Negeri</i> [Institute of Islamic Countries]
IDMC	Internal Displacement Monitoring Centre
IOM	International Organization for Migration
INGO	International Non-Governmental Organization

MDF	Multi Donor Fund
MDRI	Multi-Dimensional Recovery Index
MOU	Memorandum of Understanding
MSR	Multi-Stakeholder Review
NAD	Aceh Province (Nanggroe Aceh Darussalam)
NGO	Non-Governmental Organization
NRC	National Research Council
PKK	<i>Pembinaan Kesejahteraan Keluarga</i> [Empowerment Family Welfare]
PU	Public Works Agency
RA	Research Assistant
SD	<i>Sekolah Dasar</i> [Indonesian Primary School]
SMP	<i>Sekolah Menengah Pertama</i> [Indonesian Junior High School]
TCPS	Tri-Council Policy Statement
TDMRC	Tsunami and Disaster Mitigation Research Centre
TEC	Tsunami Evaluation Coalition
UGM	University of Gadjah Mada
UNDP	United Nations Development Programme
UNHCR	United Nations High Commissioner for Refugees
UNISDR	United Nations International Strategy for Disaster Reduction
UNU	United Nations University
USA	United States of America
USAID	United States Agency for International Development

Glossary

<i>Asli</i>	Original
<i>Barat</i>	West
Baro	New
<i>Becak</i>	Pedicab
<i>Desa</i>	Village
<i>Dinas</i>	Service
<i>Gampong</i>	Village
<i>Imam</i>	Religious leader
<i>Korban</i>	Sacrifice
<i>Mahr</i>	Mandatory requirement for all Muslim marriages
<i>Maulid</i>	Celebration of the Birth of the Prophet
<i>Masjid</i>	Mosque

Acknowledgements

My first debt of gratitude goes to the people of Aceh. Your kindness, generous hospitality and whole-hearted cooperation and support will always be cherished. Your positive outlook of life in the face of adversity and your faith in the Almighty has been a valuable lesson and life experience.

In particular, I would like to thank Rina Meutia for sparking my affection for Aceh during an internship at the World Bank in Washington, DC and my Aceh family for their warmth and care during my exploratory trip. Thank you to Dr. Saiful Mahdi and the entire team at the International Centre for Aceh and Indian Ocean Studies for guiding me in my exploration and to Lia Djamal and Samsuar Abang for making the fieldwork process not only possible, but full of precious adventures. I am grateful to the village leaderships and community members in Bitai, Gampong Baro, Lampulo, Neheun and Panteriek for allowing me to experience their communities and for letting me into their hearts and homes. My gratefulness goes to all of the Indonesian government officials, academics, and NGO staff for their instrumental advice and wisdom.

My gratitude extends to all of my professors and colleagues at the School of Community and Regional Planning (SCARP) at the University of British Columbia. Your patience, encouragement and invaluable support in my academic pursuits are very much appreciated. I would like to thank my supervisor, Dr. Stephanie Chang, for your continuing guidance, lasting encouragement and constant support. Your unstinting time and knowledge in providing mentorship have been priceless. My immense appreciation and thanks to my supervisory committee: Dr. Leonora Angeles, Dr. David Edgington and Dr. Penny Gurstein, for your generous advice, critique of drafts and timely feedback. Outside of my supervisory committee, my gratitude to Dr. Bobbi Setiwan and Dr. Helen Cruz, for providing insights that were important in shaping my research proposal.

I would also like to recognize the team at the Institute of Environment and Human Security at the United Nations University, where I participated in the Summer Academy program in 2012. In particular, Dr. Susan Cutter, Dr. Mohammed Hamza, Michelle Leighton and the PhD participants who challenged me to link research to policy and practice.

Thank you to my funders. Financial resources and support for this study came from the Social Sciences and Humanities Research Council (Doctoral Fellowship 2010 – 2012), the University of British Columbia (Four Year Fellowship 2009 – 2012; Faculty of Applied Science Graduate

Award 2012 – 2013), the School of Community and Regional Planning (Graduate Entry Scholarship 2008 – 2009; Brahm Weisman Memorial Scholarship 2011), and the Liu Centre for Global Issues (Bottom Billion Fieldwork Fund 2011).

My immense gratitude to my fellow PhD students at SCARP, in particular my PhD sisters: Lily Yumagulova, Sarah Church, Aftab Erfan and Victora Barr, for your robust collegiality and your strong support over the years. Thank you to all of my friends for your forbearing support: in particular, to my loyal writing partner, Giselle De Grandis, for your consistent source of inspiration and motivation. I owe gratitude to my colleagues and involvements at Focus Humanitarian Assistance and the Global Facility for Disaster Risk Reduction for fueling my passion for disaster risk reduction.

Thank you to my parents, in-laws and siblings for your boundless encouragement and for instilling in me by example, compassion, integrity, and aspiration to serve the most vulnerable. Finally, my unending gratitude to my husband, Akber Samji. Thank you for your enduring patience, for supporting me unconditionally, and for consistently inspiring me to strive beyond my wildest dreams.

Dedication

To all those who have been displaced by disaster and courageously strive to reconstruct their place in our unpredictable world.

And to my late grandmother (Dadima), who departed during my PhD journey. While she did not have the opportunity or means to get a formal education, it is her inspiration and determination that have made this educational pursuit a reality.

CHAPTER ONE: INTRODUCTION

Natural disasters are occurring with greater frequency and devastation, causing catastrophic loss, damage and disruption worldwide. Disaster trends indicate an overall increase in the number of natural disasters reported and in the number of people affected by natural disaster worldwide (EM-DAT, 2010). While the increase is visible across the globe, statistics on the number of people affected by disaster by level of development point to significantly higher numbers in developing countries and least developed countries when compared to developed countries (UNISDR, 2006). It is speculated that this imbalance is due to a combination of factors of risk and vulnerability within a context of climate change, urbanization, overpopulation, poverty and development. Moreover, it is predicted that the majority of the most damaging disasters will continue to occur in developing countries and least developed countries, each followed by a long and difficult path of recovery.

Coupled with the increasing rates of natural disaster events is a growing prevalence of populations facing displacement due to these events. Some recent examples include the 2010 Pakistan floods, with an estimated over five million people displaced, and the 2010 Haiti earthquake, with an estimated over 300,000 people displaced.¹ The Global Estimate report (IDMC, 2013) reveals that in the year 2012 alone, 32.4 million people were displaced by disaster such as floods, storms and earthquakes. The majority of people displaced (98 percent over 2008 – 2012) were in developing countries (ibid.). As a consequence, and as a component of their recovery process, displaced populations are subject to diverse resettlement schemes. For example, relocation may be pursued as a necessary strategy by government agencies to provide displaced communities with a safe place to recover when remaining in previous sites is no longer a viable option. In order to understand the long-term impacts of resettlement patterns on community recovery, this dissertation will explore recovery across five communities in Aceh, Indonesia, six to seven years following the 2004 Indian Ocean earthquake and tsunami. An exploration of these cases will provide insights into relationships

¹ The researcher gained first hand insights on the disaster resettlement and recovery following these disasters through separate research projects in Haiti (2010) and Pakistan (2012). (For example: 1) Hill, A., Bevington, J., Davidson, R., Chang, S., Eguchi, R., Adams, B., Brink, S., **Panjwani, D.**, Mills, R., Pyatt, S., Honey, M., Amyx, P., Community-Scale Damage, Disruption, and Early Recovery in the 2010 Haiti Earthquake, *Earthquake Spectra*. October 2011, 27(S1); 2) **Panjwani, D.** and Aijazi, O. An Exploration of the Role of Aid Delivery in Recovery and Resilience in Flood- Affected Pakistan. 9th Canadian Risk and Hazards Network (CRHNet) Symposium. Vancouver, BC. October 24 - 26, 2012.)

between resettlement patterns and recovery that may better inform future resettlement strategy. To situate this exploration, information in this Chapter (One) includes the objectives of the research, information on the area of study and the key research questions of this study.

1.1. Research objectives

The overarching focus of this research project is to explore factors that influence the long-term recovery of communities after disaster. The primary aim within this exploration is to identify resettlement patterns that can facilitate holistic long-term community disaster recovery in the context of development. Substantive knowledge presented in this paper marks one step toward reaching this goal. The role of place attributes (for example, access to livelihoods and attachment to land) is a key component of this exploration. As such, it is hypothesized that for long-term community disaster recovery to be successful, resettlement must address several core attributes of place. The driving force in conducting this research is a need to gather evidence to investigate this hypothesis and illustrate differences in resettlement patterns.

An underlying objective of this research project is to produce evidence-based findings to better inform decision-makers and facilitate effective resettlement and recovery policy direction. This goal is supported by recommendations that have emerged in academic research reviews (for example in National Research Council, 2006), emphasize a need for detailed post-disaster research examining what actually occurs in communities during and after the recovery process. The same review also states a need to identify enablers that may allow for more rapid and successful recovery outcomes. During what will later be described as an exploratory trip, these needs were further verified at meetings with regional program advisors at various international agencies in Indonesia early in this research. Conversations included expressions of an on-going need for more independently conducted planning research that can be utilized to improve the management of post-disaster processes, including resettlement planning.

These conversations also verified that in common practice, disaster recovery and resettlement planning was mostly considered as a technical exercise wherein authorities assumed that displaced victims primarily need access to new physical permanent shelter. However, in reality, and what this study will explore, is that following a disaster, individuals often have also lost the social, cultural, and physical grounding offered by communities and places of inhabitancy (Brown & Perkins, 1992). Furthermore, this study supports the perspective that it is these elements of social and cultural matter

that endow a place with its defining essence and identity, and that become the building blocks of community development after a disaster (Madanipour et al., 2001). The research questions and framework employed in this study supports the argument that in order to enable long-term holistic community recovery within a context of development, it is vital for the networks of survivors to be reconnected, re-established and/or nurtured while building their relationship with place (Campanella, 2006). Findings will contribute to conceptual understandings of recovery that incorporate these broader perspectives.

1.2. Research questions

In order to address the objectives of this research that have just been described, the central research question that is explored throughout this dissertation is: ‘How do resettlement patterns influence long-term holistic community disaster recovery?’ In particular, the dissertation will focus on case studies from Aceh, Indonesia, and address the question: ‘In the context of post-disaster recovery in Aceh, what are some of the key factors influencing the successful recovery of communities after six years (i.e., 2004 to 2011)?’ In addressing these questions, this study does not try to explain recovery in Aceh, but rather, explores relationships between some of the key factors that surface as influencing recovery in the five communities investigated.

This central research question is broken down in four sub-questions specific to the case studies. The first and second sub-questions will be addressed in Chapter Five and the third and fourth sub-questions will be addressed in Chapter Six.

1. How can long-term holistic community disaster recovery be systematically assessed across cases?
2. What are some of the key factors that influence long-term holistic community disaster recovery at the village level?²
3. How do resettlement patterns enable or hinder development?
4. How are attributes of place addressed in the various resettlement patterns?

² The investigation into factors influencing recovery focuses on factors at the village level. External factors (for example, broader political, cultural and economic factors), although not emphasized in this study, are also important.

1.2.1. Terminology

The overarching theme pervasive in disaster literature is that of recovery as the return of a post-disaster situation to some level of normalcy or functionality. In leading disaster sociologist Quarantelli's (1999) literature review on uses of the term 'recovery', he finds that the word is most often used to imply an attempt to bring or the bringing of a post-disaster situation to some level of acceptability, which is not necessarily the same as the pre-disaster level. In this study, recovery will imply the return of a disaster situation to a level of acceptability that exceeds living conditions prior to the disaster. As such, the operational working definition of the concept of **holistic community disaster recovery** will be the restoration and improvement of living conditions of disaster-affected communities. Assessments of recovery will be understood within a framework of disaster risk reduction and human development (i.e., the capabilities approach described later).

The definition of **holistic** relates to the notion that things should be understood as a whole and not just as individual parts. Therefore, recovery will be understood as a complete integrated system (i.e. as a whole), rather than through one particular dimension (i.e. only physical, economic, social, and so on).

For purposes of the study, **community** will be approached simply as a group of interacting people who are living in a common geographical location. Two of the cases explored in this study will be 'new' communities (i.e., established anew after the disaster) and three will be 'old' communities (i.e., those already existing from prior to the disaster). However, even in the latter, discussions will distinguish between 'original' community members and the 'newcomers' to the community (i.e. displaced survivors) after the disaster. When operationalized by case studies in the region of research, the **community scale** will correspond to the Village or Village Compound³.

³ The terminology used in this dissertation uses "village" and "compound". This terminology is used simply to define the community/case study. However, in reality there are unique political and historical complexities associated with village classification. As described in Mahdi (2009), the smallest unit of a community in Aceh was called a *gampong*, until Soharito's regime during which community structures were changed to *desa*. The term *desa* is a Javanese term for village structure, which was standardized across Indonesia during this time. Some villages have become *desa* while others remain a *gampong*. As Mahdi (2009) describes, the difference between the two is that a *desa* can administer itself and its leader, while a *gampong* has less sovereignty. However, a *gampong* is not recognized in the administration as it is considered the same as *desa*. Therefore, for purposes of this study, the distinction between the two will not be made. In addition, some of the case went by both *desa* and *gampong*. A 'compound' is used to describe a community unit that is distinct from the larger village, and is not technically a *gampong* or *desa*, but was referred to as both interchangeably during interviews.

However, complexities associated with defining post-disaster 'community' in this way will surface throughout the exploration. For example, as Christoplos (2006) writes on the post-tsunami context:

Many of the 'communities' formed through resettlement from different locations do not function as communities – they are merely people living near each other, often with great tensions and distrust... some new communities are being created by resettling people from different devastated areas in a single site (Christoplos, 2006: 76).

Disaster will be defined in accordance with the UNISDR definition of disaster as:

a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources (UNISDR, 2010).

The underlying value that this paper will recognize is that natural disasters are in fact not really natural, but rather, a product of relationships between the natural, built and social environment.

Resettlement is most often used by international aid agencies to describe forced relocation to a new area (for example, UNHCR 2004; ADB, 1998). In this dissertation, however, resettlement will follow Webster's dictionary's definition of resettlement, which includes: 1) to begin to live in a new area after leaving an old one; or 2) to begin to use (an area) again as a place to live. Therefore, resettlement will include a return to a new location or a return to previous location. In addition, resettlement in this dissertation will imply that resettlement marks a permanent location after temporary displacement.

Attributes of place making are the broad number of elements that can be embodied in the practice of (re)creating place. They include for example, access to livelihoods, attachment, and community engagement.

This paper will use the terms '**developing**' and '**least developed**', due to common usage by one of the key target audiences of this research, the international donor and aid community. For example, the United Nations Human Development Report classifies Indonesia as a '**developing**' country and the World Bank classifies Indonesia as a '**developing**' economy. It is important to recognize that ideological terminology, including developed and/or developing countries remain problematic in nature for a variety of reasons including an inherent implication of inferiority. However, these discussions are beyond the scope of this paper.

1.3. Area of study

1.3.1. The 2004 Indian Ocean earthquake and tsunami in Aceh

On December 26, 2004, a magnitude 9.1 earthquake occurred 30 km below sea level off the west coast of Sumatra. The earthquake was the result of a convergence between two tectonic plates: the Indo-Australian plate and the Eurasian plate. The two plates ruptured along a 1,300 km length of what is called the Sunda megathrust, causing the ocean floor to lift and drop and generating a series of massive waves. The resulting tsunami directly affected 11 countries, with reports of anywhere from 225,000 to 300,000 deaths and 1 million people displaced.

The closest landmass to the epicentre was the province of Nanggroe Aceh Darussalam (Aceh), situated 250 km away and at the northernmost tip of Sumatra, Indonesia, and most severely impacted (see Figure 1.1). The tsunami reached Banda Aceh, the capital of Aceh, within 45 minutes of the earthquake, causing immediate death and destruction and flattening the entire coast of Aceh within minutes. Estimates point to at least 124,000 lives lost, 100,000 people declared missing and 550,000 people homeless (IOM, 2005). Tsunami mortality figures in Aceh show significant disparity between males and females, with three times as many females killed than males (Rofi et al., 2006).



Figure 1.1. Map of Aceh

Source: After [Zolman, 2011]. Scale unknown

Total damage and loss by the tsunami in Aceh was estimated at US\$4.8 billion, equivalent to around 80 percent of Aceh's gross domestic product.⁴ As indicated by Figure 1.2, 78 percent of the total damage and losses were absorbed by the private sector, while 22 percent was borne by the public sector (BAPPENAS and International Community, 2005). The incredible scale of damage caused by the disaster in Aceh is displayed by figures collected in a multi-agency assessment conducted by the International Organization for Migration (IOM) in 2005 and presented in Table 1.1 below.

⁴ The damage and loss assessment estimated total costs to replace damage and losses caused by the disaster, in other words, the replacement value (Bappenas and International Community, 2005).

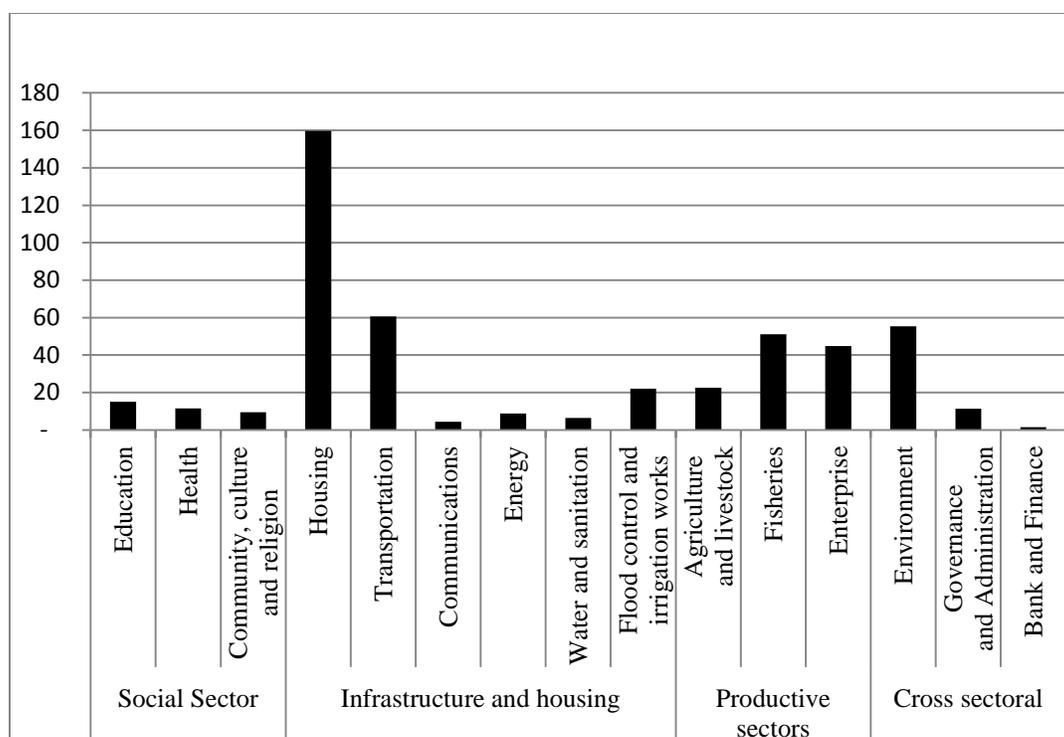


Figure 1.2. Damage and loss from tsunami in Aceh (Million US\$)

Source: Based on figures in BRR and International Partners, 2005: 184

	Initial	Destroyed	Major damage
Settlement area (ha)	173,673	N/A	60,438
Houses (units)	116,880	66,622	14,026
Health facilities (units)	693	457	43
School buildings (units)	1,662	765	183
Religious buildings (units)	2,580	1,109	348
Government buildings (units)	1,412	997	10,166
Markets/kiosks (units)	1,416	1,062	109
Arterial roads (km)	654	180	298
Neighborhood roads (km)	1,361	459	286
Provincial highways (km)	603	229	84
Bridges (units)	2,267	1,508	408
Aqueducts (units)	9,122	7,571	547

Table 1.1. Damage assessment figures of tsunami in Aceh

Source: Based on figures in IOM, 2005: 1

The 2004 tsunami prompted remarkably high levels of international attention, both in scale of response and level of funding (Telford & Cosgrave, 2007). An estimated US\$7.7 billion was committed toward reconstruction activities (Masyrafah and McKeon, 2008). NGOs flocked to Aceh soon after the disaster and an estimated 463 agencies were involved with implementing post-disaster projects. These implementing agencies included the Government of Indonesia, 435 NGOs and 27 donors (including UN agencies); of the 435 NGOs that operated in Aceh, 326 agencies (75%) were international organizations (Masyrafah and McKeon, 2008).

For the first three months after the tsunami, reconstruction was coordinated through the Indonesian government's National Coordinating Agency for Natural Disaster and Refugee Relief in Jakarta; however, it was inadequately prepared to coordinate the relief operation and vast numbers of international agencies involved (da Silva, 2010). Therefore, the National Planning Agency (*Badan Perencanaan Pembangunan Nasional*, BAPPENAS) put into place a *Master Plan for the Rehabilitation and Reconstruction of Aceh and Nias* on April 15, 2005. One day later, on April 16, 2005, the President of Indonesia, Susilo Bambang Yudhoyono established the Agency for the Rehabilitation and Reconstruction (*Badan Rehabilitasi dan Rekonstruksi*, BRR) who would be responsible for coordinating and implementing the *Master Plan*, described as a community-driven recovery program for Aceh. With a mandate to operate for a four-year period, BRR oversaw the implementation of close to 20,000 projects by hundreds of organizations. As described later in the dissertation, the BRR ended its term on April 16, 2009.

All of the implementing agencies (i.e., NGOs and donors) worked under the coordination of BRR, and many houses were built by BRR (often in cases when a community member was not granted a house from the NGO that was engaged in building in their village). Therefore, reference to the BRR and its role will occur at many instances within this dissertation. The official mandate of BRR was:

To design policies, strategies and action plans, within an atmosphere of transparency and accountability, and to implement them through effective leadership and coordination of the combined domestic and international effort to rebuild Aceh and Nias back better and safer (Subekti, 2009: xi).

Shelter policy came in place six months after the disaster, causing confusion on the provision of assistance. A key development included an announcement by BRR in June 2005 that families should be encouraged to return to their own land or voluntarily resettle on land purchased by communities or by BRR. Additional policies were developed as needs and gaps became evident.

For example, BRR issued policy guidelines of land acquisition and tenure provision, emphasizing the role of the government in acquiring land for victims who had lost their land.

This study focuses on case studies in the City of Banda Aceh and the Regency of Aceh Besar, both severely impacted by the tsunami⁵. Figure 1.3 below indicates a detailed spatial planning map of the city of Banda Aceh (the area of study) developed by the Regional Body for Planning and Development (*Badan Perencanaan Pembangunan Daerah*, BAPPEDA), which clearly outlines a ‘green zone’ – land that is not to be rebuilt upon due to vulnerability to flooding and future disaster. Though developed soon after the disaster, the map was never approved or implemented. This was cited by government officials to be largely due to the reluctance of village members to leave the ‘green zone’ and also due to the lack of enforcement of boundaries during the rebuilding process that had already started (i.e., NGOs were already building houses in the 'green zone'). Reference to the spatial plan will also appear at several instances within this dissertation.

⁵ The City of Banda Aceh is composed of 9 subdistricts and 90 villages; the Regency of Aceh Besar neighbours the City of Banda Aceh to the South and East and is composed of 23 districts and 604 villages (BPS, 2010).

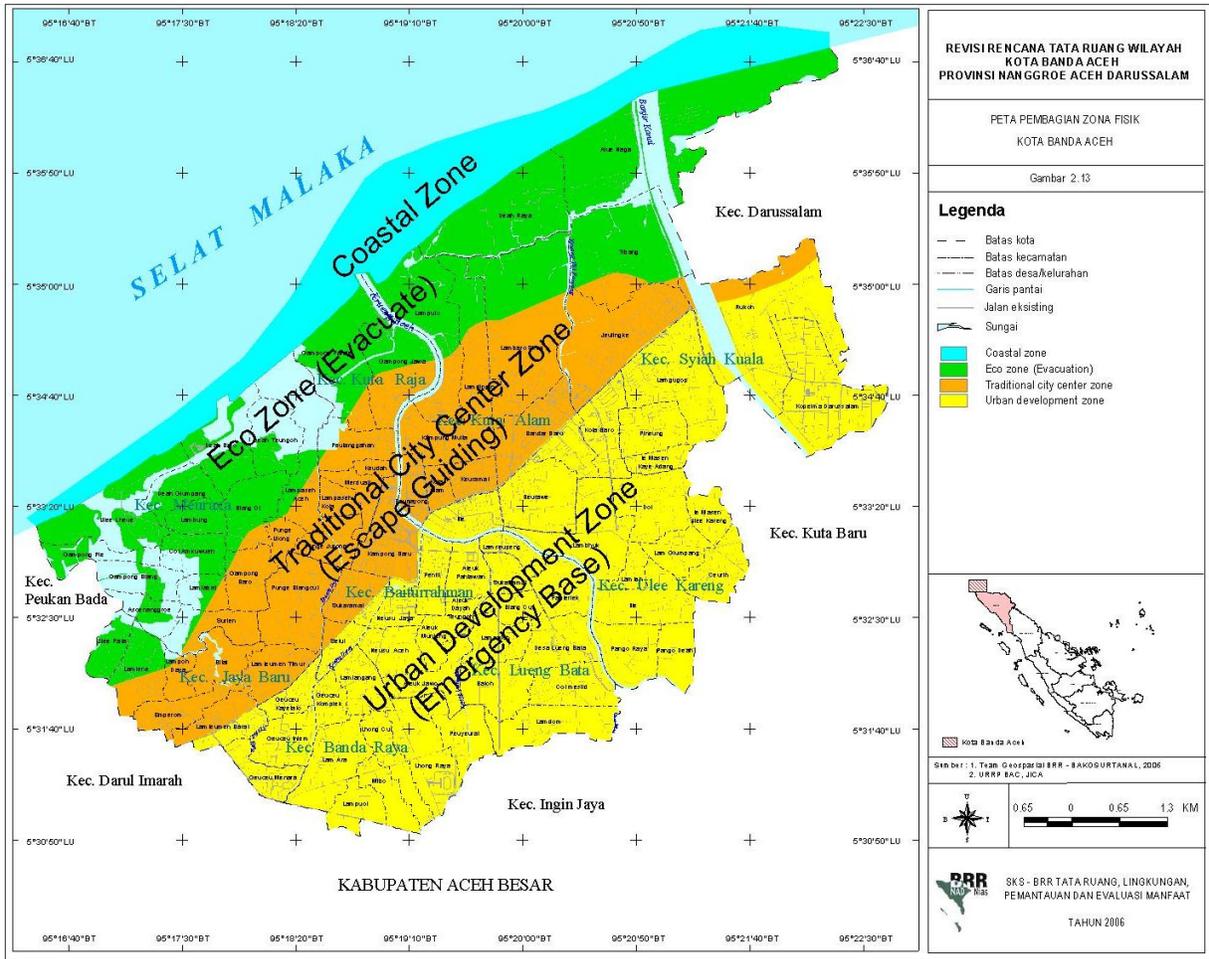


Figure 1.3. Banda Aceh spatial plan 2005

Source: Map provided by BAPPEDA Banda Aceh during fieldwork

1.3.2. Hazard exposure profile

Some claim that, “the tsunami event was a rare occurrence, and hopefully one that will not occur again in the lifetime of those alive today... “ (UNDP, 2010, p. 107). Whether or not this is true, Aceh remains an area that is prone to natural disasters on an on-going basis and a reality that plays a strong role in the human development context of Aceh. Situated on the ‘Pacific Ring of Fire’, multiple hazard exposure across Aceh is high all year round, with large populations physically occupying hazardous zones in order to be close to their livelihoods. With a multi-hazard profile, Aceh has suffered from and will continue to suffer from many disasters of smaller magnitude

including earthquakes, landslides and flooding that closely impact development initiatives and income-generating activities.

Concerted efforts have been made to develop records of hazard events since the 2004 tsunami event, namely through the Tsunami and Disaster Mitigation Research Centre (TDMRC) located in Aceh. An analysis of data from one particular database at the TDMRC shows close to 600 disaster events recorded over the time span of 2008 to 2010, including drought, earthquakes, fires, floods, forest fires, landslides, strong wind events, and surge events. Combined reported victims of these events include 44 deaths and 404 injuries while losses include 2,380 houses destroyed and 5,713 houses damaged (Setyawati, 2010). These figures point to high hazard frequency, exposure and loss. The data supports a need to understand long-term disaster recovery in Aceh within a framework of disaster risk reduction.

1.3.3. Political conflict

Aceh has a deep-rooted history of political conflict that has implications for understanding recovery in the region. This includes a long history of strong resistance to control by outsiders since the first Dutch invasion of the independent Sultanate of Aceh in 1873. The history of the recent rebellion dates back to 1976 when Hasan di Tiro founded the *Gerakan Aceh Merdeka* (Free Aceh Movement, GAM) and proclaimed Aceh to be an independent state. This was followed by 29 years of conflict in Aceh between the Government of Indonesia and the GAM; estimates point to anywhere from 15,000 to 30,000 deaths from this conflict (Reid, 2006). The period was characterized by the presence of Indonesian central government troops, human rights abuses⁶, and disputes over the allocation of natural resources revenues⁷; impacts of the conflict included high levels of corruption, weak local government and under-investments in public services⁸ (da Silva, 2010: 26). Peace in Aceh has been described as the exception rather than the norm, with the Acehnese having spent 86 of the last 132 years in armed resistance against the Government of Indonesia (Reid, 2006).

⁶ See next section on identity, and Reid, 2006.

⁷ The region of Aceh is a source of oil and gas deposits and has extensive mining, forestry and plantation agriculture. For example, the Exxon-Mobil run Arun LNG plant is near North Aceh and is Indonesia's fourth largest export earner; in 1997, Aceh provided 17 percent of Indonesia's almost US \$12 billion in oil and gas export revenue (Kingsbury, 2006: 6).

⁸ For further reading on impacts of the conflict, see Aspinall 2006 and Reid, 2006.

The official end of the conflict was established on August 15, 2005 by the Helsinki Memorandum of Understanding (MoU) between the Government of Indonesia and the GAM. The agreement set out arrangements for a number of elements relevant to the governance of Aceh, including political participation, economic management, rule of laws, practice of human rights, and so on (MSR, 2009: 3). The peace has held to date and through two election cycles. The 2004 Indian Ocean tsunami is consistently cited as helping to trigger peace negotiations between the Government of Indonesia and the GAM for a number of reasons, including the need for cooperation and coordination in post-disaster efforts. For example, Zeccola (2011) writes:

The tsunami and the conflict entered into a symbiotic relationship on 26 December 2004; the tsunami inspired peace and peace was favourable for tsunami reconstruction. Both disasters deeply shaped new historical, social, political and economic contours in Aceh (p. 308).

Consequently, recovery efforts following the disaster have been a combination of post-disaster and post-conflict efforts; specific funds were allocated toward projects focused specifically on post-conflict recovery (i.e., through reintegration assistance). Reintegration assistance has included political reintegration into legitimate political processes and social reintegration through skills training to become constructive citizens (MSR, 2009). For example, these include projects focused on governance and administration, along with housing and enterprise support (for example, opportunities in the construction sector). Furthermore, reports show that former combatants and civilian conflict victims have received greater amounts of reintegration assistance than have civilian non-victims (MSR, 2009). While this dissertation will not go into depth on the complexities associated with lasting peace in Aceh, it will point to several writings that have focused on the political economy of the peace process in Aceh (for example, see Aspinall, 2009; de Alwis & Hedman, 2009; Kingsbury, 2006; Zeccola, 2011).

Over the course of the fieldwork, distinguishing between post-tsunami and post-conflict impacts and recovery was difficult; whether or not this is even possible was an ongoing dilemma. To address this challenge, this study describes community recovery from the disaster. The distinction with post-conflict is not made explicit as recovery outcomes are described as simply wellbeing outcomes. Repressions of conflict are excluded from the analysis due to insufficient primarily data collected and based on advice received from local scholars over the course of the fieldwork and within the scope of this study.

1.3.4. Identity and community in Aceh

Identity and community in Aceh has largely been shaped by the political conflict landscape. Literature on Aceh's place in the Indonesian political arena points to an emphasis on a "distinct Acehnese ethnic identity defined against that of Indonesia" (Aspinall, 2006). For example, the independence movement based its claims for territorial sovereignty on the construct of an Acehnese identity that had distinctive ethnic, linguistic, cultural, historical and geographically specific characteristics (Miller, 2010). Extreme violence and abuses by Indonesian government troops during these times of conflict deepened feeling of alienation and strengthened ethno-nationalism in Aceh (Aspinall, 2006).

Figures on displacement as a consequence of the conflict vary. For example, estimates point to fluctuations from 12,000 and 180,000 people displaced between 1999 and 2003 (Oxfam, 2003). Major driving forces behind the displacement included the clashes between the GAM, militias, and military forces; some studies provide evidence of economic opportunities as playing an important role as well (Czaika and Kis-Kato, 2009). The Indian Ocean tsunami and role of the national government in recovery efforts have been accredited for precipitating a stronger sense of belonging to the 'nation' alongside the peace accord; the majority of people displaced by the conflict and disaster have been resettled.

1.3.5. Shariah law

One of the key landmarks from the recent GAM conflict includes the passing of Law No.18 in January 2002 that conferred special autonomous status for the province of Aceh Special Region as the province of Nanggroe Aceh Darussalam. The law sought to convince the Acehnese to remain part of Indonesia by granting the power for self-governance (Bastamam-Ahmad, 2007: 159). The period marked the implementation of Islamic shariah law, along with greater revenue sharing of Aceh's natural resources (Kenny et al., 2010: 9). The implementation of Islamic law in Aceh has faced controversy and has resulted in the formation of groups that support or are in opposition to the implementation (for example, see Bastamam-Ahmad, 2007).

1.3.6. Human development indicators

A high level understanding of the state of Aceh is provided in an assessment of human development indicators published by the UNDP in Aceh's Human Development Report (AHDR)

(UNDP, 2011)⁹. These indicators include Aceh's Human Development Index (HDI)¹⁰, Human Poverty Index (HPI)¹¹, Gender Development-related Index (GDI)¹² and Gender Empowerment Measure (GEM)¹³. While HPI shows a promising picture of development, the three other development indicators (HDI, GDI and GEM) provide a mixed picture of progress and decline. In order to situate this study in the broader context of development, these trends will be discussed in brief, following a short depiction of population growth.

The population of Aceh is around five million people; the population of Banda Aceh is 219,00 people. While population growth is not necessarily considered an indicator of development, it can point to some interesting trends to provide contextual understanding. As displayed in Figure 1.4, the population growth rate in Aceh has dropped in recent years; the decline has been much faster in Aceh than the rest of Indonesia. Reasons for the drop included higher mortality, declining birth rate and out-migration; all of these factors can be related to disruption caused by the conflict and a weakening economy (UNDP, 2011: 17). While some of the villages explored in this study support these trends, they point to complexities associated with population growth at the community scale, including push and pull factors such as access to livelihoods and governance structures.

⁹ At the request of the Government of Aceh, the Aceh Human Development Report (AHDR) 2010 was prepared by the UNDP with the intention of reviewing progress and serving as a reference for the future implementation of programmes (UNDP, 2011). The report was developed through consultations with experts, practitioners and local government departments and is a first for a province in Indonesia, though others are planned for the future. Data presented is up to 2008, the most recent year for which data was available at the time of publication.

¹⁰ The HDI was introduced by the UNDP in 1990 as an alternative way of measuring people's wellbeing. The HDI combines the following dimensions: life expectancy at birth, mean years of schooling, expected years of schooling and Gross National Income (GNI) per capita.

¹¹ The HPI was introduced by the UN in 1997 to complement the HDI. The HPI for provinces includes the proportions of the population that is not expected to reach 40 years of age, without access to clean water, without access to health facilities, and the proportion of under-nourished children less than five years of age; the HPI for districts also includes level of adult literacy (UNDP, 2011: 5).

¹² The GDI was introduced by the UNDP in 1995 to provide a gender dimension to the HDI. The GDI compares data for men and women on the basis of: life expectancy, adult literacy, years of schooling and contributions to household income.

¹³ The GEM was also introduced by the UNDP in 1995 to provide a gender dimension to the HDI. The GEM for provinces includes the proportions of women in the local parliament or assembly, in senior official, managerial and technical staff positions, and in the local labour force; the GEM for districts in Aceh also includes the average non-agricultural wage (UNDP, 2011: 5).

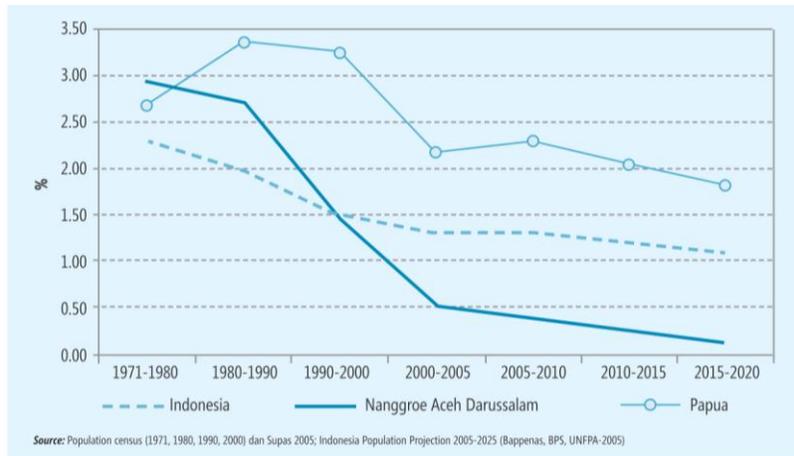


Figure 1.4. Population growth rate in Indonesia

Source: UNDP, 2011: 16

Figure 1.5 shows that poverty as measured by the HPI in Aceh has steadily declined at the provincial level and among all of the districts from 1999 to 2008. In addition, an analysis of the poverty rate displays that Aceh is somewhat lower compared to the other regions. The graphs indicate that levels of poverty have been decreasing since the 2004 disaster. On the other hand, displayed in Figure 1.6, Aceh's HDI¹⁴ shows an increase from 1996 to 2007 that is in line with national levels. However, compared to other provinces, Aceh fell from being 9th in national rankings in 1996 to 15th in 2002 and then 29th in 2008 with a drop to 67.1 (UNDP, 2011: 14). The early rise in HDI, followed by a fall in rankings indicates that the other provinces (that were not impacted by the 2004 disaster) are making faster progress (UNDP, 2011: 14).

¹⁴ Wisner in Pelling (2003: 46) describes a mathematical study of over 200 possible indicators of disaster risk vulnerability in order to come up with an index for use in its *World Vulnerability Report*. He describes the result to be "striking" and that the HDI turns out "to be the best predictor of deaths due to extreme natural events, world-wide, on average over the twenty years 1980 - 1999".

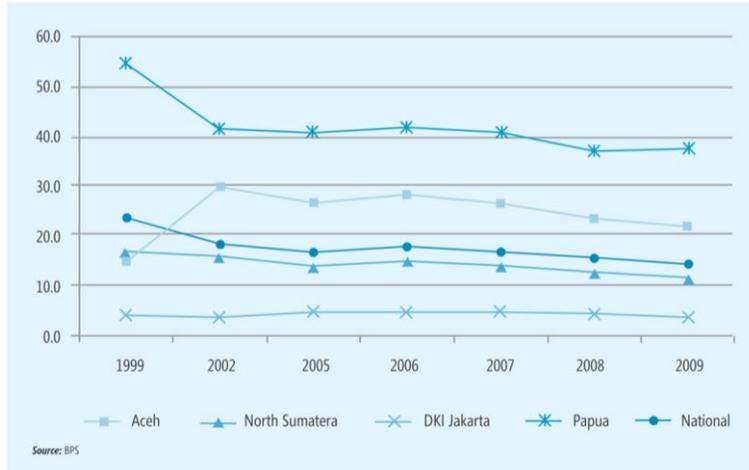


Figure 1.5. Poverty rate by selected provinces in Indonesia: 1999 – 2009

Source: UNDP, 2011: 15

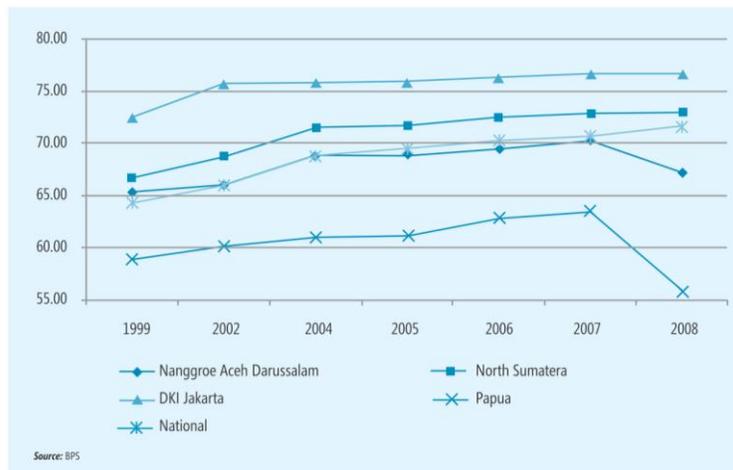


Figure 1.6. Selected provincial HDI in Indonesia, 1996 – 2008

Source: UNDP, 2011: 13

As depicted in Figure 1.7 below, the two indicators that are related to gender development in Aceh display some disappointing trends over the period 1996 to 2008. The GDI shows little progress and remains around the 60 mark and is a few points lower in 2008 than it was in 1996. The GEM has moved up and down, starting at a high of 57.3 in 1996 but standing at 50.2 by 2008 (UNDP, 2011: 14). Plausible explanations that are discussed in the AHDR for the mixed picture of gender include numerous advances and retreats in the position of women in Acehnese society. Some advances

include the increased capacity of civil society on gender justice issues, greater collaborations with the government on these issues, and the implementation of Shariah courts leading to greater rights for women in respect to inheritance and property. Some retreats in the GEM index are associated with the return of former male combatants to households, decreasing women's participation in the workplace and the average wage rates for females cited as being lower than males in most jurisdictions. While most of these explanations are situated in the macro scale (i.e., Aceh province), this study will incorporate gender as a crosscutting theme and explore implications at the micro scale (i.e., the local community). In particular, it will look at impacts on gender as a consequence of resettlement pattern.

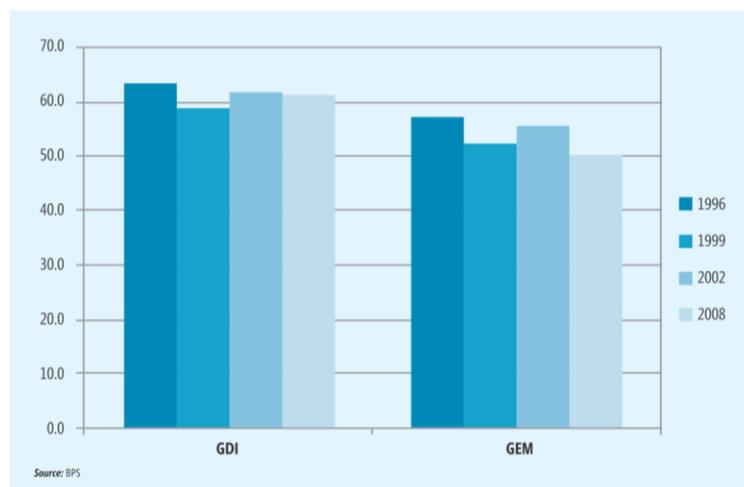


Figure 1.7. Gender-related development progress in Aceh, 1996 – 2008

Source: UNDP, 2011: 14

As indicated earlier in Figure 1.1, the village cases explored in this study are located in the region of Kota Banda Aceh (City of Banda Aceh) and in the region of Aceh Besar, which surrounds the provincial capital of Banda Aceh.¹⁵ The 2009 populations of these regions are approximately 212,241 and 312,762, respectively (BPS, 2010). As displayed in Table 1.2, both Banda Aceh and Aceh Besar are amongst the top five ranked regions of Aceh based on 2008 development indicators. Therefore, while findings of this study are relevant for other regions of Aceh impacted by the 2004

¹⁵ Locations of the villages will be indicated in later maps.

tsunami, they are representative of two regions that are in the higher end of development in the province, even prior to the disaster event.

Region/District	Rank HDI 2008	Rank GDI 2008	Rank HPI 2008	Average rank	Overall rank
Northern and Eastern Aceh (average excluding cities)	10.3	9.9	10.1	10.1	9.4
Aceh Besar	6	6	5	5.7	4
Aceh Timur	9	5	15	9.7	9
Kota Langsa*	3	10	4	5.7	4
Aceh Tamiang*	13	19	11	14.3	15
Aceh Utara	15	12	19	15.3	16
Kota Lhokseumawe*	4	21	3	9.3	8
Bireuen	5	2	8	5.0	3
Pidie	10	7	6	7.7	7
Pidie Jaya*	14	18	7	13.0	12
Kota Banda Aceh	1	3	1	1.7	1
Kota Sabang	2	8	2	4.0	2
Western and Southern Aceh (average)	16.7	16.9	15.6	16.4	17.1
Aceh Barat	11	16	20	15.7	17
Aceh Jaya*	12	15	12	13.0	12
Nagan Raya*	18	11	18	15.7	17
Simeulue	19	23	23	21.7	23
Aceh Selatan	16	14	9	13.0	12
Aceh Barat Daya*	20	17	13	16.7	19
Aceh Singkil	21	22	14	19.0	20
Subulussalam*	22	20	22	21.3	22
Aceh Hinterland (average)	13.8	6.8	16.0	12.2	11.8
Aceh Tengah	7	1	10	6.0	6
Bener Meriah*	17	4	16	12.3	11
Aceh Tenggara	8	9	17	11.3	10
Gayo Lues*	23	13	21	19.0	20
Aceh					
Average cities	6.4	12.4	6.4	8.4	7.4
Average original districts	11.5	10.6	13.3	11.8	11.5
Average new districts	16.7	13.9	14.0	14.9	15.1

Note: * Denotes new jurisdictions created after 1999
Source: BPS

Table 1.2. Overall ranking of jurisdictions in Aceh by development indicator

Source: UNDP, 2011: 21

The figures/tables above and associated descriptions display the development situation in Aceh using standardized measurements and indicators. However, as witnessed by the author during participation at consultation meetings on the AHDR, the reliability of data that has been used to

develop this illustration is questionable and a challenge that was raised by many key stakeholders. This is due to lack of standardized data collection mechanisms, gaps in data and possible errors in processing data. The report argues that "while specific numbers may be open to question, the larger trends implied by the data are more robust and are ultimately what is more important" (UNDP, 2011: 5). While the trends we have discussed do paint a broad picture of the state of development, they do not necessarily capture ground realities from the perspective of community recovery. This study aims to provide a more localized understanding of development by adapting some of the indicators used across the measures that have just been discussed to the community scale. Findings at the community scale, including in-depth perspectives of communities, can provide insights on reasons for the direction of these broader development trends.

1.3.7. Policy and practice environment

With the sheer magnitude of the destruction and loss of life in conjunction with pressure from the international community armed with extensive funding, government agencies, NGOs and donors were tasked with the recovery of Aceh across sectors in which many did not have expertise, including resettlement activities.¹⁶ A variety of strategies were put in place, which resulted in inconsistent processes being followed. Survivors who were previously renters and squatters (i.e., where they were not land owners) were among the poorest and most vulnerable victims of the tsunami, yet, were not included in resettlement policy until June 2006, when BRR recognized their needs (Fitzpatrick, 2007). It was at this time that BRR introduced a policy of cash grants for renters and squatters. It was only in 2007 that a policy of land and housing for renters and squatters was announced, enabling them to the provision of land and shelter. As a consequence, many of them were the last in line for housing assistance, adding complexities to some of the cases that will be explored in this study.

In instances of relocation in Aceh, there was an absence of any sort of formal standardized processes established by the local government or BRR for assessing the suitability of a site that had been identified for development as a relocation site, nor was there a procedure for determining which infrastructures would be put in place (da Silva, 2010: 51). As described by da Silva (2010: 51), rapid

¹⁶ Some examples of NGOs and donors involved in housing and shelter included: Oxfam, Islamic Relief, Turkish Red Cross, Plan International, BRR, Qatar Government, Saudi Government, Chinese Government, UNHabitat, Aceh Relief, Budda Tzu Chi Foundation, IOM, and so on.

assessments that were carried out used simple checklists on potential issues including site boundaries, susceptibility to landslide or flooding, ability to provide access to water, and so on.

Many existing academic and practitioner reports have provided critical accounts of what worked and what did not work in the context of post-tsunami Aceh. Most of these focus on the immediate response or short-term recovery. For example, the Tsunami Evaluation Coalition (TEC) conducted five independent studies in 2005 that led to the identification of a number of weaknesses in the international response.¹⁷ Reports allude to valuable lessons such as:

Supply-driven, unsolicited and inappropriate aid...unsuitable housing designs and livelihood solutions... aid has led to inequities, gender and conflict-insensitive programmes, indignities, cultural offence and waste...poor understanding among the media and donor public...brushing aside or misleading authorities, communities and local organizations; inadequate support to host families; dominance of English as a 'lingua franca'; 'misrecognition' of local capacities; applying more demanding conditions to national and local 'partners' than those accepted by international organizations; 'poaching' staff from national and local entities; and poor quality beneficiary participation (Telford and Cosgrave, 2007: 21).

The governments and the international community alike have been overly optimistic about rehabilitation to development transitions and have failed to consider the real challenges. This is due to lack of analyses of the markets that affect livelihood opportunities and insufficient acknowledgement of how resettlement must link house construction to the development of communities. (Christoplos, 2006: 80)

Long-term assessments of recovery outcomes, however, remain limited. Best practices and lessons learned from the recovery in Aceh have been used toward implementing recovery strategy in other major disasters even though long-term impacts of these practices on recovery and development have not necessarily been monitored prior to adapting them in other contexts. For instance, factors that influence the success of a relocation project have not been evaluated, since several of these relocations were completed some years after the initial international response. In spite of this, relocations after other disasters since (i.e., the 2010 floods in Pakistan) have followed similar relocation strategies that are primary focused on the provision of shelter and the movement of houses away from a hazard. This study aims to develop policy implications that will enable better informed

¹⁷ These studies included findings on 1) the impact of the response on national and local capacities (Scheper et al., 2006); 2) needs assessment; 3) coordination of the international humanitarian assistance (Bennett et al., 2006); 4) linking relief, rehabilitation and development (Christoplos, 2006); and funding (Flint and Goyder, 2006).

relocation strategies that can facilitate positive recovery outcomes after disaster. In doing so, findings aim to address an expressed need for the long-term evaluation by researchers on positive relocation policy (Imura and Shaw, 2009).

1.4. Timing of this study

At the time of fieldwork (2011), the Government of Indonesia considered post-tsunami recovery activities in Aceh to be relatively complete (Subekti, 2009). This meant that built and physical infrastructure had been restored, international aid agencies had downscaled their local offices and the majority of non-governmental organizations (NGOs) had left. Donor and government funded projects had wrapped up and the national reconstruction agency (BRR) had been closed down since 2009.

Characteristics of the **long-term recovery** stage are not well defined. However, for purposes of this study, the state of Aceh at the time of fieldwork will be defined as falling in this stage. As few foreigners and outsiders remained in Aceh (for example, NGOs), it was an ideal time to observe the transition between NGO-led recovery and ongoing development. In addition, enough time had passed since the disaster for individuals to speak on the topic without hesitation, yet memories were still vividly clear. The current stage of recovery was also an appropriate time to conduct fieldwork on resettlement, as the majority of affected people had moved into their permanent residences two or more years ago and had built new patterns to give a level of normality to their daily lives.

1.5. Dissertation outline

This chapter provided a background on the Indian Ocean Tsunami and the region of Aceh. It pointed to a number of existing challenges and opportunities that motivate this study. The chapter outlined the research objective, research setting and major research questions that will be explored in this dissertation through a comparative case study research design.

In order to position this study within broader literatures, Chapter Two will discuss major trends in disaster recovery literature and specific gaps that will be addressed through this research. The guiding approaches and framework for this study will also be outlined in this chapter.

Research design and detailed methodology will be described in Chapter Three. This includes elements of a comparative case study approach, case study selection criteria, data collection

methodologies, and data analyses. Ethical considerations faced by the researcher over the course of fieldwork are also described.

Chapter Four presents the bulk of the data that was collected during fieldwork. Contextual data on the overall state of recovery in Aceh is included here, along with detailed descriptions of each case study explored in this research.

Chapter Five applies one component of the research framework described in Chapter Two to understand and determine the level of community recovery across the case studies. The chapter will take readers through a process of developing a multidimensional index in order to systematically measure the dependent variable in this study (i.e., community recovery). Case ranking techniques are used to draw correlations across different dimensions encompassed by the index.

Chapter Six explores independent and intervening variables that influence community recovery outcomes. This is done through a 'placeness' analysis developed out of thematic qualitative data analysis and is complemented with case comparisons. Specific influencers and mechanisms are described and discussed.

The dissertation concludes with Chapter Seven. The chapter summarizes findings and situates them within the broader literature. The chapter draws policy and planning implications based on the study, acknowledges limitations of the research and suggests future work.

CHAPTER TWO: LITERATURE REVIEW AND FRAMEWORK

This chapter reviews and situates the current study in key literatures of disaster recovery. It further identifies research gaps that this study seeks to address. Drawing from the literatures reviewed, a conceptual framework that structures an exploration of the research questions outlined in Chapter One is developed.

2.1. Landscape of hazards and disaster research

Professor Gilbert White (1975) and his colleagues conducted the first major survey of research on hazards and disasters over 25 years ago. Their 1975 publication of an *Assessment of Research on Natural Hazards* was critical in paving the way for an interdisciplinary approach to the research and management of hazards and disasters; the approach has continued to extend across the social sciences (Mileti, 1999; Tierney et al., 2001). As described in more recent assessments, the amount of research that is currently available on hazard and disaster related topics has increased exponentially over the last three decades, since the first USA assessment (Tierney et al., 2001; NRC, 2006). One of the most recent surveys carried out by the National Research Council (NRC) points to current research spanning across five mainstream topics of hazards and disaster. As depicted in Figure 2.1 below, these include: hazard vulnerability, hazard mitigation, disaster preparedness, emergency response, and disaster recovery. Four of these - mitigation, preparedness, response and recovery - are also often considered phases of the traditional disaster cycle. As indicated, this study makes contributions specifically to this study of recovery.

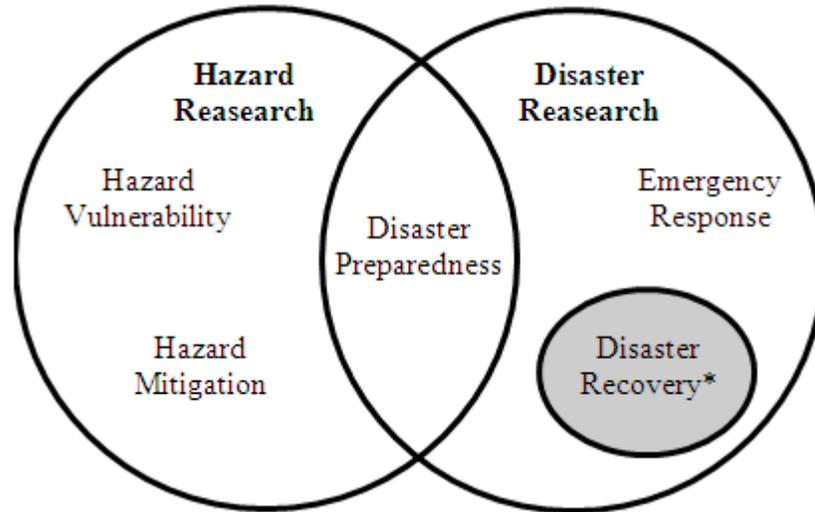


Figure 2.1. Core topics of hazards and disaster research *Topic of this study

Source: After [NRC, 2006: 2]

The overlapping circles and two-directional arrows outlined by Figure 2.1 point to an ongoing need to study hazards and disaster research through an integrated approach with essential interactions among topics (NRC, 2006: 21). Notions of resilience and adaptation surface across these concepts. While this dissertation focuses specifically on the topic of disaster recovery, this study situates itself within the broader single overarching framework of Figure 2.1. For example, the definition of recovery that has been outlined defines it as ‘the restoration and improvement of living conditions of disaster affected communities’ and the approach situates recovery within a framework of disaster risk reduction and development. Disaster risk reduction and development inherently imply reduced hazard vulnerability and increased disaster preparedness through measures of hazard mitigation and stronger emergency response. To provide a broad overview, the next three paragraphs provide brief insights on these topics before recovery literature is explored in considerable depth in Section 2.2.

The arena of hazard vulnerability includes research in areas of physical vulnerability and social vulnerability. Physical vulnerability includes the study of threats to physical structures and infrastructures, the natural environment and related economic losses (NRC, 2006). Social vulnerability refers to underlying social conditions that affect a community’s ability to prepare for and recover from impacts of a hazard (Wisner et al., 2004; Anderson and Woodrow, 1998; Cutter et al., 2003). Current research on social vulnerability has explored characteristics that are associated

with social vulnerability and factors that contribute to social vulnerability. Some examples include gender, age, race, ethnicity, profession, access to resources, social capital, social networks, beliefs, culture, customs, political power, built environment, urbanization, growth rate, economic viability and infrastructure (Cutter et al., 2003, Heinz Center, 2002, Bankoff, 2004). While this study does not directly address physical or social vulnerability and related literatures, the approach acknowledges that in an ideal world an understanding of hazard vulnerability would inform recovery practice in order to address root causes and minimize susceptibility to future disasters (for example, as shown in Yasui, 2007).

Hazard mitigation research includes the development of understandings of structural (e.g., building construction and renovating infrastructures) and non-structural (e.g., land-use practices and regulating residence and development in areas of hazard) activities that reduce the likelihood of disasters occurring or the severity of their impacts when they occur. Discussions on some of these activities will come up at various stages of the dissertation. For example, relocating communities and continuing to encourage relocation will be discussed as a land-use strategy of the Government of Aceh. While implications of these strategies will be touched upon, the dissertation will not go into the actual impacts from a perspective of hazard mitigation.

Disaster preparedness research includes areas of action taken prior to when a disaster happens and includes tools and procedures for use when a disaster occurs. Some examples include: formal disaster plans, the training of first responders, the establishment of public education, and financial protection schemes (NRC, 2006). Emergency response includes activities related to predictions, warnings, evacuations, protections, damage and needs assessments, search and rescue, restoration of public services, and so on (ibid.). Preparedness activities (i.e., evacuation signs and escape buildings) and emergency response activities (i.e., disaster drills) will be mentioned across the communities explored in this dissertation. However, impacts of these activities on community recovery will not be covered.

2.2. Disaster recovery literature

Many researchers agree that the disaster recovery phase remains the least researched and most poorly understood of the four phases of the traditional disaster cycle – mitigation, preparedness, response and recovery described above (Berke et al., 1993; Comerio, 1998; Mileti, 1999; Chang, 2010). As such, research on disaster recovery remains a relatively recent but growing area of

academic inquiry. While largely drawing from interdisciplinary areas of inquiry, the vast majority of disaster recovery studies that have been conducted are in the field of sociology (Quarantelli, 1992; Bolin, 1994). However, academic literature on the management of post-disaster recovery processes in the discipline of planning is increasingly being recognized as a new and important area of research and one to which this study aims to contribute (Olshansky & Chang, 2009).

2.2.1. Major trends in existing literature

A review of existing literatures in disaster studies, planning and sociology finds several major shifts in understandings of the recovery process. It is intended that the direction of this research project will contribute to advancements in understanding disaster recovery alongside these shifts. As elaborated upon below, these include an understanding of recovery as a dynamic rather than stage-like process and an increased recognition of social dimensions (i.e., social elements and mechanisms) of a holistic recovery process.

It was not until the 1970s that early studies on reconstruction and recovery were conducted; nevertheless, the area of research remains in its infancy to date (Bolin, 2006). These initial works on disaster recovery approached the recovery process through sequential stages. Notably, one of the first comprehensive studies on recovery is work by Haas et al. (1977). In their study on “Reconstruction Following Disaster”, the researchers develop insights through examining four major disasters – the 1906 San Francisco earthquake, the 1964 Alaska earthquake, the 1972 Rapid City flood, and the 1972 Managua Nicaragua earthquake. The exploration shows disaster recovery to extend across four chronological periods, claiming that disaster recovery is “ordered, knowable and predictable” (p. xxvi). Each period is associated with certain types of activities, as indicated:

- 1) the emergency period: occurs during the immediate aftermath when the community is forced to cope with damage and destruction in terms of assets, lives and injuries;
- 2) the restoration period: involves restoring utility, housing, commercial and industrial structures, if possible, as well as a return to relatively normal functioning of social and economic activities;
- 3) the replacement reconstruction period: occurs when the capital stock is rebuilt to pre-disaster levels, and social and economic activities return to pre-disaster levels or greater; and
- 4) the commemorative, betterment and developmental reconstruction period: includes activities to commemorate the disaster, fix damages and work toward future growth and development (Haas et al., 1977: 2-3).

Over time, researchers have found Haas' classic model to be too simplistic, compared to what reality portrays (Rubin et al., 1985; Bolin, 1994; Vale & Campanella, 2005; Olshansky & Chang, 2009; Edgington, 2010). For example, in their research looking at fourteen case studies of communities recovering from natural disasters in the USA, Rubin et al. (1985) find that the stages overlap and in many cases occur in simultaneous or illogical sequences. This and other studies have marked a shift away from approaching recovery in a temporal and stage-like fashion to a continuum of dynamic processes. The shift has contributed to an interest in exploring elements that influence the recovery process and lead to different recovery outcomes. For instance, Rubin et al. (1985) focus on the importance of three key elements that interact to produce a recovery outcome – the presence of personal leadership, the ability to act, and the knowledge of what to do. Others, for example, emphasize the importance of the nature of citizen involvement, the role of individual volunteers and local leaders, and the influence of rebuilding plans on property rights (Olshansky, 2005). Some existing studies looking at recovery in post-tsunami Aceh also point to specific elements influencing community recovery outcome (Thorburn, 2010; Mahdi, 2009; Kenny and Clarke, 2010). For example, Thorburn (2010) points to key determining factors for successful village recovery including elements of governance ranging across leadership (i.e., the breadth and depth of village leadership), decision-making (i.e., number of village meetings), transparency and accountability (i.e., direct village elections). All of these studies support the growing need to look beyond general models of recovery.

As stated by the National Research Council, to date there is little research available on what actually happens in communities during the recovery process or what communities can do to allow for rapid and successful recovery outcomes (NRC 2006: 167). Similarly, recent research portrays a need to develop greater insight on not only elements in the recovery process, but also the mechanisms involved in recovery (Vale & Campanella, 2005). For instance, Berke et al. (1993) emphasize that recovery processes and outcomes are shaped by factors of participatory decision-making, horizontal community integration (i.e., social networks across community organizations), and vertical integration (i.e., links between communities and higher levels of government). Similar to these findings, many of the mechanisms that have emerged from recovery observations have highlighted the important role of social mechanisms and social dimensions and the need for further inquiry on these roles.

Concurrently, researchers have started to stress recovery as a social process that is based on the social dynamics of societies (Berke et al., 1993; Mileti, 1999). Many theorists now recognize that disasters are the product of interaction between natural and social factors (Wisner et al., 2004; Pelling, 2003). As a consequence, understandings of recovery have shifted towards being more encompassing in nature, with increasing attention being placed on the multi-dimensional attributes of the concept, occurring concurrently. In this sense, recovery is portrayed as, “simultaneously the production of physical form, the creation of social, cultural and symbolic resources, and the outcome of a negotiated/facilitative process” (Boano, 2009: 3661).

Attention to social dimensions of recovery includes the recognition that damage to the physical environment is often accompanied by the breakdown of social networks, social cohesion and social capital. The role of concepts such as social capital in disaster recovery is an emerging area of recovery research (Nakagawa & Shaw, 2004; Berke et al., 2008; Aldrich, 2012). For example, Nakagawa & Shaw’s (2004) study on social capital as the “missing link” in disaster recovery displays promising results on the potential for social capital as an indicator for successful recovery. The researchers develop a model for social capital from the 1995 Kobe earthquake experience and apply it to four different communities affected by the 2001 Gujarat earthquake. Results show that the community with the highest social capital corresponds to the community with the highest satisfaction rate for the new town planning and the fastest recovery rate. Aldrich’s (2012) exploration of four distinct communities – Tokyo after the 1923 earthquake, Kobe after the 1995 earthquake, Tamil Nadu after the 2004 tsunami, and New Orleans after the 2004 hurricane – demonstrates that the presence of strong social networks enable a more coordinated recovery process and the ability to rebuild beneficial community ties.

Coupled with the emphasis on social dimensions of recovery is an increased recognition of the concept of *holistic* recovery. The concept of *holistic* implies recovery that “can address economic, political and social needs – not only rebuilding infrastructure and housing, but opening the way for more resilient livelihoods” (Wisner et al., 2004: 354). Wisner (2004: 354) also indicates that in practice, the implementations of recovery in this type of way “requires reversing (or at least substantially palliating) the dynamic pressures and root causes that have contributed to the disaster in the first place”. Though few studies have approached recovery in such a broad way, this study will do so in accordance to an emerging ‘systems approach’ – one that views regions as systems with linkages and interactions across elements such as sectors, geographic space and networks (Olshansky

& Chang, 2009). The particular emphasis in this study will be on key interrelationships between place-based resettlement typologies, attributes of place and recovery outcomes. In addressing a *long-term* framework, this study moves away from understanding recovery as an end state or return to normalcy, but rather explores recovery as a process that can be enabled through surrounding factors and conditions.

2.2.2. An opportunity to build back stronger

Several researchers have acknowledged that disasters can open rare windows of opportunity for instituting long-term change (for example Olshansky & Chang, 2009) and altering the course of development. In his paper on the recovery process, Quarantelli (1999: 3) poses the question, “is it enough to bring back the past, or is something new or different necessary?”. From a practitioner perspective, any recovery activity following a disaster that fails to reduce the population’s exposure to risks is “merely sowing the seeds for future disasters” (IRP, 2007: 3). In the development community, risk reduction is becoming increasingly recognized as an integral component of successful disaster recovery policy and programming. For instance, the UNISDR definition of recovery that has been adopted by many actors in the NGO community is: “the restoration, and improvement where appropriate, of facilities, livelihoods and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors” (UNISDR, 2010).

The recovery stage provides opportunities for mitigation and perhaps the chance to break the cycle of destruction due to disaster. For example, many researchers emphasize that future vulnerability can be reduced and community resilience improved through incorporating hazard mitigation measures such as developing minimum building codes and land use regulations (Berke et al., 1993; Reddy, 2000). Yasui’s (2007) study of recovery in two communities after the Kobe earthquake demonstrates that certain development practices and capacity building efforts employed during a recovery process reduced overall community vulnerability. Other researchers insist that a good recovery program begins with a serious commitment to incorporate mitigation and preparedness strategies to reduce future damage (Comerio, 1998: 27). In his study of long-term recovery of three communities of South Carolina struck by Hurricane Hugo in 1989, Reddy (2000) emphasizes that for the successful incorporation of mitigation during recovery, there is a need to adapt mitigation strategies to dynamic local conditions. This would take into account strategies that reflect the local area, take into account all stakeholder values, and can be adapted to changing political, economic and technological conditions.

In reality, the recovery stage brings about unique challenges for both researchers and practitioners, due to compressed time, higher stakes, increased financial resources and intensified public scrutiny (Olshansky & Chang, 2009: 200). Usually, time is the most important factor influencing recovery decisions, actions, and outcomes (Mileti, 1999: 233). Therefore, the pressure to restore normalcy in response to victims' needs often compromises or leads to the abandonment of what could be promising community development strategies, including vulnerability reduction measures like those described above. There is a common underlying belief that effective rebuilding depends on the speed of construction, albeit this may not necessarily be true. For example, when faced with significant damage and social disruption to a city, priorities tend to change and new possibilities for the future emerge. As a consequence, "the desire to quickly return to normal, insofar as possible, runs head on into the desire to insure, if possible, that the catastrophe will never be repeated locally" (Haas et al., 1977: 43).

Similarly some view destruction as an ideal time for "instant urban renewal", an opportunity to replace a deteriorating area with new, modern lands and structures (Haas et al., 1977: 49). Similarly, the recovery period is a chance to upgrade the quality of construction to resist future disasters and an opportunity to advance programs (such as urban renewal or traffic management strategies) already in place (Mileti, 1999: 236). Therefore the concept of redevelopment can be embodied in theorizing recovery. Redevelopment can be defined as a process that "alters the design of structures and facilities or the types or patterns of land uses so as to enhance the community in one or more ways" (Schwab et al., 1998: 258). Thus, the disaster context can be seen as an opportunity to speed up plans for change or to bring about new changes to a community.

Also important to note is that disasters do not generate change themselves, but rather often tend to intensify or speed up pre-existing patterns. Researchers have shown that disasters have greater impact on those most vulnerable, and also often exacerbate pre-existing vulnerabilities. On top of this, certain recovery approaches can induce and/or deepen these vulnerabilities. In their study of post-disaster recovery following the Northridge earthquake in Los Angeles, Bolin and Stanford (1998) show how pre-existing community vulnerability affected community-level recovery. Through their case studies they demonstrate that when recovery programs do not address root causes of vulnerability, there is a likelihood of failure. In his study of recovery after the 1976 earthquake in northern Italy, Geipel (1982) finds that disasters highlight existing cultural, social and economic

conditions that shape the recovery process. He also found a desire by citizens to return to normalcy, which goes against plans by planners who proposed change, pointing to a need for balance.

2.3. Gaps in existing recovery research that this study seeks to address

In addition to extending the growing exploration of the role of social dimensions in the holistic recovery process, this study seeks to contribute to a number of distinct needs evident through a review of disaster recovery literature.

2.3.1. Efforts to understand and measure community-scale recovery

To date there is no consensus definition on what recovery means, how it should be measured, or what constitutes ‘successful’ recovery (Olshansky & Chang, 2009). This is because researchers studying recovery continue to struggle with a legacy of conceptual and practical measurement difficulties associated with the concept (NRC, 2006). These include, for example, variations on whether recovery is a return to pre-disaster conditions, or whether it is approached on a continuum of development. In spite of this and other challenges, there is a notable need for advancement, particularly in respect to recovery measurement. For example, in surveying both the research community and practitioner community for their research, Artlikatti et al. (2010) point to an expressed need for a broad-based toolbox of systematic cross-cultural measures of disaster recovery.

Methodologies for measuring recovery across different scales remain limited; existing methods include the use of statistical data (for example, Chang, 2010; Finch et al., 2010; Beniya, 2007), survey tools (for example, Tatsuki, 2007; Bourque et al., 2002); qualitative research methods (for example, Bolin & Stanford, 1991; Ganapati & Ganapati, 2009), computer modelling (for example, Miles & Chang, 2006) and remote-sensing imagery (for example, Brown et al., 2008). The need for qualitative methods are of growing importance out of recognition that though quantitative indicators can show measurable change, it is necessary to have non-quantifiable insight on underlying factors, reasons and processes (Chang, 2010: 322).

As discussed in the previous section, the Haas et al. (1977) model describes recovery to proceed in a linear and orderly fashion to an inevitable end result of recovery. However, many researchers since have suggested contrary opinions. For example, in respect to measurement, Rubin et al. (1985: 14) emphasize recovery as an ongoing process and, consequently, something that is difficult to measure one time and have that suffice. As a result and due to recent conceptualizations

accepting recovery as a dynamic and endless process, the identification of outcomes and indicators of recovery has become a challenging endeavour (Brown et al., 2008). Recovery often occurs unevenly across sectors in the community. For example, the local government administration may recover before the local economy, some individuals before others, and so on. This poses methodological challenges when measuring recovering, especially when looking to measure holistic recovery across a community.

Measurements of successful recovery will face evaluator bias, in which a community might consider their recovery unsuccessful, while the province or higher levels of government deem it to be so, on the contrary (Brown et al., 2008). The degree to which recovery has taken place is very much a matter of perspective and social position. On the basis of objective social or economic indicators, a community may be considered recovered, whereas in reality social units may not be doing well in objective or subjective terms (NRC, 2006: 149). Brown et al. (2008) caution against prematurely determining the success or failure of recovery, suggesting that it takes several years for observations to be valid. Particularly in the developing world, the recovery process is likely to be strongly linked to funding strategies and timelines of donors and government officials. Additionally, a key central issue in post disaster recovery is the tension between speed and deliberation with conflicting demands on time (Olshansky & Chang, 2009: 207).

Some suggest that under ideal circumstances all scales be analyzed together such that for example, a study of individual households would include information about their community and a study of community would include an understanding of individual household attributes (Brown et al., 2008: 2). However, most disaster recovery studies have focused on individual, family and household recovery (Bolin & Stanford, 1998; Bates & Peacock, 1993; Quarantelli, 1999; Tatsuki, 2007). Consequently, indicators for these scales are more developed than the community scale, with both objective and subjective measures. For example, Bates and Peacock's (1993) domestic assets index (DAI) has been used to record changes in a household's physical assets by measuring changes in available assets used for household activities before and after a disaster (i.e., items within ten functional areas: shelter, food preservation, food preparation, sleeping, human waste disposal, bathing, clothes washing, dish and utensil washing, water heating, and communications). Evidently very specific to households, there remains a need for approaches to systematically and holistically measure community-scale recovery. This study will contribute to understandings of some of these complexities associated with disaster recovery measurement specific to a community scale.

Research on community-scale recovery is more limited (Rubin et al., 1985; Yasui, 2007; Alesch et al., 2009; Chang 2010). In an early study, Rubin et al. (1985) assert community recovery to encompass restoration in all domains of community life: residential, business, public services and facilities, general population, and mitigation. Mileti (1999) stresses the many dimensions of community recovery to include residential, commercial, industrial, social, and lifelines. Recent work on community recovery supports a systems approach to the concept. For example, considered a complex component of community recovery is the restoration of infrastructure and lifelines that support system operations that are necessary for normal activities, such as systems that are dependent on transportation, electricity, water, waste disposal, etc. (Peacock et al., 2006). Though frameworks such as those mentioned above provide valuable insights on the nature of community recovery, the question remains as to why some communities recover more successfully than others. This study will explore answers to this complex question. In addition and similar to inquiry on community-scale recovery, there is need for further research on *long-term* recovery¹⁸, given the limited number of studies that have focused on this time frame (Chandrasekhar, 2010; Edgington, 2010). The time frame is of significant importance in the context of this study in the developing world, due to overlap with an ongoing course of betterment.

2.3.2. Insights on the role of post-disaster resettlement on recovery and development

Terminology used by disaster researchers for actions taken in the aftermath of a disaster such as reconstruction, restoration, rehabilitation, rebuilding, restitution, resettlement and recovery are frequently used with inconsistency (Quarantelli 1999). For the most part, distinctions between and associations among concepts are not yet developed in the disaster literature. This research specifically addresses the nature of the relationship between the concepts of resettlement and recovery.

While studies of post-disaster resettlement are sparse, studies on resettlement are not. Most investigations on resettlement have been conducted by researchers looking at development-induced relocation due to development initiatives, such as dam construction (McDowell 1996; Oliver-Smith 2009). Many of the studies tend to refer to resettlement as corresponding to relocation, though not all do so (for example, Iuchi, 2010). Of the few researchers who have addressed the topic of resettlement

¹⁸ In this study, long term will be defined as over six years after the disaster.

of populations after disaster, most prominent is the work of anthropologist Anthony Oliver-Smith. Oliver-Smith (1991: 13) argues that the process of resettlement is far “more complex than is seen in the approach employed by many reconstruction authorities after disaster”. He discusses features that lead to the success and/or failure of post-disaster resettlement projects, grouped by factors of site, layout, housing and community input. For example, failures include poor site selection due to easier attainment of land and greater accessibility and topography for rapid construction, at the expense of being situated far from resources, employment, previous village and kin. Layout failures may include monotonous and uniformed designs without adequate consideration for cultural norms and spaces. Housing issues include inferior use of material, construction that is too small for large families, loss of privacy and inappropriateness for domestic activities. Community input is cited as a strong indicator of success or failure, with minimum consultation leading to a lack of recognition of needs. Successful resettlement is linked strongly with community ownership and responsibility.

Oliver-Smith (1991: 14) alludes to the need for further exploration through concrete cases looking at factors that have a positive versus negative impact on resettlement. In addition, he writes that, “although disasters account for a significant proportion of resettlement projects, disaster research has yet to fulfill its potential for contributing to this growing body of theory”. Imura and Shaw (2009: 206) find that “from the academics’ viewpoint, relocation in disaster recovery is a recognized negative activity which international organizations do not fully understand”. To date, there is no well-accepted model for resettlement in the context of post-disaster recovery. The few studies that have been conducted on post-disaster resettlement point to a need for further exploration on ways to facilitate effective resettlement (Comerio, 1998; Ingram et al., 2006; Boano, 2009).

The classic and central resettlement model cited by researchers in the realm of development-forced displacement remains the Scudder/Colson model (Scudder, 1985). Scudder and Colson draw on their work with the Kariba Dam project in Zambia to posit that involuntary resettlement occurs in four stages: 1) planning and recruitment (when planning for resettlement and infrastructure starts and settlers are recruited), 2) transition (when displacement begins), 3) economic and social development (when settlers seek social and economic functions), and 4) handing over and incorporation (when newly established social and economic functions are stabilized). With monetary compensation being the main element driving resettlement, the model has limited relevance to post-disaster applications. A newer model, Cernea’s theoretical *Impoverishment Risks and Reconstruction* model (2000) is directed toward improving the living conditions of affected populations after development-induced

displacement. The model focuses on elements of landlessness, joblessness, homelessness, marginalization, food security, loss of access to common property resources, increased morbidity, and community disarticulation as risks for resettlement failure (Cernea & McDowell, 2000). Elements demonstrate an overlap with attributes of place, though the model is very much focused on risk as opposed to recovery. With the lack of a model specific to post-disaster recovery, this study aims to contribute to understandings of resettlement as a component of recovery. Findings may also contribute to narrowing the gap between the currently divided literatures of disasters and development-forced displacement and resettlement (Button, 2009).

Relocation and resettlement policy in international organizations are pursued as more of a development policy than a disaster recovery policy (Imura and Shaw, 2009). When viewed from a relocation perspective, early works by international organizations recognized that relocation of settlements should be a last option in the recovery process (for example, ADB, 1998; UNDRP, 1982). Resettlement sites may lack meaningful livelihood opportunities, or basic infrastructure, among other social considerations. Most policy papers and guidance notes from international organizations (for example, Jha, 2009) portray resettlement projects as being negative and meeting frequent resistance, mainly because they posit a future disruption of a community and require further adaptation than simply due to the direct impacts of the disaster. Current researchers and practitioners argue that resettlement ought to be avoided or minimized whenever possible. Consequences of resettlement may even be considered to cause more grief than the disaster itself (Oliver-Smith, 1991: 13). Nevertheless, resettlement is most often pursued as a necessity, due to the high vulnerability of the population to future hazards. In other cases, however, resettlement may be pursued to manage issues such as those of land use, population growth and economic incentives. Following the 2004 tsunami, some estimates indicate that over 30,000 households in Aceh were unable to rebuild homes on the land that they previously occupied primarily due to flooded land or flooding protection measures (Wegelin, 2006: 5). As a consequence, there are cases of large settlement just outside of city centers, in areas where land was more readily available.

Relocation has been shown to perpetuate and create new vulnerabilities for communities (for example in Oliver-Smith, 2009; Ingram et al., 2006). In their research, Ingram et al. (2006) looked at the impact of the massive relocation of affected populations after the 2004 tsunami in Sri Lanka. Results showed significant negative social, economic and environmental impacts. These for example included: 1) limited livelihood opportunities, especially among fishermen who were unable to

continue fishing due to the location of the new sites; 2) disrupted communities at sites where different communities with different social, economic and cultural backgrounds were brought together; and 3) new sites threatened by both coastal and inland ecosystems.

Similarly, Boano (2009) has studied post-tsunami Sri Lanka, a context where large numbers of victims have been resettled in villages and new urban settlements and imposed to a completely new geography. She defines the post-tsunami era in Sri Lanka as having two overlapping phases: the aftermath of the disaster and the aftermath of the relocation. Through her fieldwork in villages of affected areas of Sri Lanka, Boano finds that transitional shelters were built using inappropriate materials that lead to hot, uncomfortable and unhealthy conditions, and that several permanent housing structures were poorly designed and constructed due to lack of skills and expertise. Additionally, she finds that there was no consideration given to livelihood-facilitating resources in the selection of areas of relocation sites. She points out other reconstruction issues, such as the need for people to provide documents of proof of land ownership before being granted any reconstruction assistance, subjecting those without these documents vulnerable to discrimination and feelings of helplessness.

While, these works show mostly adverse immediate impacts, there remains a need to gain insights into the long-term consequences and impacts of post-disaster resettlement and reconstruction in disaster-affected areas. Badri et al. (2006) focus on the 1990 Manjil earthquake in Iran, conducting a questionnaire survey on relocated households 11 years after the disaster, in a settlement that later became a town. Findings point to dramatic and complex changes with significant negative socio-economic consequences for affected households such as a loss of access to natural resources, competition for jobs resulting in weakened social networks, reduced cooperation, increased unemployment for farmers and increased poverty. The authors conclude with recommended measures needed to reduce long-term negative impacts of resettlement such as the diversification of economic activities. Abe et al. (2012) explore a post-tsunami resettlement village in Sri Lanka and find that in order for decision makers to enable sustainable relocation, there needs to be special attention given to social impacts such as internal and external human relationships (for example, relationships between a new settlement as a host village), and factors such as the tendency for return an original location

2.3.3. The role of participation in the recovery process

In recent efforts to explore social dimensions important to disaster recovery, a number of researchers have started to emphasize the role of participation in the recovery process (Ganapati & Ganapati, 2009; Kweit & Kweit, 2004; Berke et al., 2008; Olshansky, 2005). Some of this literature argues that in theory, when participatory approaches and full stakeholder involvement is incorporated into recovery and rebuilding processes, the outcome is a better informed, prepared and therefore more resilient community (Vale & Campanella, 2005). In-depth descriptions from Edgington's (2010) study of the 1995 earthquake in Kobe display challenges in implementing recovery plans when local citizens are not involved and left disempowered. A common theme emerging from literatures is that organizations, institutions and policymakers would like to accomplish the goal of community participation. However, how to effectively do this within the specific conditions, restrictions and time-sensitivity of the recovery process remains a challenge (Davidson et al., 2007).

The importance of participation is considered pivotal in many disciplines. For example, in planning literature, researchers advocate for participation as it empowers people and communities while enhancing self-sufficiency (Friedmann, 1992). Similarly, principles of public participation in decision-making are considered central to planning practice and are analyzed and operationalized through various conceptual tools; for example, the 'ladder of participation' developed by Arnstein (1969) and adapted by Choguill (1996) to fit the context of developing countries. Choguill's ladder displays the lowest to highest forms of participation as: self-management (lowest), conspiracy, informing, diplomacy, dissimulation, conciliation, partnership, and empowerment (highest). The ladder displays that participation can include the support, manipulation, rejection and/or neglect of community demands, and that people's self-determination plays an important role in improving their own conditions (Choguill, 1996). These and other literatures point to the importance of empowerment as a core element of true participation.

A deeper understanding on how elements of participation come together on the ground remains a pressing area of exploration in disaster recovery. For example, insights from Ganapati & Ganapati's (2009) study on participatory planning in housing reconstruction following the 1999 earthquake in Turkey stresses a need for larger numbers of case studies highlighting the suitability and influence of participatory mechanisms on the overall reconstruction process. Observations from Davidson et al.'s (2007) exploration of four case studies of post-disaster housing reconstruction (Columbia, El Salvador, and two in Turkey) point to discrepancies in interpretations of participation

with usage varying to include civil debate, communication, consultation, delegation, partnership, self-help, and/or communal meetings. The analysis finds that the participation of users in up-front decision-making during the project design and planning phases (including for example, the ability to make meaningful choices among options offered) leads to positive building process and outcomes. However, they find that this level of participation is rarely achieved and therefore the capabilities of the users are wasted. In his paper based on an international workshop on community risk assessments, Pelling (2007) writes of the need to distinguish between exploitative and emancipatory participatory approaches. He describes exploitative approaches as the dominant practice, and as merely instrumental mechanisms for reducing financial costs or for extending the sustainability of projects by promoting feelings of ownership. Emancipatory approaches, on the other hand, seek to “provide space for stakeholders to develop their own self-confidence and skills to challenge prevailing local and wider structures of domination” and are less common (Pelling, 2007: 375).

Several documents explore why meaningful participation was difficult to establish in the context of post-tsunami Aceh. For example, some reasons include: the complexity of the situation meant there was a need for more comprehensive planning methods than the widespread approach used by humanitarian agencies of simply asking for lists of priorities; participation rewarded those with strong narrative skills portraying themselves as victims; the manipulation of participatory planning processes of the aid community by aid recipients; and the difficulty in combining essential regulatory functions with participatory processes within time-sensitivity (Christoplos, 2006: 75). In another document, reasons cited include: programmes being supply-driven and disenfranchising for people to take ownership of recovery, aid actors having little understanding of behavioural drivers of post-disaster decisions by communities; and aid actors allowing people to only participate in micro scale issues and not wider governance decisions (Dercon and Kusumawijaya, 2007: 1).

Other publications on participation in post-tsunami activities in Aceh allude to the importance of participatory approach in theory, but to the complexities associated with the approach when implemented. For example, Ochiai and Shaw’s (2009) study of the World Bank’s recovery project in Aceh find that the participatory housing reconstruction effort contributed to key factors of speed, quality, socio-cultural concern, management, and cost. They find that the participatory approach is effective in housing reconstruction in disaster recovery so long as the balance between different players and these key factors are considered and adjusted based on the local situation. Other documents emphasize that in post-tsunami Aceh, the meaning of community participation in

reconstruction activities downgraded rapidly. For example, many NGOs claimed to use participatory approaches but in reality, only did in its lowest form, simply using the compulsory term to secure funds (Vebry, 2007).

2.3.4. Need for recovery research specific to the context of the developing world

A global report by the UNDP (2004) titled *Reducing Disaster Risk: A Challenge for Development* provides an account of the evolution of natural disasters as a development concern. They claim that the dominant view until the 1970s was that natural disasters were synonymous with natural events, indicating, for example, an earthquake was a disaster (i.e., the magnitude of a disaster was considered a function of the magnitude of the hazard). The international community was largely focused on the response part of the disaster cycle. From the 1970s onwards, they write that there was widespread realization that the same natural hazard had different impacts on different structures, generating an interest in mitigation strategies for physical structures. Also, from the 1970s onwards, but more profoundly in the 1980s and 1990s, the focus moved from looking largely at physical resistance to community resilience including social and economic vulnerability. Causes of disasters started to shift from purely the natural event to development processes contributing to and/or creating various vulnerabilities. By the end of the 1990s, it was clear that all development activities had the potential to increase or decrease risks. These practitioner shifts in focus parallel some of the academic shifts described earlier.

The current state in both academia and practice recognizes that “disasters and development are so closely related that one cannot be understood without the other” (Bates & Peacock, 1993: p.18). A review of related literatures shows that there is increasing recognition and acknowledgment of the intimate relationship between disasters and development (Bates & Peacock, 1993; Lewis, 1999; McEntire, 2004; UNDP, 2004;, 2009). As displayed in Table 2.1, this relationship draws from extensive literatures across many related disciplines. This present research study aims to contribute to several of these literatures included in Table 2.1.

Academic classification	Examples of key topics
This study	
Physical Planning	Building design
	Urbanisation
	Transport
Social and Behavioural Studies	Social integration, cohesion and exclusion
	Vulnerability, coping and resilience
	Gender
Development Studies	Culture and development
	Sustainability
	Development paradigms and discourse
Human Geography	Space and location
	Scale of human interactions
	Identity and representation
Other	
Emergency Management	Emergency response systems
	Humanitarian assistance
	Emergency communications
Public Health	Infectious disease management
	Social and psychosocial care
	Food and nutrition security
Historical and Political Studies	War, peace and conflict resolution
	Political economy of disaster
	Risk governance
Environmental Management	Biogeographical processes
	Water management
	Life cycle analysis
Physical Geography	Landform processes
	Geo-tectonics
	Predictive modelling

Table 2.1. Disaster and development studies

Source: After [Collins, 2009: 3]

In spite of the recognition of a close relationship between disasters and development, and as evident throughout this literature review itself, the vast majority of academic disaster recovery research is developed-world focused. However, as stressed in the introduction, disaster prevalence is increasing in the developing world supporting a need for academic research that is specific to the unique context and that has implications for policy development. This study will contribute to this need largely with respect to recovery measurement and recovery conceptualization. For example, in

studying the 1995 earthquake in Kobe, Chang (2010) uses census and other statistical sources to measure community recovery with respect to population, businesses, economic production, income, and port traffic. How similar measurements can be made in a context of limited availability of reliable data will be addressed in this study through the assessment approach used in Chapter Five.

Furthermore, links between recovery and development are under-researched. For example, based on observations of various post-disaster contexts, Pantelic (1991) has argued that recovery can “effectively unify development and recovery goals” through various elements like improving disaster resistance of physical structures, increasing standards of living, generating new jobs and skills, and integrating development and recovery goals into a community’s social and cultural values and resources. Concrete evidence to support these inferences is lacking. In his book, Lewis (1999) writes on development in disaster prone places. He discusses the ‘continuum from relief to development’, with reference to popular literatures (for example *Linking relief to development: Disaster response with foresight*: OFDA, 1997; *Linking relief and development*: IDS, 1994). Lewis (1999:134) writes of development being regarded as “the goal when everything else [related to relief and rehabilitation] has been accomplished” and emphasizes the need to approach development as being integrated with relief and reconstruction. This implies that rather than approaching development as being on a continuum of relief and recovery, the three topics may be better approached as occurring simultaneously. He emphasizes the need for greater research on understanding how development processes could be modified to accommodate disaster responses, to reduce vulnerability and to link development to a reduction in the need for relief.

2.4. Linking gaps to theoretical approaches

In order to address the gaps in literature and research needs that have been outlined (i.e. insights on understanding and measuring community-scale recovery, the role of post-disaster resettlement on recovery and development, and recovery in the context of the developing world) this study applies a theoretical framework that is the combination of two distinct yet related approaches. Firstly, it draws upon a capabilities approach as a means to understanding and measuring holistic disaster recovery within a framework of development. Secondly, it draws upon a place approach as a means to explore resettlement for all of its separate parts and in a manner that emphasizes the human experience. Each of these approaches will be described in brief.

Built upon a capabilities approach and a place approach, the overarching human development paradigm adopted in this study is about nurturing an environment that enables individuals to live productive lives and develop their own potential through means such as enhancing people's choices. Critical choices stressed in a human development approach include the ability to live a long and healthy life, the ability to acquire knowledge and the ability to attain a decent standard of living. To put a community spin on human development, for purposes of this research, implies an emphasis on elements that provide a supportive environment of networks and services available to the community that enable choice.

2.4.1. Capabilities approach

The first approach adopted in this study is the capabilities approach. Developed by economist Amartya Sen and philosopher Martha Nussbaum (see Sen, 1999; Nussbaum, 2000), the capabilities approach remains a widely accepted paradigm in development. The approach has been instrumental in changing the perspective of development among academics and international agencies, by arguing that the standard of living of individuals in a society is determined by "the ability of people to lead the kind of life they have reason to value" (Anand & Sen, 2000). At its core, the approach supports the idea that standard of living is a measure of the life an individual leads *and* the amount of choices the individual has for different life achievements (Jasek-Rysdahl, 2010). As one of its most significant applications, the capabilities approach is the theoretical framework used for the United Nation's Human Development Index (HDI) indicators discussed in Section 1.2.1.3.

Two of the core interrelated concepts in the capability approach include those of functionings and capabilities. Functionings are used to describe the current life condition of people, while capabilities are the set of possible functionings from which an individual must choose (or, in other words, the freedoms to realize these functionings). For example, eating and starving would be considered functionings, while having the means to obtain an adequate amount of food would be the associated capability. The capabilities-based approach measures development as a function of the level of wellbeing of a society in terms of functionings, or in other words, the approach observes development as a "process of expanding the real freedoms that people enjoy" (Sen, 1999: 3).

Sen (1999) conveys the goal of development as expanding capabilities under the following freedoms: 1) economic opportunities, 2) political freedoms, 3) social facilities, 4) transparency guarantees, and 5) protective security; Nussbaum (2000) identifies ten key capabilities from which to

approach development that are spread across the following dimensions: life, bodily health, bodily integrity, senses imagination and thought, emotions, practical reason, affiliation, other species, play, and control over one's environment. This study adapts these dimensions to generate its own list of capabilities for purposes of measuring recovery across the village cases. The opportunity to apply a capabilities approach to recovery allows for the validation of what matters in terms of recovery from the perspective of a survivor, or in this case, a community of survivors.

How this approach is operationalized in order to assess community recovery outcomes (i.e., to develop community recovery indicators) will be discussed in Chapter Five. Effectively doing this will have to overcome the widespread challenge expressed by many researchers that, while theoretically attractive, the capabilities approach is difficult to operationalize empirically due to its underspecified nature (Kuklys, 2003; Robeynes, 2006). As Sen (2005: vii) himself asserts, “there are widespread doubts about the possibility of making actual empirical use of this richer but more complex procedure”. Implementing this approach for purposes of the present research study also aims to contribute to growing literatures on operationalizing the capabilities approach (for example, Jasek-Rysdahl, 2010).

2.4.1.1. Capabilities approach and disasters

To situate community recovery within the ideology of development means not only a return of living conditions to a level of normalcy, but also the process of expanding community capabilities. The idea of conceptually applying capabilities to disaster research is not a new one. For example, Wisner et al. (2004) applies the concept of entitlements to hazards in his book on vulnerabilities and disasters. However, only recently have researchers explicitly explored a capabilities-based approach to disaster recovery measurement. For example, Gardoni & Murphy (2008) use a capabilities-based framework to assess the impact of disaster, track progress in recovery over time, and evaluate the effectiveness of the recovery process. As such, they use measurements from their capabilities-based Disaster Impact Index (DII), as a benchmark in calculating their Disaster Recovery Index (DRI). Directly applying their framework to this study will not be feasible given an inability to gather necessary time series DII data. However, the data collection methodology that will be used in this study to measure community recovery levels across cases will adopt some of the main considerations behind the DRI tool. These include practical implementation notes on the selection of capabilities and indicators that will be described in Chapter Five.

This study recognizes that the capabilities approach is not a theory that is able to explain poverty, inequality and well-being, but rather it is one that can provide concepts and a framework that can help to conceptualize and evaluate these concepts (Robeyns, 2006: 354). Therefore, in this study the capabilities approach will simply be used to develop community recovery indicators in order to enable a multi-dimensional understanding of holistic recovery. Though capabilities described by Sen (1999) and Nussbaum (2000) have been developed for application at an individual scale, the framework will be adapted to a community scale. Uses at the community scale remain limited, though its close relationship with community based approaches, such as asset mapping and capacity inventory have been researched (Jasek-Rysdahl, 2010).

2.4.2. Place

The second approach adopted in this study is that of place. What separates space from place is that while space is an abstract area, place is a particular part of that area which is endowed with meaning by people (Madanipour, 2001). Disciplines of sociology, geography, social anthropology, planning, environmental psychology, philosophy and architecture each portray a diverse array of perspectives and understanding of place. Consequently, place literature is multidisciplinary and characterized by tremendous diversity in theoretical, methodological and paradigmatic approaches pointing to usage of the concept in a way that best fits inquiry (Trentelman, 2009). This study takes the concept of place from various disciplines described below and applies a lens of place to this study of disaster recovery and resettlement.

As a humanist geographer, Tuan (1977: 54) describes place as a calm center of established values and an organized world of meaning (ibid.: 179). In his 1976 publication on *Place and Placelessness*, Relph argues that "to be human is to live in a world that is filled with significant places; to be human is to have and to know your place." His significant contribution to the study of place emphasises the role of peoples' identity of a place in relation to its "persistent sameness and unity which allows that [place] to be differentiated from others" (Relph, 1976: 45). Political geographer Agnew (1987) outlines the fundamental aspects of place as a meaningful location to include: location (i.e., fixed coordinates), locale (the material setting for social relationships), and sense of place (the subjective and emotional attachment people have to places). These aspects of place will shape data collected on place attributes.

In planning theory, the qualities of places and the qualities of place-making processes are considered “long-established preoccupations in planning thought” and are heavily valued across the discipline (Healey, 2001: 265). For example, the philosophy of spatial planning advocates for the improvement of quality of life through the promotion, management and regulation of place-making (Healey, 2001). There is an increased interest in the ‘qualities of places’, particularly on the part of policy makers for reasons that are varied and from multiple perspectives. For example, some argue that intense globalization has necessitated a need for a clearer sense of identity, often rooted in particular place; this rootedness in place plays a significant role in the sense of wellbeing of people who are constantly exposed to a multitude of global forces outside of their control (Madanipour, 2001). In their book on the art and practice of place-making, planners Schneekloth and Shibley (1995) argue that the main goal of place-making is that of building relationships between people and between people and their place.

As an analytic concept for sociology, Gieryn (2000) defines place in relation to three aspects: geographic location, material form and investment with meaning and value. The demise of ‘place-based communities’ has become a popular concern in sociological literature since the industrial revolution and the consequential rapid urbanization; in recent decades, economic globalization and advances in communication technologies have exacerbated the demise (Bridger & Alter, 2006). Similarly, in his book on *The Geography of Nowhere* (1994: 15), Kunstler argues that the American landscape has become “a landscape of scary places, the geography of nowhere, that has simply ceased to be a credible human habitat”. The notion of places with no character, no history, and no community appear throughout the book.

This study follows claims that the diverse meanings of place and space are socially constructed by multiple agencies and actors (Madanipour, 2001). In the case of resettlement after disaster, these actors include aid organizations, government agencies and community members. This study supports the notion that any location may have multiple meanings of place layered over it (Healey, 2001). Therefore, it can be argued that place is embedded in social processes and thus socially constructed. As such, conceptualizations of place link together the social experience of being in a place, the symbolic meaning of qualities in a place and the physical nature of the forms in it (ibid.). Furthermore, experiences of place are led by notions that “who we are and how we live emerge in the context of our relation to the places we inhabit and the artefacts with which we surrounds ourselves” (Spelman, 2008: 144). As such, there is a complex relationship between place,

architecture, and memory (Steinberg & Shields, 2008). Memory has been described to be “naturally place-oriented or at least place-supported” (Casey, 1987: 187). Architecture can act as a metaphor with which to explore place, in that as we move through architecture we experience place and endow places with meaning. The loss of a sense of belonging associated with disaster, both in an emotional as well as a physical sense of loss of physical belongings, act as a barrier to maintaining continuity with one’s past.

Just as Cresswell (2004: 11) argues in his *Short Introduction to Place* that place is ‘not just a thing in the world but a way of understanding the world’, a place lens guiding the framework seeks to do the same in understanding disaster recovery. An exploration to understand place, as manifested in the five communities, is examined in this study. Cresswell goes on to write:

...place is also a way of seeing, knowing and understanding the world. When we look at the world as a world of places we see different things. We see attachments and connections between people and place. We see worlds of meaning and experience...(Cresswell, 2004:11).

As illustrated in the framework of this research, each stage of this study is shaped by a similar perspective in an attempt to better understand the complexities of resettlement and recovery. By applying an approach of place, this study seeks to understand how place is manifested in resettlement, and what that means for disaster recovery. In implementing this approach, the focus will be on the location and material settings of communities, social relationships within that setting, and relationship between communities and their location. As such, the psychosocial dimension of place will not be a strong focus. However, elements of the humanistic dimension of the concept of place (i.e. emotional bonds) will be conceptually captured within broader dimensions described in Chapter Six.

2.4.2.1 Place and disaster recovery

Few researchers and works on disaster recovery have looked at concepts of place in the context of post-disaster initiatives. For example, in a chapter by Zetter and Boano (2010), they examine space and place after natural disasters and forced displacement. The authors argue that disasters provoke ‘placelessness’- the loss of the sense of place - yet that space and place are rarely recreated in cases of forced displacement. Using evidence from post-tsunami reconstruction projects in Sri Lanka, India and Indonesia the researchers demonstrate how concepts of space and place are sacrificed in post-disaster housing developments, representing the use of a narrow and technical view of what housing encompasses and thus, point to opportunities for further inquiry. Taking these ideas

further, this study explores place as it manifests in resettlement patterns and as it relates to community recovery outcomes.

In his chapter on space, place and resilience in post-tsunami Aceh, Mahdi (2009) examines two communities in Banda Aceh during displacement and resettlement in their original villages. Through comparison, he finds that the main factors that shaped the formation of a new community in a new settlement included social cohesiveness prior to disaster, leadership during the emergency period onward, and interaction with outside intervention in the context of emergency. He concludes that a "sense of community and interconnectedness among its members is the soul that makes a 'space' a 'place' to live" (Mahdi, 2009: 119). In her chapter on the remaking of neighbourhood in Banda Aceh after the tsunami, Samuels (2010: 221) demonstrates how social aspects of places, through neighbourhood social relations, activates, and emotional attachments to place are especially important for 'rebuilding everyday life in the reconstructing city".

Cox and Perry (2011) describe a social-psychological process of reorientation to show the critical importance of place as an orienting framework in the disaster recovery of two rural communities affected by a wildfire in Canada. They display the relevance of place, social capital and identity formation in the psychosocial recovery process of disaster survivors and communities and argue for a reconfiguration of disaster recovery to one that considers the role of place in the recovery process. This study will not delve into psychological meanings of place. However, the relationship between communities and their surrounding will touch on the surface of emotional elements of place in a way that is more in line with perspectives of geography, planning and sociology mentioned earlier.

2.5. Conceptual framework

Based on the literature review and theoretical approaches that have just been described, the underlying framework that this research will follow is displayed in Figure 2.2 below. The figure depicts three circles, with the inner ones contained in the outer circle. This illustrates resettlement as an element of recovery, and recovery as an element of development. As such, the framework follows an approach to recovery that embodies elements of improved living conditions. Situating resettlement within recovery allows for an approach that distinguishes the resettlement process from the larger recovery process while recognizing that resettlement processes condition overall recovery

outcomes. Situating recovery within development will contextualize the research questions in a framework of ongoing development.

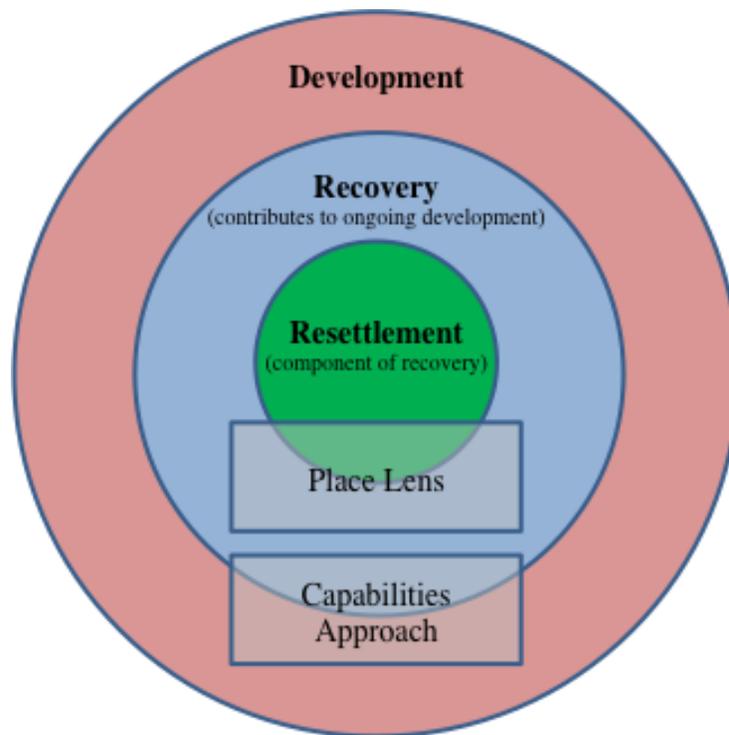


Figure 2.2. Conceptual framework

Source: Author

Within a context of development, the assessment of recovery will be carried out through the lens of capabilities. The figure points to place, in the sense that was described above, as an appropriate lens for resettlement. This study draws on several elements of this framework at various stages of the research and dissertation. For example, not only does this study explore resettlement through the lens of place when collecting data, but it will also test the suitability of using a placeness approach for resettlement when analyzing data. Similarly, the appropriateness of using a capabilities approach for measuring community recovery will be examined. The framework will allow for broad understandings on the relationship between place and development through observations gathered on place attributes and development capabilities. As such, linkages between a capabilities approach and a place approach will be explored through the research design. At the same time, the framework will allow for a more detailed multi-dimensional analysis on specific place attributes and capabilities that surface as being most important in resettlement and recovery.

2.6. Summary

This chapter reviewed existing literatures and demonstrated a need for greater inquiry on social dimensions of community recovery in the context of the developing world. Needs identified included: greater understandings on factors that impact community recovery, insights on measuring holistic community recovery, and the role of resettlement on recovery outcomes. The unique conditions of resettlement and recovery in tsunami-affected regions of Aceh described in Chapter One provide an opportunity to effectively address all of these needs through exploring community recovery in the region. The next chapter will describe the methodology pursued to carry out this exploration.

A combination of a capabilities approach and a place lens was described as an appropriate way to contribute to filling gaps in literature and framing a study that explores social dimensions of recovery. Details on how this framework is operationalized in this study appear in later chapters. For example, Chapter Five will operationalize the capabilities approach through the development of a tool to measure community recovery across the five cases, and Chapter Six will operationalize a place approach through a placeness analysis of the five cases.

CHAPTER THREE: RESEARCH DESIGN AND DATA COLLECTION METHODOLOGY

This study draws findings through the exploration and comparison of five cases of resettlement in post-tsunami Aceh. As such, the research employs a comparative case study research design. Chapter Three provides a detailed account of the research design and methodology that was used to investigate the research questions proposed in Chapter One.

3.1. Approach

Given the large-scale devastation and loss of land due to the tsunami, different patterns of resettlement have emerged during the recovery process, presenting an opportunity to draw valuable comparisons. Comparative case studies are an appropriate way to test theory and to develop concepts. In this study it is used as such, and as a method to explore variations in variables of interest and to allow for comparisons of variables across cases in a systematic way. Comparative case study designs have been used by a number of researchers studying community recovery from natural disasters, for example, work by Bolin (1994) and Rubin (1985). Its current usage in the field, however, remains relatively limited. Several academic scholars such as those on the National Research Council's Committee on Disaster Research in the Social Sciences (NRC, 2006) advocate a need for more comparative research in order to document and better understand variations in disaster recovery processes and outcomes. Others point to the limited capacity to make generalizations on effective policy due to a lack of disaster research that uses multiple case research design with the same methods and variables in each case, thus enabling comparability (Berke et al., 2008). In addressing this need, this study contributes to the body of research considering uses of comparative approaches in understanding the dynamics of disaster recovery.

A case study approach has been chosen for a number of reasons. It is a preferred strategy when "how" or "why" questions are being posed, when the researcher has little control over events (i.e., it is not a controlled environment), and when the focus is on a contemporary phenomenon within some real-life context (Yin, 2003). The approach allows for in-depth inquiry and understanding through multiple data collection methods over a period of time (Stake, 1995). As cases are bounded by time, the approach allows for a compromise between breadth and depth when under time and funding constraints, as is the nature of doctoral research. Case study research allows for

applications beyond the specific context of the particular case being studied, as findings can be used to make broader generalizations (Yin, 2003). With the hope of providing contributions to the practice of recovery and resettlement, the approach will enable the development of recommendations based on outcomes. The case study selection for this study is based on a careful sample of the total number of resettlement villages in Banda Aceh and Aceh Besar through distinct criteria. Details on this will be presented within the section on 'Targeted Case Selection'.

This research follows a mixed methods approach. Both quantitative and qualitative approaches are employed simultaneously to ensure more comprehensive research. Quantitative techniques (such as the use of an index tool), are used to explore relationships among measurable variables in order to explain and predict phenomena, while qualitative techniques (such as observational technique) are used to seek a better understanding of the complex relationships (Leedy & Ormrod, 2001). As such, data collection has been structured in a way that enables investigating the hypothesis (that for long-term community disaster recovery to be successful, resettlement must address several core attributes of place) through structured observations and by systematically gathering data by variables of recovery, resettlement and placeness. Relationships between variables and underlying reasons have been explored concurrently through in-depth inquiry. A mixed methods approach has allowed the inquiry to be operationally bound with defined variables, but at the same time has enabled the inquiry of patterns of unanticipated relationships alongside speculated ones (Stake, 1995). The range of data collection methods within the mixed methods includes conducting fieldwork across village cases (using key informant interviews, focus group discussions and direct observations), key expert interviews in government agencies, academia and NGOs, reading NGO and government reports, and analysing documentation from village offices.

This research is not ethnographic in nature. However, given the amount of time that was spent in the communities of study (approximately one month each), several elements of an ethnographic approach have informed the analytical approach and data collection. For example, a detailed daily journal of observations and experiences was kept throughout the entire research process. These entries allowed for not only ongoing research clarifications and amendments, but also for personal insights on evolution as a researcher over time.

The process of research for this study is portrayed in Figure 3.1. Subsequent to reviewing existing literatures to identify, justify and situate preliminary research questions, this study consisted of six successive steps: an exploratory trip to the field, the refinement of research questions, field

preparation, fieldwork (data collection), data analysis and the dissertation write up. A trip back to the Aceh to share findings is anticipated in the near future (i.e., for the International Centre for Aceh and Indian Ocean Studies biannual meeting in 2015). While feedback from the trip will not be incorporated into the PhD dissertation, it is expected that they may shape future research initiatives in the region.

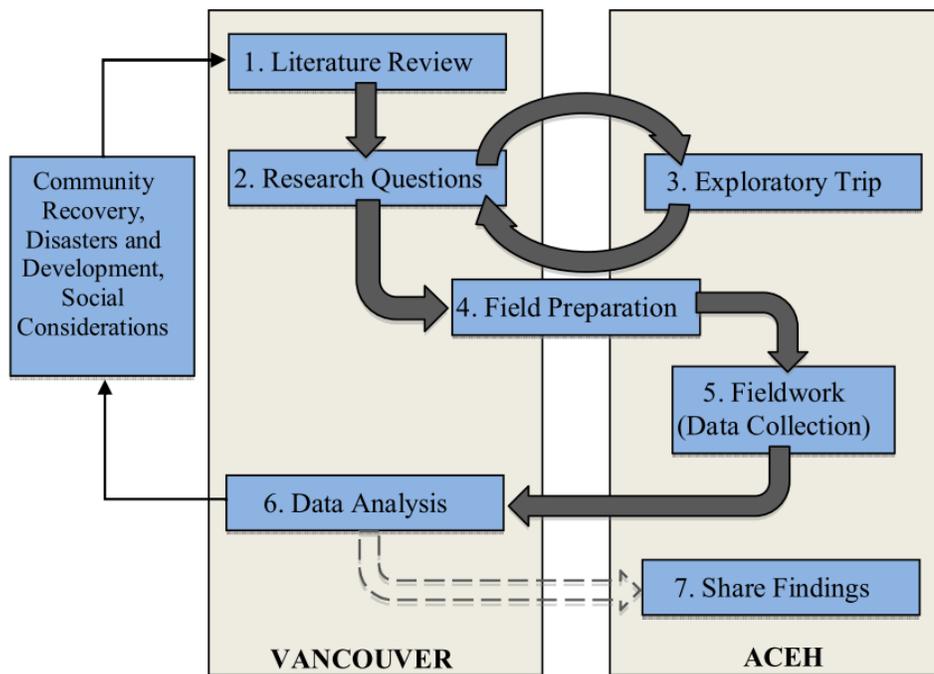


Figure 3.1. Research process

Source: Author

3.2. The exploratory trip

An exploratory trip to Indonesia was conducted over October and November of 2010. The main goals of the trip were: to gain insight on potential case studies and sites for research design; to build relationships and networks within international and local NGO and donor communities in the field; to firm up institutional affiliations to enable a mutually beneficial research experience; and to familiarize with the culture, language and context in which research was situated. Each of these goals will be addressed below, with reference to research design and fieldwork.

Travel in Indonesia included visits to parts of Yogyakarta, Jakarta, Banda Aceh and Aceh Besar (see Figure 3.2). The majority of the trip was spent in Banda Aceh and Aceh Besar, in regions

that had been devastated by the 2004 tsunami. Based on conversation with UNDP staff, local scholars, and NGOs, visits to several surrounding villages of potential interest were arranged. These visits were mostly observational in nature and provided contextual insights as well as information on the feasibility of research objectives. Given the widespread destruction and tremendous international community attention, great diversity in resettlement patterns and recovery outcomes in the region were clearly visible. Some informal group discussions with villagers were conducted in order to grasp a basic understanding of the context and major issues faced by communities. A list of possible village cases for this study was developed based on these understandings.



Figure 3.2. Exploratory trip map

Source: Wikipedia, 2013. Scale unknown

While in Yogyakarta, the possibility of conducting comparative research outside of Aceh with cases of village reconstruction in Yogyakarta following the 2006 earthquake was explored. Through participation as an observer in a training workshop on disaster risk reduction, guided field visits to villages were completed. It became apparent through observations that the recovery process in Yogyakarta was quite different from that in Aceh, with only one case of relocation, and the vast majority of village reconstruction being community-driven with minimal international aid community involvement. As such, it was decided that cases from Yogyakarta would not be used in

the research study. Given the vast number of cases from the 2004 tsunami, comparative research would be possible in Aceh itself.

Several elements of the research design required access to persons and documentation across international and local NGO and donor communities. While in Banda Aceh during the exploratory trip, the focus was on creating networks among some of the leading agencies during the recovery process, including UN-Habitat and UNDP. These were all based in Banda Aceh. Insights from key players from the recovery process at these two agencies led to the validation of some findings in the literature review and pointed to new complexities that would be important in conducting research. For example, the UNDP expressed concern on the high rates of empty homes in many of the reconstructed villages due possibly to a lack of satisfaction with housing design. The UN-Habitat questioned the value of their time-intensive community-based approaches versus the more common contractor-driven approaches used by the majority of NGOs involved with housing reconstruction. While the former enabled greater community engagement during the process, the latter allowed for faster results and therefore was considered perhaps more successful. There was also curiosity among NGOs with regards to tracing where displaced populations currently resided. A visit to the local World Bank office in Aceh brought to light the difficulties in the availability of reliable data for academic study. Participation as an observer during a roundtable discussion at UNDP led by government officials on a draft of the Aceh Human Development Report (UNDP, 2011) provided insights into the development context of the current day.

During the trip, institutional affiliation was established with the International Center for Aceh and Indian Ocean Studies in Aceh (ICAIOS) in Banda Aceh. ICAIOS is a joint effort between three universities in Aceh (Syiah Kuala University, IAIN Ar-Raniry, and University of Malikussaleh), the Indonesia Ministry of Research and Technology, the Government of Aceh, and a number of international academic institutions. Initial contact was made through arranging a face-to-face meeting with the Director of ICAIOS. The possibility for affiliation was welcomed with enthusiasm and was followed by networking with and insights from others hosted by ICAIOS.

ICAIOS played a supportive role throughout the research project, with technical visa sponsorship, logistical details, PhD working space, discussion forums alongside other international doctoral students, and assistance in facilitating communication with contacts relevant to the research. Housed in the Syiah Kuala University campus, the affiliation gave access to other faculties and researchers in similar and related realms of study. As such, affiliation at ICAIOS provided the

opportunity to join a community of international and local researchers studying Aceh. The ICAIOS library was available for use and contained a significant number of writings on Aceh, the military conflict described in Chapter One, the 2004 tsunami, and other topics of interest. Over the course of the exploratory trip and fieldwork the affiliation was beneficial in sharing across academic scholars on practical tips and insights for conducting efficient and effective fieldwork. The working relationship that was established with the Director of ICAIOS at this time proved vital in understanding the local research context, potential avenues for data sources, relevant contacts, and in ensuring the cultural sensitivity in research design.

Contact was also established with the Tsunami Disaster Mitigation & Research Centre (TDMRC), also in Banda Aceh. Primarily focused on long-term urban risk reduction, the TDMRC is working with the challenges of relocating communities who are refusing to move. Consequently, several of the databases housed at the TDMRC were valuable in contextualizing the research.

One week was spent at The Gadjah Mada University (UGM) in Yogyakarta, allowing for broader insights on disaster risk reduction and recovery in the Indonesian context. Through a guest lecture to a group of Master's students in the Urban and Regional planning program, feedback on the research project was obtained. A relationship with the department was maintained throughout the course of the fieldwork.

While in Aceh for the exploratory trip, accommodation was provided by a host family in a neighborhood that had been affected by the tsunami. This allowed for quick immersion into Acehnese culture and way of life. The experience enabled preliminary insights on human dimensions of the recovery process and personal stories of the post-disaster period. It became clear that the general local perspective on recovery was that NGO projects were unsustainable and lacked long-term planning or outlook. The experience also allowed for the practice of beginner level Bahasa Indonesia language. (Classes in Bahasa Indonesia had been completed at the University of British Columbia over the academic year 2009 to 2010.)

3.3. Field preparation

Based on insights from the exploratory trip, research questions were refined and next steps in research design were finalized back in Vancouver, Canada. Upon successful defense and committee approval of the research prospectus, preliminary instruments for data collection and English consent forms were developed. Compliance with the University of British Columbia's ethical standards and

requirements was ensured. To do this, the research followed the TCPS (Tri-Council Policy Statement for the Ethical Conduct for Research Involving Humans) application process and was reviewed and approved by the UBC Behavioural Research Ethics Board (BREB). Ethics approval was obtained before departure for Indonesia.

In order to enhance working knowledge of the local language prior to embarking on fieldwork, an intensive Bahasa Indonesia language course was completed over two weeks at Realia Indonesian Language and Culture Centre in Yogyakarta prior to arriving in Banda Aceh.

3.4. Fieldwork

Fieldwork was conducted over a period of five consecutive months (March 2011 to July 2011). Soon after arrival in Banda Aceh, a posting for a research assistant (RA) was circulated at the Syiah Kuala University campus. Interviews for the position were conducted, an appropriate RA was selected, and consent letters and forms were translated into Bahasa Indonesia at this time.

3.4.1. Targeted case selection

Case selection followed a purposive sampling approach, aiming to cover a representative sample of resettlement cases at the same time. Cases were intentionally sought because they met criteria for inclusion in this study (Palys & Atchison, 2008). The initial criteria developed for selecting cases was based on combinations of dimensions of place and of planning and on the basis of similar pre-disaster conditions (i.e., reported level of development prior to the disaster was similar across villages). This included ‘moved’ (i.e. villagers were moved to a new location) and ‘not moved’ (i.e. villagers stayed in their original village) and ‘planned’ and ‘not planned’. The criteria was later modified to ‘moved’ and ‘not moved’ and ‘participatory’ and non-participatory’ and will be explained below.

The reasons for selecting initial dimensions of place and planning were the standpoint that: 1) physical location was a core element of place; and that 2) during the exploratory trip it was observed that planned settlements appeared to embody more place attributes than unplanned settlements. The criteria would effectively cover a representative sample of resettlement typologies while ensuring adequate variation across the placeness variable. Therefore, cases would include an equal number of those of resettlement in pre- disaster locations and resettlement in other than pre-disaster locations in relation to whether resettlement planning was planned or unplanned. Notions of a planned settlement

included the enforcement of some level of controlled and organized spatial planning. The reason for incorporating pre-disaster conditions into the selection criteria was to allow for comparisons across cases in both collection procedures and future analysis techniques.

Five communities that had been tentatively selected during the exploratory trip were re-visited at the start of the fieldwork. Through consultation with local scholars and field practitioners, a number of additional possible case studies were explored and also visited. In total, twenty villages were observed in the sampling frame and around fifteen villages were narrowed down as options for detailed study. Based on direct observations, ten were selected for further surveying. In each of these villages surveyed, initial contact was made with the village chief. Through informal discussion with village chiefs, and by asking local villagers, a better understanding on the background of the village was gained and the suitability of the case was evaluated in terms of selection criteria, openness to research, and potential for interesting research findings. For example, one of the Compounds where preliminary interviewing was conducted was a new compound built in Thurbe, located within the fields and mountainous area of Jantho (~40km directly South of Banda Aceh). The majority of residents were from the island of Pulo Aceh or from the district of Aceh Jaya. Many of the residents spoke of returning to their old regions, but of prevailing trauma holding them back. However, this case was not pursued do to difficulties in accessing the community on an on-going basis (i.e., its remote location). In most cases, the village chief was located through inquiry among local villagers. In some cases however, a meeting with the village chief was organized through a mutual local acquaintance.

Through conversations with village chiefs, it became apparent that the dimension of planning (planned vs. unplanned) was perhaps not the best marker for case selection criteria. In fact, many officials argued that there was only one true case of a planned resettlement in a pre-disaster location. This case was classified as the “ideal” village reconstruction case, having undergone significant land consolidation. It later became apparent that this case was the “go-to example” to display reconstruction to tourists and had been researched by many scholars. In addition, it became clear through discussions that although the majority of resettlements not in pre-disaster locations were planned, they embodied very different attributes of place (i.e., some had paved roads connecting houses, other had designated public gathering places, and so on). The dimension of participation began to emerge as one that seemed to enable more variation in place attributes. Keeping in mind perspectives that a first criterion in selecting cases should be to maximize what can be learned (Stake,

1995), the participation dimension seemed one that would potentially make for more insightful case studies, as it allowed for more depth on the resettlement process as opposed to the planned/unplanned dimensions. Therefore, the selection criterion was refined to combinations of dimensions of location and dimensions of participation. Other dimensions such as size and proximity to the coast were not considered, as using these dimensions limited the scope of the exploration to more than what was desired.

Villages were classified as ‘participatory’ or ‘non-participatory’ based on initial village surveying. During the surveying, village chiefs were asked about the nature of the resettlement process and level of involvement by community members. In some cases, the village chief invited a community member who played a role in the reconstruction process to join the conversation. In one of the villages, the chief was previously a housing supervisor hired by the NGO working in the village. Those villages that were described as having any level of involvement by community members during the resettlement were grouped as ‘participatory’. Those where villagers were described as simply being allocated a resettlement site and/or returned to the village upon completion of housing were grouped as ‘non-participatory’. These classifications were supported by reports published by NGOs that had worked in each of the respective villages (i.e. NGO website articles on reconstruction activities). In Chapter Four, the villages are later ranked on a participation spectrum based on detailed data collected on the resettlement process (see Table 4.5).

Two cases of ‘moved’, ‘non-participatory’ were selected for study as both had the potential for interesting findings yet embodied very different community dynamics. In fact, it was hoped that two cases in each “cell” would be studied and as such, eight possible communities were selected and surveyed. However, due to the amount of time needed to diligently study each community and limited resources to effectively do so, ultimately five communities were studied (as listed in Table 3.1.). ‘Resettlement not in previous location’ indicates that the community was either relocated to a new location or it was a new community created from scratch in a new location. ‘Resettlement in previous location’ indicates that the community was rebuilt in the same location as it was prior to the disaster. The final five cases selected were Neheun Compound, Panteriek, Lampulo, Gampong Baro and Bitai. Figures 3.3 and 3.4 below situate these villages on the broader map of Banda Aceh and surrounding Aceh Besar.

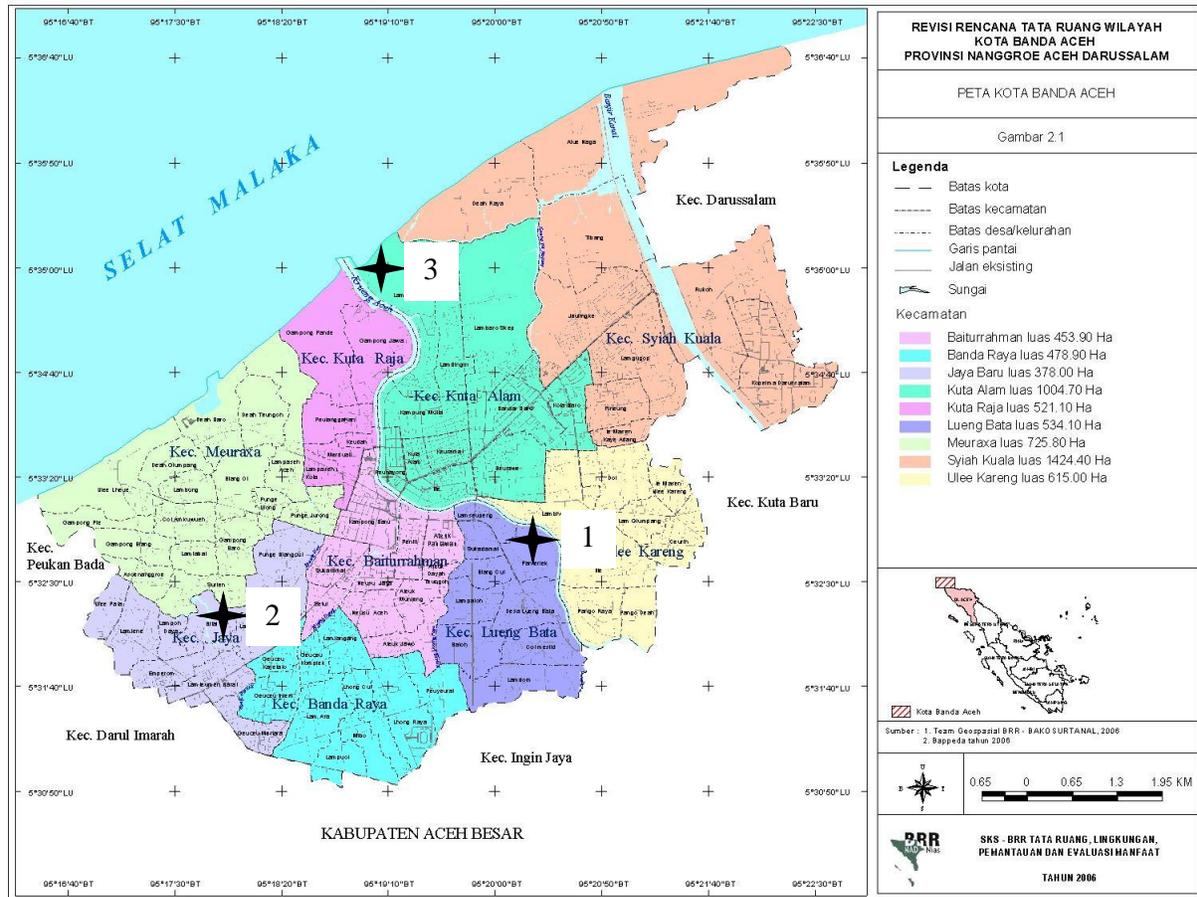


Figure 3.3. Village cases on map of Banda Aceh and Aceh Besar.

Villages indicated as: 1) Panteriek Compound 2) Bitai 3) Lampulo

Source: Map provided by BAPPEDA Banda Aceh during fieldwork

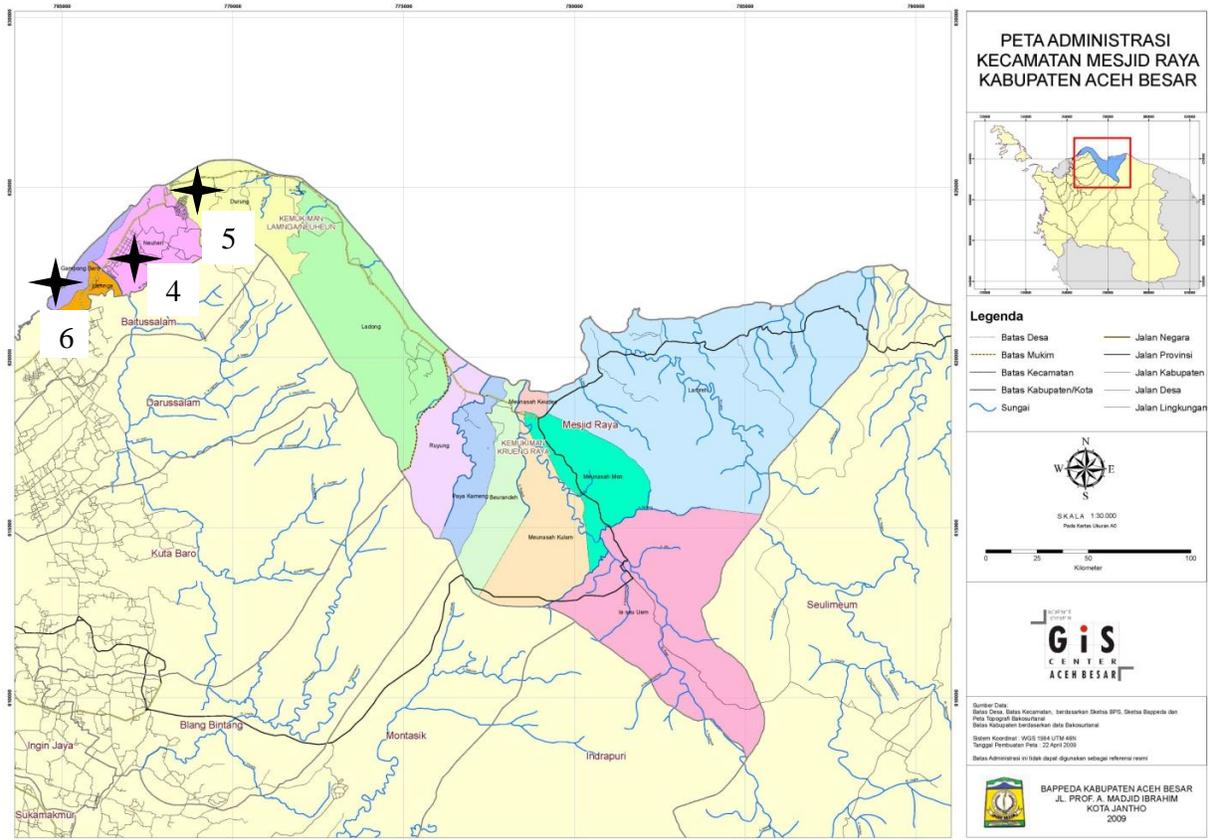


Figure 3.4. Village cases on map of Masjid Raya subdistrict of Aceh Besar
 Villages indicated as: 4) Neheun Compound 5) Gampong Baro 6) Old Gampong Baro
 Source: Map provided by BAPPEDA Aceh Besar during fieldwork

	Participatory	Non-participatory
Moved (Resettlement not in previous location)	Gampong Baro	Neheun Compound Panteriek Compound
Did not Move (Resettlement in previous location)	Lampulo	Bitai

Table 3.1. Case criteria and communities selected

Three of the case studies (Neheun Compound, Panteriek and Lampulo) were confirmed within the first month of fieldwork. The remaining two cases (Gampong Baro and Bitai) were confirmed during the third month of fieldwork. Cases were studied from March to July 2011, one after the other, to allow for full immersion into each case and to build confidence and acceptance

with villagers over time. Approximately one month was spent on each case, with instances of some days of overlap during the span of fieldwork. This was possible due to the close proximity of cases, with the furthest case being less than an hour away from the author’s place of residence in central Banda Aceh during fieldwork.

3.4.2. Data collection

Data were collected on the three main variables of concern: recovery, resettlement, and placeness. Multiple data sources were used for collection. Recovery data relied primarily on semi-structured interviews at the village level, resettlement data on village surveying, and placeness data on focus group discussions with villagers. Each data source, however, provided information to some degree on all variables of interest, with some sources more so than others. This allowed for more comprehensive data collection and has enabled construct validity with data converging in a triangulating manner (Yin, 2003). Open-ended interviews were also conducted with key experts (i.e., staff at local government agencies, non-governmental organizations and academic institutions) for contextual and other insights. The detailed numbers of interviews and/or discussions for each collection method, along with ranking of data collection by variable are listed in Table 3.2. Whether the data source was a ‘central’ source of data or ‘subordinate’ source of data is also indicated. Most of the questions and data collected on that particular variable was from the source indicated as ‘central’. Other sources that provided information toward a particular variable are listed as ‘subordinate’. The table indicates how central and subordinate sources were used to validate, verify and increase the credibility of information as a technique of triangulation.

Data Source	Aspect of Recovery				
	Number	Recovery	Resettlement	Placeness	Contextual
Semi-structured interviews	75	Central	Subordinate	Subordinate	
Direct observations	N/A	Subordinate		Subordinate	
Secondary sources	N/A	Subordinate			
Preliminary surveying	10		Central		
Focus group discussions	14		Subordinate	Central	
Open-ended interviews	26				Central
Total	125				

Table 3.2. Data source by variable

Source: Fieldwork

Before each interview and focus group discussion, the purpose of this study and voluntary nature of participation in this study were explained as per the UBC ethics protocol. A copy of the consent form in Bahasa Indonesia was provided. Either verbal or written consent was obtained. Verbal consent was a preferred method in cases where community members were hesitant to sign their name to a document, but were agreeable to providing the interview, and in the more informal conversations that occurred over the course of fieldwork. Interviews and focus group discussions were conducted in Bahasa Indonesia. The same research assistant was present as a translator for all of the interviews and focus group discussions that were conducted. At first, interviews were tape-recorded. However, due to discomfort displayed by interviewees, the decision to take hand-written notes instead was made during the first case study and applied for the rest of the cases.

3.4.2.1. Recovery data

Key informant interviewing was chosen to collect recovery data for its effectiveness in gathering broad data, its advantages in being able to access information otherwise unavailable, and its ability to enable an understanding or interpretation of cultural information (Crabtree & Miller, 1999). The technique was a preferred strategy in the context of village-level fieldwork as it allowed the interviewees to express their views in their own words. The method has been successfully used to understand perspectives of recovery by several disaster researchers; for example, Berke et al (2008) who, through key informant interviews in six villages of post-tsunami Thailand, found that aid programmes may have prevented the potential of social capital for collective action toward positive outcomes.

Since any one informant would not be able to accurately assess all aspects of community recovery, many informants with different perspectives were interviewed to obtain a holistic understanding of community recovery. Informants were selected based on their role in the community and ability to comment on a specific aspect of recovery. Key informants interviewed included, *imams*¹⁹, school principals, health professionals, elected members of the village

¹⁹ *Imam* has been translated in the glossary as a religious leader. In the context of villages in Aceh, the *imam* plays a key role in leading communal prayers in the village. He is also responsible for maintaining the religious gathering space and its congregation (for more information see Graf et al., 2010).

government²⁰ and other individuals in leadership roles²¹ in the community. Key informants were recruited through site visits and networking. Many of the informants were identified through consultation and introduction from the village chief, while others were selected through introductions facilitated by villagers and snowball sampling techniques. A complete list of informants, along with the number of each type of informant interviewed in each village is displayed in Table 3.3.

²⁰ Members of the village government interviewed included for example, the village chief, compound chief, village secretary, block chief and/or alternative to block chief. In the cases studied, the compound chief position only applies to Neheun Compound. Due to the large number of new compounds constructed in the village of Neheun, the village governance was modified to introduce compound chiefs who would function to support the village chief in his duties. In the case of Neheun Compound, the Neheun village chief carried out only administrative duties; the Neheun compound chief addressed all other concerns. The village secretary sits under the village chief and plays a strong role in village governance. For example, in Bitai, the village secretary was active in administrative duties that were not family with the village chief. In cases when the village chief was killed by the tsunami, the village secretary would step into the role. Each designated block (i.e. area) in the village had block chief responsible for residents of the area. In the case where a block chief was not available, an alternative to the block chief was interviewed, based on recommendation of the village chief.

²¹ Other individuals in leadership roles included for example, the youth leader, women's group leader, and village elders. The youth leader in each village is an elected member of the village governance and was responsible for carrying out duties specific to the youth population (i.e. up to around age 35) of the village (for example, social gatherings). The women's group leader was in charge of conducting activities specific to women in the village (for example, home industries, socio-cultural events, and so on). In some cases this group was more active than in others. A village elder was a senior member of the village (in age).

Informant	Neheun Compound	Bitai	Gampong Baro	Lampulo	Panteriek Compound	Totals
Village Chief	1	1	1	1	1	5
Compound Chief	1					1
Village Secretary	1	1	1	1	1	5
Block Chief	7	4	2	3	4	20
Alternate to Block Chief				1		1
Imam/Deputy Imam	1	1	1	1	*	4
Youth Leader	1		1	1	1	4
Doctor				1		1
Midwife	1 ^f	1 ^f	1 ^f	1 ^f	2	6
School Principal	1	1 ^f		1 ^f	3	6
Teacher	2 ^f	4 ^f		1 ^f	2	9
Women's Group		1 ^f		1		2
Ex-Chief		1			1	2
Village Elder	1 ^f	2 ^f	+	1	~	4
Academic			1	1	1	3
NGO Staff			1	1		2
Totals	17	17	9	16	16	75

f) Female participant

+) Also serves as Imam/Deputy Imam

*) Also serves as Village Secretary

~) Also serves as Ex-Chief

Table 3.3. Key informants by village and category

Source: Fieldwork

Semi-structured questionnaire templates specific to key informant category (e.g., community leader, health professional, educator) had been developed prior to arrival in Indonesia. Soon after arrival, templates were tested with local graduate students and scholars housed at the ICAIOS. The interview protocol was refined to accommodate for cultural sensitivities, context, and to better reflect local vocabulary. Once a suitable first case was confirmed (which happened to be the one that had been selected during the exploratory trip), the questionnaire was piloted and minor modifications were made during the case. Some of these modifications were in making the questions specific to informants, listed in Table 3.3 above. In many instances, the interview guide was adjusted during interviews to accommodate for discussion that emerged.

Interview questions usually started by asking the informant about their position, their role in the community, how long they had been a part of the community, and their participation in the resettlement and recovery process (see Appendix One). Questions on dimensions of recovery specific to the category of the informant were then asked. (For example, an educator would be asked about changes and data on school enrolment levels over time, and a midwife on health services and number of reported illnesses over time). An attempt was made to ask questions in a systematic way, in order to allow for comparison across cases. For example, words such as “more” and “less” or “better” and “worse” were used when asking about changes. The length of time of interview ranged from 30 minutes to 2 hours. Most of the interviews were conducted in or outside the interviewees’ place of residence. In the case of professionals, the interviews were conducted at their place of work (i.e., school, health clinic, village office).

Direct observations on a number of recovery indicators (for example, hectares of productive cropland, number of food vendors, and so on) were noted in each case. Observations served as a valuable source of data for recovery given the sparseness and/or consistency of reliable and/or accessible data. Detailed observations on specific recovery indicators in each case were recorded following a standard reporting style, for example on quality of roads and houses. Possible new indicators for recovery were explored based on reflections of what was seen (for example, number of renovations). Observations were listed in a way that would allow for comparisons across cases (for example, tables comparing the cases). Observations were recorded during the same timeframe that interviews were being conducted in each village. In the last few days of fieldwork, all of the cases were re-visited to make further remarks and to modify existing notes by adding comments on comparable observations.

Secondary data that was related to understanding community recovery were also gathered during fieldwork. At the village level, documentation included village office records on population, marriages, births, deaths, school enrolment, health visits, and so on. Reports on the current state of development, including the current village plan, were photocopied. Some documentation indicative of recovery was accessed at the various government bodies and agencies that were visited, for example, village-level statistical data from the *Badan Pusat Statistik* (Central Bureau of Statistics) and village-level budget documents from the *Badan Pemberdayaan Masyarakat* (Community Empowerment Board). The reliability and validity of documentation was explored through consulting with the person in charge of collection at the respective agencies.

Chapter Five on ‘Assessing Community Recovery’ will include details on how specific recovery indicators were developed prior to and modified during the course of the fieldwork. These indicators (i.e., marriage rates, reported illness, school attendance levels, etc.) were based on a combination of interview data, observations and secondary sources. Chapter Five will include which specific indicator information was observed and/or probed through the different data collection techniques, and will also describe development of the multi-dimensional recovery index.

3.4.2.2. Resettlement data

Resettlement data (i.e., whether it was a resettlement that was not in its previous location or a resettlement that was in its previous location) were primarily obtained during village surveying when selecting cases. The initial purpose of data collection on this variable was to categorize and select cases for research. Details on the collection have been described in the earlier section on ‘targeting village cases’. Classifications of moved, not moved, participation and non-participation were based on data from the village chiefs and official documentation like reports and maps obtained from government agencies.

Insights from semi-structured interviewing with key informants as described above provided further details on resettlement process. As will be described in the next section, in the focus group discussions, many additional challenges and details related to the resettlement process emerged.

3.4.2.3. Placeness data

Placeness data (such as sense of belonging) were primarily obtained through focus group discussions with village members. Focus group discussions were conducted in each of the cases as indicated in Table 3.2 earlier. The method was used for its effectiveness in understanding a community’s beliefs, ideas, attitudes and opinions of their community (Dawson et al., 1993). Focus group discussions provided the opportunity to witness rather than influence the community’s interaction on topics within a relatively limited timeframe (Morgan, 1988).

The primary purpose of the discussions was to gain a deeper understanding of place, community life and dynamics in the village, to gather insights on the role of place attributes during the recovery process and to understand current conditions and concerns of the community. Two standard focus group discussions were conducted in each of the cases – one with males, and one with females. The genders were separated in order to accommodate for cultural sensitivities and to enable

a greater level of comfort among female participants. Additional focus group discussions were held in some of the villages based on the uniqueness of the case, as described in the next chapter. A complete list of focus group discussions conducted in each village is displayed in Table 3.4. A discussion template was kept at hand (see Appendix One), though the discussion topics were kept somewhat flexible depending on what the group wanted to talk about. In the spirit of acting as a facilitator rather than interrogator, topics were probed only as and when appropriate.

Village	Group	Males/Females	Description
Neheun	1	M	Newcomers
Compound	2	F	Newcomers
Bitai	3	M	Originals and Newcomers
	4	F	Originals and Newcomers
	5	M	Originals (Youth)
	6	M	Newcomers (Youth)
Gampong Baro	7	M	Originals
	8	F	Originals
Lampulo	9	M	Originals and Newcomers
	10	F	Originals and Newcomers
Panteriek	11	M	Newcomers
Compound	12	F	Newcomers
Old Panteriek	13	M	Originals
Compound	14	F	Originals

Table 3.4. Focus group discussions by case

Source: Fieldwork

Focus group members were recruited through different ways in each village. Though a standard approach to recruiting participants would have been preferred, the dynamic realities of the field made this difficult. Recruitment included sessions set up by village or block chiefs and/or their wives; sessions that followed attendance at community events; and sessions organized after village gatherings, for example, following weekly Quran recitation classes. Focus group discussions ranged from one to three hours. Attendance averaged around fifteen to twenty participants, though discussions ranged from five to twenty-five participants. The discussions were held in public spaces, such as the village mosque or other prominent gathering place in the village. Efforts were made to try to attract an assortment of ages in each focus group, from young adults to elderly. When composing groups, attempts were made to minimize differences in power and status in order to properly observe

dynamics. For example, in one of the cases, discussions with newcomers were carried out separate to discussions with original community members. When discussion was being dominated by a handful of people, efforts were made to encourage discussion and indirectly channel discussion to other members in the group. During the discussion, the researcher and research assistant also recorded notes on group dynamics. In many cases, the discussion would be followed by smaller informal conversations. These smaller conversations provided insights on the emotional feelings community members had for their particular 'place'.

Similar to the recovery variable, direct observations on placeness indicators was taken in each case. Detailed observations on place attributes in each case were recorded following a standard reporting style, for example on public space and meeting places. Observations were listed in a way that would allow for comparisons across cases. Observations were recorded during the timeframe that interviews were being conducted in each village. In the last few days of fieldwork, all of the cases were re-visited to make further observations and to modify existing notes will adding to notes on comparable observations. Data from the semi-structured interviews with key informants described early also provided some detailed insights into placeness indicators.

3.4.2.4. Contextual data

In addition to data collection for the three variables described, open-ended interviews were conducted with key experts in order to better understand the state of recovery in Aceh as a whole. Experts were from government agencies, non-governmental organizations and academic institutions. Some interviewees were targeted to provide specific insights on queries that emerged during fieldwork (for example, UNDP Program staff, to understand disaster risk reduction programming in villages). This was especially valuable, as the NGO voice was not obtained or incorporated in understanding recovery in each of the cases (for reasons that include difficulty in contacting ex-pat NGO staff that were no longer situated in Aceh). While the NGOs that were interviewed for contextual data did not directly work in any of the village cases, insights from those interviews were valuable in understanding the similar conditions and structures in which they were operating. Other were consulted to gain access to pertinent data (for example, BAPPEDA staff, to gain access to GIS maps), to achieve clarity on timeline of resettlement processes (for example, BRR staff) or to gain an understanding of the broader context in which recovery was taking place (for example, the Head of BAPPEDA).

Informants were recruited through networking, mutual acquaintances or by visiting their respective offices. A complete list of informants is displayed in Table 3.5 below. Interview questions usually started by asking the informant about their position, their perspectives on the recovery process, and insights into priorities during early recovery, mid to long-term recovery and those at the present time. This was often followed by specific queries or kept open-ended to discussion that followed. Some impromptu interviews were conducted when presented with the opportunity, resulting in stimulating discussion and unique insights. Open-ended interviews ranged in time from 30 minutes to 2 hours. Most of the interviews were conducted at the agency office.

Type	Position	Organization/Agency	Data Collected
Government	1 Vice-Mayor ^f	Municipal office, Banda Aceh	Current priorities and vision
	2 Research and Development Officer	BAPPEDA Provinsi	Recovery process
	3 Secretary, Aceh Development Program	BAPPEDA Provinsi	Recovery process
	4 Technical Support Officer	BAPPEDA Provinsi	Recovery and housing process
	5 Unit Officer, GIS Unit	BAPPEDA Provinsi	Access to maps, guidance on cases
	6 Head	BAPPEDA Banda Aceh Barracks Coordinator (Past)	Recovery challenges, future plans
	7 Unit Officer, GIS Unit	BAPPEDA Banda Aceh	Access to maps, guidance on cases
	8 Secretary	BAPPEDA Banda Aceh	Housing verification process
	9 Program Staff ^f	BAPPEDA Banda Aceh	Recovery process
	10 Head of Development	BPM Banda Aceh	Access to data, insights on budgets
	11 Budgets Officer	BPM Banda Aceh	Budget insights on village cases
	12 Head of Section	PU Banda Aceh	Current infrastructure challenges
	13 Chief, Reconstruction Department	PU Banda Aceh (Current) BRR-Infrastructure (Past)	Recovery process
Government / NGO	14 Communications Spokesman	BRR (Past) Local NGO (Current)	Lessons learned from recovery
Government / Academic	15 Manager, Housing and Beneficiaries Division	BRR (Past) Lecturer (Current)	Recovery and housing process
	16 Social, Cultural and Religious Affairs	BRR (Past) Lecturer (Current)	Recovery challenges

Type	Position	Organization/Agency	Data Collected
NGO	17 Staff Member ^f	UNDP	Recovery challenges
	18 DRR Team	UNDP	Risk reduction programming
	19 Staff Member	World Bank	Recovery process
	20 Head	European Commission	Recovery process
	21 Staff Member	European Commission	Current priorities and challenges
	22 Head	IOM	Resettlement challenges
	23 Head	Islamic Relief	Recovery and housing process
Academic	24 Head of Research	TDMRC	Current research priorities
	25 Lecturer	IAIN University	General insights on recovery
	26 Lecturer	Syiah Kuala University	General insights on recovery

f) Female participant

Table 3.5. Experts interviewed

Source: Fieldwork

3.4.3. Journal

As indicated, a journal was maintained throughout the course of the field work. Daily reflections were reviewed on an on-going basis in order to help shape the research process. At times, experiences from one day would inform how data collection would take place the next day. An on-going analysis was conducted during the period of fieldwork to assist in understanding what to probe or inquire on when there was confusion or uncertainty.

3.5. Fieldwork challenges and ethical issues

3.5.1. Researcher – research assistant relationship

Having a local research assistant present during the fieldwork was vital in attaining the data that has been collected. To observe cultural sensitivities associated with close and extended interaction across genders and on the basis of personal comfort, the research assistant selected was female. Previously, she had worked as a local hire with a leading donor agency during the tsunami response and early recovery period. This was highly valuable during the data collection as her background knowledge of the recovery process was available at hand. Through her work experiences she was familiar with conducting focus group discussions. At the time of fieldwork the research assistant was considering further studies and awaiting scholarships for a graduate program. The arrangement that was nurtured between research assistant and researcher was a mutually

beneficial one, for she was keen on improving her English and learning about conducting research through the assistantship experience, and her skills in translating and assistance were vital for carrying out this research.

The vast majority of interviews and focus group discussions were conducted in Bahasa Indonesia by the researcher with the support of the RA. Though an understanding of basic Indonesian language had been acquired through UBC and Realia, translation by the research assistant was critical at times. Challenges that are commonly associated with conducting research in a foreign language were inevitable. Overcoming challenges included for example, ensuring that: meanings were not being lost in translation; that the translator was not unconsciously attaching bias to answers; and that heated discussions were not interrupted at the wrong times. To minimize this and to maximize capturing all of the information that had been conveyed, time was spent after each interview and focus group discussion with the research assistant and independently to complete notes and fill in any blanks. Basic training on co-facilitating focus group discussions was provided and over time, discussions were co-facilitated.

Having a research assistant was beneficial in ways beyond translation. For example, the assistant was able to grasp crucial contextual information about the local cultural nuances and subtleties of language that may have been missed otherwise. At times, the assistant would screen any questions that may be inappropriate for the situation. For instance, during some interviews we would realize that the informant was an ex-combatant from the GAM movement, with prevailing views on the rebellion described earlier. As part of the government strategy after the peace accord, several ex-combatants had been integrated into village life through resettlement. In some cases, discussing certain conditions prior to the tsunami would be avoided, including topics surrounding identity.

3.5.2. Local expectations

Because most foreigners who had been in Aceh had been there representing an aid agency, the expectation of assistance from me was apparent in many instances. In some instances during village surveying, villagers would gather around asking each other ‘ada uang?’ (“does she have money?”). Within the first minute of meeting anyone, the question, “where are you from?” was always asked. Being Canadian brought a perception of having money, especially within villages that had received assistance from Canadian NGOs and agencies. The need to immediately and clearly communicate intentions for being there became of utmost importance. Once the message that the

purpose of presence was for research being conducted by a student was understood, word travelled quickly and expectations of aid were removed. Travelling in a discrete vehicle minimized expectations, as most aid agency vehicles were branded. Having formal written proof of affiliation with the state university was useful in changing the perception from NGO staff member, to student, particularly among key experts.

Some of the villages that were surveyed in Aceh had received significant attention from researchers in the past. When selecting cases, attempts were made to choose cases that had not yet been researched, in order to avoid repetition of questioning and of data collected. Some villages surveyed indicated frustration from previous experiences. An example is one of the compounds in the village of Mataie that had been narrowed down as a good example of a participatory and moved resettlement. In this particular case a group of women spoke up on feeling exploited by researchers, talking extensively about a medical researcher that had arrived in their village to study their health status and had then left suddenly. “Sometimes we are too nice. We are even feeding them. But we get nothing in return. We know they got something from us, but we didn’t get anything” (Female, 40s, unemployed). The same compound had recently been recorded for a foreign documentary, though they were not sure what for.²² The discussion is an example of the ethical dilemmas that surfaced over the course of the fieldwork. The villagers that expressed frustration were in villages that were not selected as case studies due to negative perceptions on the research from the very start.

3.5.3. Researcher – participant relationship

The relationship between researcher and participant is sensitive in any research project. As someone who was visibly foreign to the setting for this research study, this was even more so and drew immediate attention from community members. Due to the influx of international aid workers after the tsunami, most villagers were comfortable with foreigners. However, at the time of field research most of the expatriate community had left, and there were very few foreigners remaining in the Banda Aceh and surrounding area. In most cases, the research assistant was key in facilitating the introduction to the community and explaining the purpose of our presence. The value of education is held in high regard in Acehnese culture, and affiliation with the state university was significant in gaining initial support from the village chief in respective villages. Once the chief

²² The researcher was not able to identify or locate the name of this documentary.

showed support, acceptance by villagers followed. Most of the meetings were held outside informants' homes and/or in public places; over time most knew about the research and drew more and more engaged. It was common to spend time having tea with informants and family members after interviews. Similarly, after some of the focus group discussions smaller groups would remain to informally chat on topics outside the scope of the research.

Building trust and rapport in village cases and among participants was a guiding standard in this research (Patton, 1990). Aceh is a predominately Muslim environment, with over 98% of the population practicing Islam and being governed through Islamic law. As the author is a Muslim, being of common faith was a key advantage in conducting this research. Villagers often conveyed trust, based on common beliefs and principles. The commonality enabled quick acceptance, as community members were able to associate on the level of greatest importance to them. For example, on finding out about the common faith, informants would release a sigh, followed by "You're Muslim! Why didn't you say so from the start! Then of course you know how it is for us." (Male, 50s, village leader) At times it was as though the entire tone of the conversation immediately shifted to being more relaxed. Furthermore, participating in religious services with members of the community at their local mosques brought a distinct sense of unity. Through sharing experiences with other scholars conducting research in Aceh it appeared that the unique positioning of being a foreigner, yet of the same faith, led to community perceptions and interactions that were quite different than those experienced by foreign colleagues.

At the time of fieldwork in 2011, just over six years had passed since the disaster. Many recalled the event and aftermath with vivid descriptions. During several of the interviews informants would become teary eyed and emotional. At moments, continuing the interview would become difficult, and even changing the topic felt insensitive. It was common for villagers to express memories of loved ones who passed away from the tsunami through comments such as, "my daughter would have been your age now" (Female, 50s, teacher), "my son didn't want to be a fisherman... he was planning to study in university like you" (Male, 40s, fisherman). During an interview with one of the village chiefs, tearfully said, "you look like my wife... you remind me of her, so how can I not help you?" (Male, 50s, village leader). How to properly handle emotional encounters during the data collection was difficult. At times it felt wrong to be contributing to the resurfacing of memories. Nevertheless, being empathic to their losses was important.

3.5.4. Benefit to participants

It is hoped that the benefits of this research to participants came partly as they realized the importance of their role within their communities. As many pondered on current community issues and conditions during interviews and focus group discussions, it is hoped that discussion brought to light some of the concerns that could be addressed and prioritized by the community over time. The majority of survivors in some of the villages were young adults, and in several instances they would comment on feeling inspired by seeing another young adult that they were able to relate with is pursuing graduate studies.

It is intended that findings of this research will be shared in Aceh in due course. One avenue in which this will be pursued will be within the academic community in Aceh, through participation at future ICAIOS conferences and presentations to students and scholars working at ICAIOS. Another avenue will be through some of the agencies and organizations in which relationships have been developed. Several key experts have requested findings to be sent to them so that they may possibly gain insights for future plans. Some experts requested meetings on preliminary findings and possible recommendations for development prior to my return to Canada. For example, an informal discussion was conducted with the Head of the Regional Body for Planning and Development, Banda Aceh in one of the last few weeks of fieldwork.

3.5.5. Trustworthiness

It was important to strive toward an academically rigorous study, which includes establishing the trustworthiness of this research through various strategies and criteria (Lincoln and Guba, 1985). Specific strategies were used throughout the research process in order to increase the worth of this study (Krefting, 1990). The research process (i.e. several months in Vancouver between the exploratory trip and data collection displayed in Figure 3.1) enabled some time for personal reflection on the role of the researcher and positionality in the data collection process. An extended period of time was spent in each of the villages in order to build a rapport and ensure that responses were built on personal experience of the community members rather than what was expected from community members. The field journal kept during the fieldwork process (see Section 3.5.4) enabled a process of reflexivity – an assessment of the researcher’s background, perceptions and interests throughout the fieldwork (Ruby, 1980). The triangulation of both data methods and data sources (see Section 3.4.2) was a technique used to enhance the quality and credibility of the research (Krefting,

1990). Continuous exchange and dialogue with researchers and professors at the ICAIOS was carried out over the course of fieldwork to allow for peer examination and to ensure dependability (ibid.). Finally, neutrality was enhanced and personal biases were minimized through constant feedback and dialogue with the local research assistant who was familiar with qualitative research methods (see Section 3.6.1).

CHAPTER FOUR: CONTEXT AND CASE STUDIES

Chapter Four presents data collected during the fieldwork process that has just been described in Chapter Three. Contextual data that was collected during key expert interviews (i.e., from government agencies, academic institutions and NGOs) were analyzed thematically by organizing interview notes within the major themes that were apparent through a preliminary analysis of interview notes.

The first part of the chapter develops an understanding of the current state of recovery in Aceh, including contextual insights relevant to Banda Aceh and Aceh Besar. It concludes by summarizing some of the challenges and priorities that were expressed as being of major prominence in the immediate and near future. The second part of the chapter provides descriptions of each of the case study villages explored in the research. Each description has common sub-headings including overview, resettlement process and current conditions. Descriptors and variables of concern are summarized at the end of these descriptions.

4.1. Transition from recovery to development

4.1.1. Background

In order to situate this study, it is important to understand the transitional environment of tsunami-affected Aceh as it moves from a state of recovery to that of on-going development. While much has been written on the response and early recovery in Aceh, research on long-term recovery and development is sparse, particularly after 2009. This is partly due to the presence of a strong international academic community in the years immediately after the tsunami, compared to mere handfuls that were still actively conducting research at the time of this study. Consequently, part of this study aimed at gathering basic perceptions on this unique period of transition.

Insights on the transitional environment were gathered through interviews conducted with key experts in Banda Aceh and Aceh Besar over the course of fieldwork in 2011 (See Table 3.5.). With some overlap, the bulk of key experts were local leaders from governmental agencies (n=16) in Banda Aceh and Aceh Besar. Several others were from local or international NGOs and/or donor agencies that were still operating in the region (n=9), and a small number were from local academic institutions (n=5).

Early in their interviews, each of the 26 experts was broadly asked, “Is recovery complete?” A definition of recovery outlined earlier in Chapter One was provided (the restoration and improvement of living conditions of disaster affected communities). However, in their responses most described recovery simply as a return to a normal and/or acceptable level of functioning. As listed in Table 4.1 below, few experts responded with a clear response of yes or no (n=8).

Three times as many responded yes (n=6) over no (n=2). One of the ‘no’ respondents was vehement in his response, while the other claimed that, “No, recovery is maybe 95% complete; I think two to four years more are needed for the rest” (Male, 60s, Government)²³. As expected, around three-quarters of the respondents did not give a yes or no, but rather, provided a more complex answer. What the breakdown shows is that even though over 6 years had passed since the disaster event, recovery in Aceh was more complicated than a simple binary question.

Yes	No	Other (Examples below)
		“Well, depends...”
		“It’s not such an easy question...”
		[Laughter]... “Good question”
		“What is recovery?”
6	2	18

Table 4.1. Responses to question on whether recovery was complete

Source: Fieldwork

Respondents described the situation at length, some directing the conversation in specific directions, others venting frustrations on the recovery process, while a handful questioned what was even meant by the notion of recovery. Many alluded to different dimensions of recovery being completed (for example, housing) while other dimensions were neglected (for example, public infrastructure). Many others divided recovery into short term and long term and referred to the current stage as a nearer completion of long-term recovery. Even though the question inquired on ‘community’ recovery, the response would either refer to individual recovery, or the recovery of Banda Aceh or Aceh Besar in their responses.

²³ Key expert interviewees will be referred to in this way (i.e., Male/Female, Age, Type). Key informant interviewees will be referred to as (Male/Female, Age, Village), except in the ‘Descriptions of Communities’ in Section 4.2 where they will be referred to as (Male/Female, Age).

To get a general sense of the before and after of the context from the perception of key experts, each of the 26 experts were asked, “In your opinion, is the current situation better, worse, or the same as before the disaster?” Responses are indicated in Table 4.2. below. While an interview template was not used for key expert interviews, this initial question was used primarily to trigger discussion, which in most cases pointed to key challenges faced by the region. These key challenges will be described in the discussion that follows and summarized in Section 4.1.5.

Better	Same	Worse
19	0	7

Table 4.2. Responses to question on state of current situation

Source: Fieldwork

The question yielded some interesting answers amongst the respondents. For example, “Banda Aceh is now much better. Actually, it is 10 years better than it is supposed to be. It looks like a new city now” (Male, 50s, Government).

It became clear during interviews that a multitude of unique historical, political, economic and social issues had influenced the process of recovery in Aceh, and the path of development that Aceh was transitioning into. To go into substantial depth and discussion of these and other key elements of transition is not the purpose of this section or study. Rather, select excerpts from an analysis of key expert interview findings are presented to provide contextual overviews and insights into major observations that are important for this study and will feed into further data analysis. Findings are grouped under three dominant themes that emerged as being of key importance to development during the transitional phase of recovery. These are: the aftermath of international aid, alternative approaches to urban economic growth, and societal changes.

4.1.2. The aftermath of international aid

4.1.2.1. Closure of the Agency for the Rehabilitation and Reconstruction (BRR)

April 2009, four years after the disaster, marked the closure of BRR and the transfer of responsibility for overall coordination and sustainability to the Indonesian National Development

Planning Agency – BAPPENAS (ADB, 2009).²⁴ Although long anticipated, all of the international and local NGO key experts interviewed alluded to negative implications of the BRR closure, claiming it was far too soon. As mandated by the closure, the vast majority of the international NGOs were required to quickly wrap up projects and leave the region. As one NGO informant described it, “in 2009 everyone geared down and ran away” (Male, 50s, NGO). In many cases, NGOs entirely abandoned incomplete projects while others left projects to untrained local staff. Challenges in visa re-entry and extended stay led to narrowing the scope of many projects and premature project monitoring and evaluation. Excerpts from interviews are included below:

With the closure of BRR, many problems with work permits and visa extensions surfaced. Strict processes were imposed by the Indonesian government in early 2009... and these were implemented by the military intelligence. All of this led to early wrap up for many projects. They [BRR] chose to cut everything... it didn't matter if the project was finished or not. It is very sad that BRR closed so prematurely. A lot of NGOs would have continued had BRR stayed open. Even worse is that many thousands of locals suddenly became unemployed prematurely with the closure. (Male, 60s, NGO)

Because of the pressure put by BRR, NGOs were quick to finish their work. BRR said to us you have to finish by 2008 or we will take over the project. Otherwise NGOs would have stayed for 5 years or more – that was the initial plan for most of us. (Male, 50s, NGO)

After the BRR closure, things have become very difficult for donors. In 2010 there were new regulations enforced, so now donors must coordinate with the Government of Indonesia and the relevant Aceh government body (Dinas) on how the funds will be dispersed. (Male, 50s, Government)

According to official documents, prior to their closure, BRR had developed an exit strategy in which assets would be transferred from BRR and other stakeholders to various government bodies in order to ensure continuity between the reconstruction phase and longer-term development (ADB, 2009). However, based on interviews, there were substantial gaps in this process. As one NGO representative put it, “Before closing, BRR gave some homework to the government. But the government cannot finish the homework” (Male, 30s, NGO). According to a government informant, many transfers were still pending “We still have to finish the handover of projects like public

²⁴ A transitional agency, the BKRA was established by the Government of Indonesia for the period of 2009 as a body in charge of the coordination, synchronization, and the monitoring and evaluation of reconstruction activities, and to prepare ongoing development plans. At the time of fieldwork, BKRA had shut down, and few informants raised the BKRA in discussions as having played a significant role beyond the coordination of remaining construction activities.

facilities and government facilities. Only the housing part is done” (Male, 50s, Government). Several key challenges in the current day were attributed to the inefficiencies and deficiencies of various transfers.

A big issue now is asset transfer and maintenance. Before BRR closed, it should have been clear to designate the particular ministry or agency that was responsible for each project... even in the cases they did do that, they needed to have made sure that sufficient funds were set aside by that particular designate. Things are gradually deteriorating now... only a small percentage of infrastructure projects are being maintained. It will only get worse over time. (Male, 60s, NGO)

Numerous topics that emerged in interviews related to complications during the reconstruction process and unique challenges that had to be overcome. These complications included: unclear land borders, inconsistent quality in building materials, corrupt contractors, beneficiaries getting multiple houses, unwarranted newcomers demanding houses, and unreliable data. For example, a key player in the reconstruction strategy commented, “Housing, land, statistics, all of that data was very dynamic during the recovery process” (Male, 60s, Government).

Many interviewees spoke at length of housing-related difficulties and possible lessons learned for future events. For instance, one government official spoke of too much being built too fast:

Immediately after the tsunami, it was hard to coordinate the NGOs, what they were doing and where, who was to get a house and why. It should have been controlled better and the rebuilding along the coast should not have happened” (Male, 50s, Government).

This practice was described as being common because it was easier for NGOs to rebuild on the same land (due to security, legality, and so on), which discouraged them from moving communities to safer ground. Several researchers (i.e., Clarke et al. 2010; Lizarralde et al. 2010; Fitzpatrick 2007; Verby 2007) who conducted research earlier on in the recovery process have studied many of these complications, including housing, in significant depth, and for that reason within this study related data will not be presented in much detail.

What is important to note, as repeatedly asserted by informants, is that with the housing sector now considered a “closed matter” and a “private issue” there was little work taking place in terms of new housing for survivors in 2011, even though many related matters remain unresolved. For example:

[On recovery] Housing is complete – in fact there are too many homes now. Education is complete – we have some of the best quality schools in Indonesia. Infrastructure though... like roads and ports... they still need support. (Male, 30s, Government)

Before, almost every day there was a demonstration here about housing. In 2008, we made a housing verification team for the city of Banda Aceh. But until now the issues of double houses is not solved. Some beneficiaries didn't get a house. Some ended up getting two or three. We have identified many cases like this and have given the cases to the police, but the file is stuck there and there has been no action done on this yet. (Male, 40s, Government)

Rather, current (2011) infrastructure priorities in Banda Aceh have shifted from housing and large-scale projects to small-scale infrastructure projects. These include road widening plans, and work on community water and electricity provision. As one informant, who explained the BRR process at length, said, "In most villages, first it was the village planning, then the housing, and then they think about water and sanitation. They should have thought about housing and sanitation at the same time" (Male, 50s, Government). Many government officials pointed to challenges in basic infrastructure provision across many communities and alluded to a recent focus on developing public facilities such as water systems, drainage supplies and sanitation systems on a community scale. Funding mechanisms from BAPPEDA had also shifted toward supporting these priorities, with one funding mechanism requiring villages to use 70% of funds toward infrastructure development.

4.1.2.2. Remaining INGO Presence

After the BRR closed in 2009, international NGOs were forced to shift their programming from recovery to development through the launch of the Aceh Economic Development Financing Facility (EDFF), through funding from the Multi-Donor Fund (MDF). Set up by 15 different donors (including the European Union, Canada, World Bank, Asian Development Bank, and so on) to support the government of Indonesia during the recovery and reconstruction, the MDF was one of few visible active international bodies remaining in Aceh at the time of interviewing in 2011 (with exit plans for June 2012). Insights obtained from the MDF reinforced current priorities and activities being expressed by local NGOs interviewed. These priorities centred around directing programs to regions outside of tsunami affected regions. For example, the focus of EDFF programs was for development within inland Aceh, with no money being allocated from the program to Banda Aceh or Aceh Besar (i.e., any of the village cases being used in this study). This was justified by the fact that international aid delivery had widened the gap between coastal areas and interior, with "the real poor now only being visible in the interior of Aceh - they are really far behind from the rest of Banda

Aceh and Aceh Besar” (Male, 50s, NGO). In addition, many key experts were weary of further development plans. For example:

Development is going to get worse, and is already getting worse, even compared to before the tsunami. It is because of the corruption, especially at the government level. (Male, 50s, Academic)

We are just about coming out of the recovery phase and moving on to the economic development phase - but that needs lots of international support, which has left. Instead, there is a lot of hope for private investors” (Male, 60s, NGO).

4.1.2.3. Limited capacity building and challenges in livelihood support

On paper and under the premise of effective development programming, capacity building was emphasized as an important component of the recovery efforts in post-tsunami Aceh. Many livelihood programs were successful; however, the majority of reconstruction efforts were focused on physical reconstruction. As one interviewee explained:

Is recovery complete? Yes, from the physical restoration side it is finished. But from the true recovery side, economic recovery and livelihood building, it is still not complete. There is still a lot to do. (Male, 30s, NGO).

While many parts of Banda Aceh and Aceh Besar have new buildings and facilities, deficiencies in capacity remained across local government bodies, sectors and institutions. It appeared that the capacity building that was currently being pursued by the government was largely being done at a provincial level, and not so much at a district level. Most of the key experts referred to gaps in capacity building:

In terms of infrastructure, we did well. Human capital is the problem. The government was too focused on infrastructure... all of the programs put a priority on that. They are not really focused on soft development... For example, all the money was spent on school buildings, but not on upgrading the teaching skills of teachers. It really is a shame. (Male, 50s, Academic)

All of the infrastructure is done, now we have to focus on how to manage it. How can the government provide public services in the infrastructure. We have a very good hospital, clinics, and school - there are more than the national standard now in terms of numbers and quality of facilities. We don't have the doctors, teachers and so on... they are not integrated into the system and there needs to be capacity building for official staff. (Male, 40s, Government)

A multitude of administrative structures are there in the government, but the awareness of how to use them is not there. The capacity of the government's middle management is very

poor. That is the challenge. There were some NGOs and sectors of BRR who were working on capacity building, but it was just not enough. (Male, 30s, NGO)

Implications of the limited capacity extended to current budget limitations. For example:

Don't get me wrong... government funds received are high, and structures in place are good, but the capacities to handle them are low. The money has to go back to Jakarta. You see, if the Aceh government doesn't spend the money that the national government sends by a given date, the budget money gets taken back. (Male, 60s, NGO)

Similarly, many informants pointed to a limited emphasis on livelihood support during the recovery process and the impact that it was having on the current situation.

The livelihood interventions that were put in place are not working. Yes, sewing machines were distributed and yes, some are being used, but many are just lying around. How many seamstresses can you have in one village? Same with the distribution of cows – some people just didn't know what to do with them. (Male, 30s, NGO)

In addition, conversations with research colleagues and interviews with academic scholars pointed to deeper issues in livelihood support that was implemented without paying attention to underlying or prevailing mindsets (i.e., historical and political pasts). For example:

We tried to do a revolving fund for livelihood development, but it failed. Why? Because anything that comes from the government, the thinking of people is that this is our right and there is no need to return it. We need to establish the value first, before giving the money. For example, we give a boat for three families, but they can't seem to work together. We need to teach them how to work together first, and then give them the tools. The situation is not just like this because of the tsunami, though it made it worse, but it goes back to the Soherto²⁵ regime, which was trying to centralize with authoritarianism. It didn't give people the chance to actualize their full potential and it destroyed the values of people... Even though people say it is all of the outsiders that have changed the values of people, I don't think so. It was before with Soherto. In fact, so many NGOs are doing work on gender, democracy and so on, but it is the government who does not have enough intention to do it... During the Soherto regime, the leader was served. We need to change the thinking to leaders serving. We need a paradigm shift, but for this there is a long way to go. (Male, 50s, Academic)

Many individuals who were contacted – whether they were key experts, community members or the local butcher – spoke of increasing difficulty with the job situation across Aceh. For example, an NGO representative argued that, “private sector creation is the engine of growth, but in Aceh,

²⁵ Soherto was the second President of Indonesia who held the office for 31 years under his authoritarian regime, before resigning in 1998. Under his “New Order” administration, he created a centralized and military-controlled government.

after the tsunami, it didn't happen" (Male, 30s, NGO). While an informant from the university anticipated negative impacts down the line, "Job creation is a big problem. If people continue like this with no job creation, then we will go back to a state of conflict because of no money and no employment options" (Female, 30s, Academic). With many locals having been employed by NGOs immediately after the tsunami, now that the majority of NGOs had left the region, unemployment rates were high. While exact unemployment rates and out migration rates are not available, this general observation of few jobs supports the population growth trends outlined in Section 1.2.1.3. Findings also support conclusions in the Aceh HDR, stating that "the need to resuscitate the economy in order to generate productive jobs for all" is among the bigger challenges of the current day (UNDP, 2011, iii).

4.1.3. Alternative approaches to urban economic growth

4.1.3.1. Expansion to the South

As described earlier and reinforced by planning agency officials, rebuilding after the disaster commenced before a spatial plan for Banda Aceh and its surrounding area was published. For example, "According to our first blueprint, only a few people were to be allowed on the coastline. We needed to have a new spatial plan right away, but there was no time" (Male, 50s, Government). Consequently, many government interviewees referred to the period after the disaster as a "missed opportunity". Planning agencies were trying to make up for the missed opportunity by encouraging movement to the South and away from the coast.

Dialogues amongst government informants in Banda Aceh often related to plans to expand in the South of the city alongside expectations that the economy would grow in that region. Two interviewees even described the South as a future "sub-city" of Banda Aceh. The land in the South previously belonged to neighbouring Aceh Besar, but an agreement between the mayors in 2008/2009 passed the land over to the city of Banda Aceh. With a concerted effort to make the South more attractive, many government officials were keen to share development plans and detailed PowerPoint presentations at various meetings that were attended during the course of the fieldwork. These presentations would often precede, accompany or follow key expert interviews. In some cases several government staff would be asked to share detailed plans, which ranged from 5 to 20 year programs. The Planning Agency's detailed spatial plan for 2016 included in Figure 4.1 below

presents this vision²⁶. As indicated in Figure 4.1, it was anticipated that in 30 years, the city centre would have fully transitioned to the South.

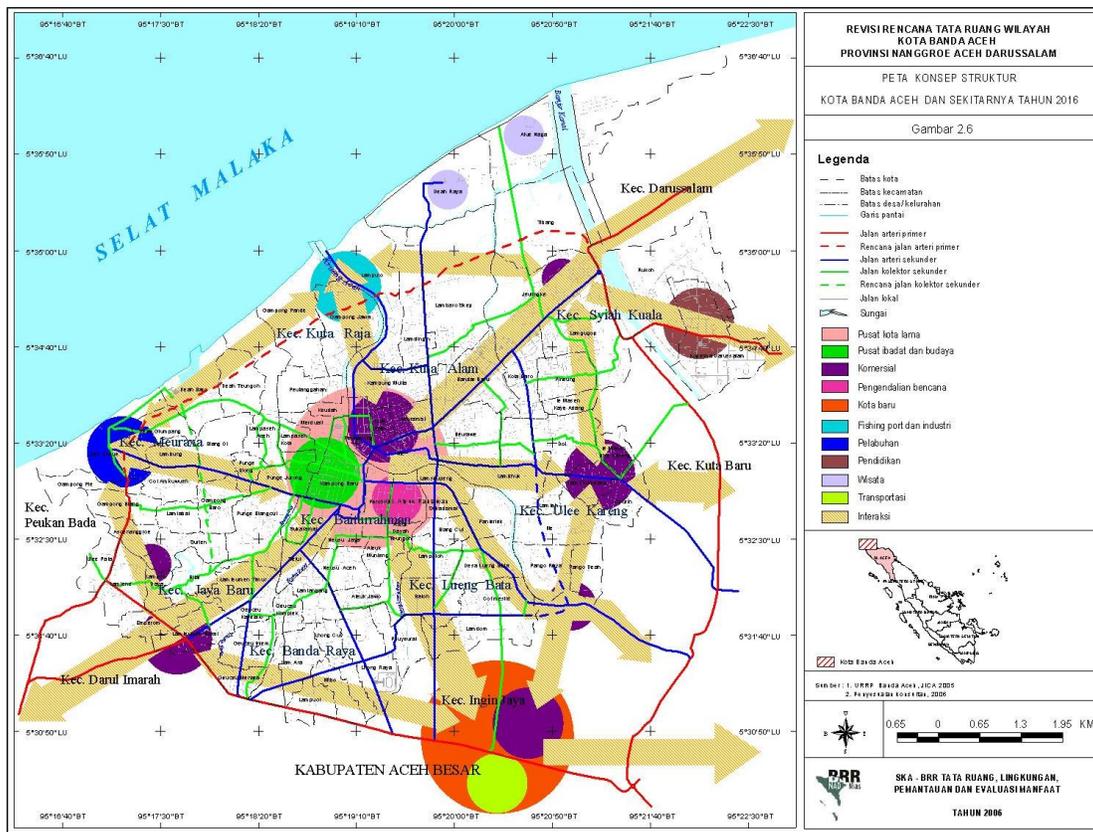


Figure 4.1. Banda Aceh spatial plan 2016. Big orange circle marks the “South”.

Source: Map provided by BAPPEDA Banda Aceh during fieldwork

Reasons for encouraging movement to the South were explained by interviewees under four themes: as a risk reduction measure, as a viable solution to land shortage along the coast, as a means to creating new livelihoods beyond the traditional fishing culture, and in order to achieve “Aceh Green” goals (described in the next paragraph). Since the South is a significant distance from the coast (approximately 8 km), the idea is that developments and communities will be at a reduced risk from flooding and/or another possible tsunami event. However, the Sumatra fault along the south will still pose an earthquake risk. With the loss of land at the coast and the price of land in Banda

²⁶ Note: the spatial plan for 2016 did not have any influence on the communities selected as the case studies for this study.

Aceh having increased by tenfold (according to the City Planning Office), land in the South at the time of study (2011) was amongst the most affordable. However, the key challenge expressed by planners was the lack of incentives for people to move. Even when relocation incentives are offered (i.e., providing land in the South), it has been largely unsuccessful. As one key government player in this process asserted:

We lost the moment after the tsunami. That is when the relocation could have happened. People along the coast say it is business as usual. They seem to have forgotten about the tsunami” (Male, 50s, Government).

In addition, the expansion also comes at the same time as sustainability initiatives, with a strong commitment to an “Aceh Green” campaign. Launched in 2007 by Aceh’s Governor Irwandi as a means to promote environmentally sustainable economic development, “Aceh Green” is a provincial development paradigm that is actively being mainstreamed into all provincial development planning and consists of many distinct parts including energy security, environmental conservation, waste management, and so on. One component is manifested as the goal of making Banda Aceh 30% green by 2029, meaning 30% of land in Banda Aceh would become open space owned by the government. Based on interviews, estimates specific to Banda Aceh point to a current “Aceh green” level at 8 to 9%. One government officer explained that the goal would become possible through land acquisition of both personal property and businesses who decided to move away (i.e., turning gas stations into parks). She argued that “if the price is okay, the people are agreeing to move” (Female, 30s, Government). Relocations offered by the government were to the South, including to new apartments made in the South. The campaign also requires that protected lands not be cultivated, which accounts for 50% of the province of Aceh. Only unprotected areas can be used for economic activity and future growth.

At the time of interviews the South had recently opened a new bus terminal, a new ring road, several new small markets, and new private housing developments. A long-term vision for the area includes the development of a new big market – with hopes for it to become Banda Aceh’s central market – and new major roads to link and expand networks in the South. The orange circle at the south of Figure 4.1. is labelled “Kota Baro”, meaning “New City”, the arrows describing various evacuation routes (both from the coast and from the fault line in the South), the purple circles indicating key commercial centres (with the newest being within the orange circle), and the yellow circle indicating the new transportation hub (again within the orange circle). Other new infrastructures are indicated through the legend. However, while the government was pushing for the

macro infrastructure planning of Banda Aceh, many informants argued that the micro scale planning was still a challenge and this was not captured in broader spatial planning processes.

4.1.3.2. Tourism

In addition to plans to expand in the south was the vision of “Islamic tourism”. This vision is one that is promoted by the Mayor and municipality of Banda Aceh. It is the hope that tourism would be a driver to stimulate the service industry to the South. With the recent establishment of a Culture and Tourism Agency in partnership with government agencies, a Visit Aceh Year 2011 program was designed to promote the tourism industry in Aceh. It is hoped that tourism will become a significant source of revenue for local administrations.

Many initiatives linked to the tourism agenda are visible across Banda Aceh. These include large signage, government officers sporting “Visit Banda Aceh 2011” uniforms once a week, musical performances and cultural parades. The period of fieldwork was timely as it occurred alongside this initiative, which allowed for participation at these events. Insights from the events would often explain observations and discussions that would come up during interviewing and field visits. For example, it appeared that the rule that government officers should wear their official tourism shirts every Thursday was only practiced strictly in one of the village cases (Lampulo), where all of the village school teachers and principals were visibly abiding by this rule. Attending festivals and organized events also enabled informal conversations on priorities of development plans all over Aceh. This included the “Banda Aceh City Expo”, an event over the course of five days at the end of May 2011, to enable cooperation across all sectors including between governments and private investors. Distinct initiatives in marketing specific landmarks as Indonesian tourist destinations (for example, Wei Island, commemorative poles, and the tsunami museum), then in their infancy, were taking form.

While many spoke positively regarding the musical and cultural events, the majority of key experts from NGO and academic communities did not speak favourably about the emphasis that had been placed on the tourism agenda in Aceh, believing that other priorities were more pressing. For example, when discussing the current state of development, an NGO representation argued that:

The problem is that our top leaders want to put priority on tourism. But, in reality there needs to be economic priority for local population activities and local livelihoods support. This is a big problem in Banda Aceh. (Male, 30s, NGO)

4.1.4. Societal changes

4.1.4.1. Cultural shifts

Tsunami-affected Aceh was described as having experienced substantial cultural shifts since the disaster event. While some described this as a direct impact of the event and related consequences (i.e., the influx of the international aid community), others attributed the changes to the end of an era of conflict. Regardless of cause, many of the discussions with key experts across government and academia referred to cultural shifts as being a key element of societal change influencing the course of development in Aceh.

Displacement, newcomers to the region, and new marriages were all referenced as contributing elements of cultural shifts, in terms of new customs, traditions and values. Furthermore, the implementation of Shariah law (see Section 1.3.5.) soon after the tsunami influenced cultural shifts associated with religious practices, including stricter guidelines and rules on practicing the faith. Values associated with family had also experienced change. This was associated with NGO practices that were described as changing family structures and leading to shifts in notions of family. For example:

Before the tsunami it would be common for there to be three families – three generations – living in one house. But after the tsunami, each of the families acquired their own house, so it has become three independent houses on the same lot.” (Male, 50s, Government)

At the same time, the aid brought changes to attitudes with key experts alluding to increased jealousies, dependencies and thoughts of entitlement among the people of Aceh. Much of the jealousy was said to have arisen from discrepancies in aid distribution. For instance:

At first, materials was not so important to people. Some people were even accepting bamboo homes. After the second year when materials were more available is when the jealousy started with all of the different houses, with people saying “Why is their house better?”. In the third year, houses were even better, and in the fourth year, the best houses... God was rewarding them for their patience. It was not discrimination. And the renters were the last to get homes, so the renters got better housing. (Male, 30s, Government)

Aid schemes, such as 'cash for work' was described as having contributed to expectations that extended to cultural shifts. Cash for work schemes were essentially programs whereby NGOs would provide cash for community members to clean up debris within their communities. While positive impacts of these schemes are undeniable (i.e., temporary provision of income), some reported a new culture of not doing anything (i.e., cleaning around their village) for the best interest of their

community without compensation for doing this by an NGO. These expectations extended to the job market. Having been exposed to NGO salaries, expectations from jobs had changed. This was reported to be especially profound amongst the youth and was supported by village case discussions. For example:

For our 'Cleaning Together Days' before the tsunami there was a much higher number of participants, but now we are getting very few. Maybe this is a mistake of the NGO system. Because everything we do, we would get paid. Now we expect money for everything, and won't do it if there isn't money (Male, 30s, Bitai).

The social community is changing... no one is doing anything for free anymore. Because we were getting cash for work of 30,000 Rp per day and we have become dependent on that. Now everyone expects money for helping the community (Male, 30s, Bitai).

Before the tsunami we had 'Cleaning Together Days'. Then the NGOs brought Cash for Work, but now that is not operating anymore. People don't want to go to 'Cleaning Together Days' anymore, they want to get paid for doing it. We have to get back to doing it for the sake of the community (Male, 40s, Lampulo)

Alongside expectations of compensation, dependencies that had grown out of recovery programs were also raised. There was also evidence of communities finding opportunity that went against recovery initiatives. For example:

In terms of recovery, infrastructure like roads, highways and ports still need support... In Calang we are having a lot of troubles. You see, the community doesn't want to move so that we can continue building the road. The community is making money to cross people across the water – and it is a source of livelihood for them now! Anyone who needs to cross over has to use their raft crossing... it is a good business for them. (Male, 30s, Government).

4.1.4.2. Institutional transformations

From a region where the vast majority of people did not know what a tsunami was, let alone have sufficient preparedness in place, Aceh has become very active in disaster risk reduction thinking and programming. During interviews with key experts, interviewees demonstrated an institutional shift in mainstreaming disaster risk reduction into everyday thinking and prioritization. For instance, interviewees from the Planning Agency and Public Works discussed mitigation plans, including one to make a 40km dyke/ring road from the West coast of the city (Uleelee) to the airport. However, they also mentioned that the land acquisition for making the road was costing more than building the actual infrastructure. Detailed spatial plan indicating evacuation roads were also shared (for example, Figure 4.2 below).

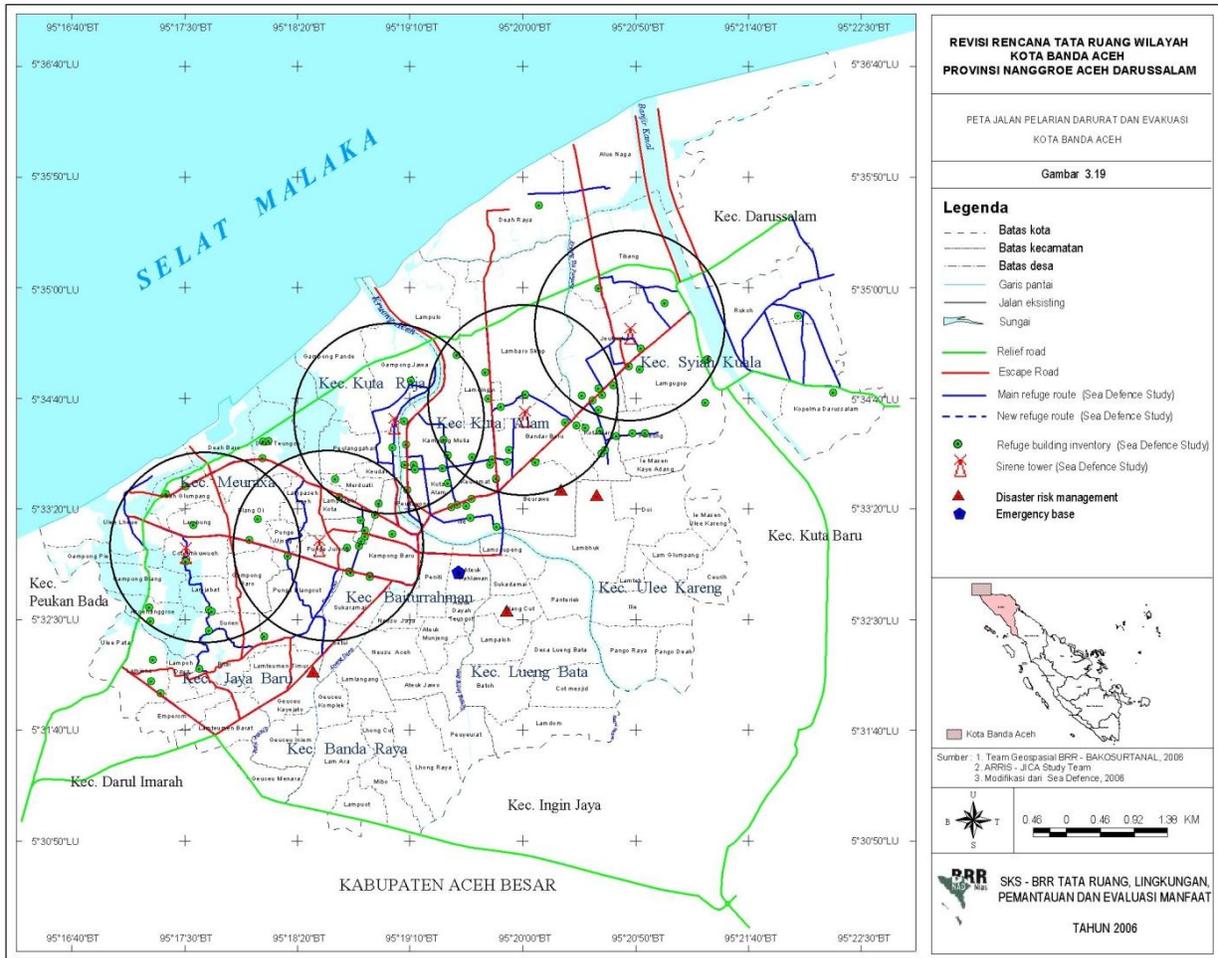


Figure 4.2. Banda Aceh spatial plan with evacuation routes.

Source: Map provided by BAPPEDA Banda Aceh during fieldwork

As indicated in the legend, relief roads appear in green, escape roads in red, main refuge route in blue and new refuge routes in black dotted line. Key landmarks, including refuge buildings and evacuation towers are indicated by symbols in the legend.

Local initiatives supported the institutionalization of a culture of DRR. For example, interviews with members of TDMRC and staff at the UNDP DRR program provided insights into programs being instituted. Achievements included initiatives such as annual tsunami drills across the coast (recently attended by 4,000 community members), the incorporation of DRR into school curriculum, and the awareness and use of escape towers. The escape towers functioned as multi-purpose buildings with some being used as community centres. The same institutional shift at the

community level, however, varied in spite of many similar strong initiatives. Further analysis in the next chapters will explore this and possible reasons in greater detail.

4.1.5. Summary

As described throughout the section, the transitional environment of Aceh at the time of fieldwork was one marked by a number of challenges as it moved into re-establishing a course of development. The most prominent challenges during this transition that have been discussed include the following (in no particular order):

1. Lack of on-going maintenance of new infrastructure built by donors and NGOs (i.e., schools and hospitals).
2. Lack of clear roles and responsibilities of government agencies.
3. Need for the creation of new livelihoods.
4. Limited land availability near the city centre for new developments, and high land prices.
5. Need to incorporate risk reduction into future development plans.
6. Societal tensions due to profound cultural shifts.

As discussed, a number of key priorities were also emphasized by many of the experts and reinforced during involvement and engagement with local activities. All of these were spoken of as primarily a responsibility of the government, and secondarily as a responsibility of the people. These include (in no particular order):

1. Promoting tourism in Aceh.
2. Working on roads and drainage systems.
3. Instilling a culture of disaster preparedness and prevention
4. Relocating populations to the South of Banda Aceh
5. Capacity building within government agencies

These challenges and priorities shape the unique context in which village cases are positioned. While each village case will be described in detail, these broad issues will be important in understanding the broader state of affairs in which they exist.

4.2. Description of communities

4.2.1. The compound of Neheun

4.2.1.1. Overview: a non-participatory case of resettlement not in previous location

Neheun Compound is a ‘moved, non-participatory’ case. Located 15 kilometres outside of the City Centre of Banda Aceh, it is part of the Masjid Raya subdistrict of Aceh Besar (see Figure 3.4). On what was previously forested land, after the tsunami, the hillside compound was built by NGO-A²⁷ in 2007, without consultation from beneficiaries. The compound itself goes by many other names including: NGO-A Village, Friendship Village, and Jackie Chan Village (due to of rumors that Jackie Chan had visited the village during the reconstruction). Though called a village, administratively speaking, it is a compound that is part of the bigger village of Neheun. To support the Neheun village chief, who is mainly in charge of administrative duties, each compound has its own compound chief allowing for a decentralized village leadership structure. With population estimates of around 12,000 villagers, the original village of Neheun is expansive and dates back generations.

There are four other new compounds similar to Neheun Compound; these were all created after the tsunami as a means to accommodate those left without land and/or shelter. Each compound was built by a different NGO, and each development could be easily distinguished by its unique architecture and uniform roof colours (see Figure 4.3). While some areas mark the original village of Neheun, others, like Promnas Ujungbatee (a government housing site), are pre-tsunami additions off the main village lines. All compound chiefs typically meet with the Neheun chief once a year for the planning and allocating of the budget and under rare circumstances, to resolve any major problems.

²⁷ The actual name of NGOs operating in communities has been kept anonymous (e.g., NGO-A, NGO-B, NGO-C, and so on). This has been done in order to avoid the misrepresentation of any of the NGOs due to potential sensitive information revealed by community members. Furthermore, all of the information on resettlement was obtained by interviews with community members and NGOs were not consulted on accuracy of the information.



Figure 4.3. View of other compounds around Neheun Compound

Source: Photograph by author (D. Panjwani)

Neheun as a whole includes mountainous, swamp and coastal land. Neheun Compound itself is located along the mountainous land and is significantly elevated from the coastline (see Figure 4.4.). The compound is frequented by outsiders, as it is a famed resettlement village with breathtaking panoramic views of the ocean. Physically distinct and relatively isolated from the rest of Neheun because of its elevation, the community stands out on its own. For this reason, although technically a compound, Neheun Compound is used in this research as a stand-alone village case.



Figure 4.4. Uphill view of incline in Neheun Compound

Source: Photograph by author (D. Panjwani)

Documented community data for this case was very sparse; almost all of the data described is primary information collected through interviews. As described by the village office, due to the dynamic nature of resettlement (i.e., people were still coming and going in 2011) in the compounds of Neheun, the office did not have detailed population data for each compound. In fact, population estimates varied by the thousands depending on who was asked. The approximate population of Neheun Compound that will be used is 300 families and 1,000 people, as indicated by the compound chief. The same person indicated that around 70% were young adults, with one or two small children; there were fewer than 20 elderly members in the village. The population is mixed Acehnese Muslim and Chinese Buddhist, though a significantly smaller number of the latter. Based on discussion with Block Chiefs, the vast majority of males in the community were fishermen, fish sellers, builders, or *becak*²⁸ drivers (pedicab). There are very few government officers that live there (~less than 5%).

²⁸ As translated in the glossary, a *becak* is a pedicab. Specifically, *becaks* are a three-wheeler vehicle and commonly used means of transport in Indonesia and other parts of the world. In most cases, in Aceh, these are motorized in the form of motorcycles with attaching sidecars to seat two passengers.

A combination of interview data from various respondents indicated that approximately 75% of households had a motorbike and around 3% of households owned a car. Most of those who have an occupation travel to the City Centre for work and must pay 10,000 Rupiah²⁹ by public transit each way or travel by scooter for 30 minutes. This is significant given their average earnings of 50,000 to 70,000 per day, based on an average of incomes estimated by block chiefs. Though there is the coastal area of Neheun nearby, the majority of fishermen in the village still have to go to the main port in the City Centre as they are restricted to membership in that particular fishing union. There are some workshops and brick factories nearby, although the number of brick factories is half of what existed before the tsunami.

A detailed and current (2011) map of Neheun Compound was not available; the compound chief indicated that one did not exist. When consulted, the Neheun village chief and secretary provided an outdated BRR Masterplan map and not all of the compounds shown on the map were built. When interviewing the youth chief for Neheun Compound at his home, he referred to an aerial photograph when indicating a particular block. He offered a photocopy of the photograph to be used for the research, which is similar to Figure 4.5. below. As indicated on the photograph, Neheun Compound is organized into seven blocks, A to G, with a total of 606 houses in the completed compound. Each block is spatially quite distinct and consists of an isolated sub-community. Block letters increase in conjunction with elevation gain; in other words, Block A is at the bottom of the compound while Block G is at the highest elevation.

²⁹ Exchange rate at time of study: 1\$US Dollars = ~9,925 Indonesian Rupiah (Rps)



Figure 4.5. Neheun Compound.

Grass area at base was used for temporary barracks for villagers displaced in surrounding villages.

Source: Extracted from presentation shared by BAPPEDA Provinsi (with permission)

4.2.1.2. Resettlement process

Based on interviews with community members, the process of resettlement to Neheun Compound was entirely non-participatory. The village was planned, designed and contracted entirely by NGO-A, with international consultants leading the construction process. NGO-A also carried out housing design, the quality of which most villagers expressed satisfaction with. Some of the key informants included some ex-combatants, who were positioned as security officers when the housing was being built as a means of reintegrating them with the community. For their service, the ex-combatants interviewed stated seven of them were rewarded with a house through approval by the chief of district.

As described by informants, the process of securing a house in Neheun Compound was facilitated through BRR, which drew on a database of tsunami-affected beneficiaries waiting for a permanent shelter. Beneficiaries included those unable to return to previous lands now submerged under water, and renters without home ownership. Through a lottery system, they were allocated houses in one of a number of resettlement sites spread across Banda Aceh and Aceh Besar. The beneficiaries did not have a choice in which resettlement site they would be assigned. Therefore,

community members came from a wide assortment of communities and backgrounds across Banda Aceh and Aceh Besar, and similarly had come from many different barracks. Each block is an assortment of social classes, with one informant explaining, “There is a lot of disparity within the block, but we have an acceptance of our position. When people moved here they were already rich or poor and we understand that” (Male, 50s). Once occupied for ten years, the beneficiary would get ownership of the property. As an informant explained, “The selling of houses here is not official, because we don’t have the certificate yet. But we just call it a transfer of the house. It is forbidden for us to sell for ten years” (Male, 40s). Many ‘transfers’ of houses had occurred to date. Community members explained that homes in the lower blocks went for less than those at higher blocks. For example, houses in Block A would sell for 50 million Rp, while those in Block G would sell for 100 million Rp.

Many of those living at Neheun Compound recalled the government taking down their temporary shelters dispersed around Banda Aceh or Aceh Besar, without having permanent homes ready for them. Some noted one to two month gaps between barracks being destroyed and their house being available. One of the block chiefs noted that the first eleven families moved to Neheun Compound from the same barrack in September 2007. Another block chief recalled that in the second batch, eight families came together from a different barrack in October 2007. His wife gave light that one of the beneficiaries was able to use his connections with BRR officers to facilitate the possession of a collective number of homes circumventing the lottery system. It appeared that several clusters of families had been granted houses through contacts within the barracks. Others had obtained a house through support from the village chief of their original village.

Even though the mayor of Aceh Besar attended the opening ceremony of the compound in 2007, when families first moved to Neheun Compound, there was no electricity for weeks after. The community had to be active to collectively request BRR to turn on the electricity to the compound. The water situation was described as being difficult at the start with many community members reporting no running water for quite some time.

There was little livelihood support available to community members in Neheun Compound. A livelihood program from a local NGO had conducted job training for females in the compound a few years ago. One woman claimed that, “They gave us the theory and motivation, but no money or tools” (Female, 30s).

4.2.1.3. Conditions in 2011

With the addition of the new compounds, the population of the village of Neheun is estimated to have increased from 4,000 to 12,000 persons. Key informants at the Neheun village office, who were also original habitants of Neheun and living outside of Neheun Compound, remarked on the new compounds, “they don’t bother us much, because they are so isolated” (Male, 50s).

The community of Neheun Compound therefore is an entirely new community, though housing around 30 people who are originally from Neheun. One of them commented, “I grew up in Neheun for all of my life. When we returned it was like I had moved to Jakarta or Medan. There are different cultures and so many different ways of doing things here” (Male, 40s). Neheun Compound is not yet integrated with the broader community of Neheun. One villager in Neheun Compound commented, “At first there were a lot more problems, such as dealing with the old community of Neheun. Now it is getting better but they still see us as newcomers” (Male, 40s). On acceptance, a villager compared Neheun Compound to another new compound in Neheun, “They still have problems being accepted due to jealousy because they have such nice homes and also because they are so close to the original people of Neheun. We are far away so it is okay” (Male, 40s).

Livelihood struggles are pervasive across the compound. Most of the residents are from various villages in Banda Aceh, and continue to travel to the city 15 kms away for employment. A block chief said, “The ones who are happy here are the ones with a job. The ones without a job will die if they stay here” (Male, 50s). As another interviewee explained, “Many have lost their jobs because they are far from the city and many people are moving back to the city because of that. They have no choice” (Male, 60s). Estimates from community members indicate that around 40% of the compound is without stable employment and that many would eventually sell their house and move back to the city or in with family members in the city. One villager explained that, “An average salary is 50,000 Rp/day, then we spend 20,000 Rp/day for transport, then 15,000 Rp/day for lunch, and then we come home with 15,000 Rp/day. That’s not enough to survive” (Male, 30s).

Less than 20% of the females in the compound are working. One of these women explained;

You need to have a really formal job for it to be worth it, living here, like a government officer. When living in our previous villages we had a flexible schedule. We would work two days, make food, sell it for a day, and work when possible. Women here can’t do that anymore (Female, 40s).

She described some cases of jealousy between couples, when the wife would be working and gone all day while the husband remained at home.

Because of their distance from the main market, men had taken on the responsibility for picking up household groceries from the city on the way home from work. Women commented that they would only go to the city when they had to buy cosmetics. Women complained of loneliness and boredom, being confined to their homes because of the physical geography of the community. In one woman's words:

At least before we could have our husbands coming home for lunch. Not anymore. Before we contributed and worked, like as a seller, shopkeeper, or by doing cleaning jobs. It was possible to do this, but now it is not possible. (Female, 30s)

Another explained, "Our husbands take lunch boxes now. Even our children are taking lunch box to school and don't come up the hill, home for lunch" (Female, 30s). Another mentioned that, "If we have no vehicle then we just sit at home and pray or cook or sleep. Only our husbands can go to work. We sit at home all day" (Female, 40s). And another,

We have to find a way to pass the time. Like cooking, sleeping, arranging the children, sleeping... we are very bored now. Not many women are chit chatting here... we are all from different backgrounds. I only meet my husband at night time. We are separated for a long time now. (Female, 30s)

A few women are occasionally hired by neighbours to assist in tasks such as housecleaning.

The general atmosphere of Neheun Compound is quiet and empty, especially during weekdays. There are few people visible on the streets. With little public space and the steep nature of the compound, the small gatherings that are visible are on the steps of houses, and are mostly comprised of neighbouring women and small children. Bicycles are banned in the compound due to many accidents; in fact, two children were killed in 2007 due to cycling mishaps on the steep hill. There is some increased activity over evening and weekends. With no market in Neheun Compound or surrounding compounds, many expressed the wish for a local market. They indicated that there was not enough competition and population to have one.

In discussions, many interviewees drew contrasts to their previous villages of origin, especially when describing their social networks. In one key informants' words:

Life is difficult here. In our old traditional villages we would have many generations living there... lots of attachment and all of our family would be there during the day. Here it is independent. We are only meeting for meetings like to discuss the *Maulid*³⁰. In our traditional villages we would be meeting all day... giving food to each other and taking care of one another. It will take a long time to build the community here... because of so many newcomers and because many people are coming and going all the time. (Female, 50s)

Several homes in Block G have been sold and are being used as weekend villas for their scenic views. In the words of an informant from the Block, “the rich come and go on the weekends” (Female, 40s). There are rumors of some villas being used to accommodate second wives, with the first living in the city, however, “... this is really secret. We don’t talk about it” (Female, 50s). The breakdown of occupied and vacant houses appears in Table 4.3 below; these numbers are based on consultations with block chiefs.

Block	Occupied	Unoccupied	Total	Occupancy Rate
A	79	19	98	81%
B	50	36	86	58%
C	20	12	32	63%
D	40	60	100	40%
E	43	15	58	74%
F	60	58	118	51%
G	60	54	114	53%
Total	352	254	606	58%

Table 4.3. Neheun Compound housing breakdown

Source: Fieldwork

When NGO-A built Neheun Compound, they constructed not only houses, but also key purpose-built infrastructure. These include a mosque (at the base of the hill), a health clinic (in the middle of the hill), a roofed open area for a marketplace (in the middle of the hill), and three school buildings in a horseshoe formation (at the top of the hill). As the main meeting place in the compound, the mosque is most frequented by male members; social protocol meant that females

³⁰ As translated in the glossary, a *Maulid* is a celebration of the birth of the Prophet. The occasion falls in the month of Rabi’al-awwal in the Islamic lunar calendar. As one of the most important official holidays in Indonesia, each village hosts their own lively *Maulid* celebration during the month. The celebration is marked by a number of traditions, including serving food and inviting surrounding villages to join in festivities. The author was able to attend some of these celebrations during her time in Aceh.

were not mandated and/or expected to join in daily prayers in the mosque. While used for daily prayers and community gatherings, Friday prayers are not held at the village mosque, as very few villagers are able to return from the city in time. The marketplace is abandoned, aside from cattle trying to escape the summer heat. Though the health clinic and school infrastructure were in place since the opening of the village, the relevant administrative and operational elements within them were not organized until much later. The health clinic opened in November 2008 and the school opened in late 2009.

There is a young midwife who works and lives in the small health clinic and provides basic services. She provided insights on the general health conditions in Neheun Compound; the most commonly treatments were for cough, fever, diarrhea, hypertension, first aid, pregnancy and deliveries. There are two known individuals with STDs: one with syphilis and the other with HIV. The most general condition in the village is skin conditions caused by the poor quality of compound water. On average the midwife sees five to seven patients a day; the number has gone down from previously being around 15 a day. There have been no maternal deaths, and two known infant deaths that were because a traditional midwife outside the health institution was used. Through discussion with community members it became evident that many villagers preferred to go to a senior midwife in the main village of Neheun at the bottom of the hill. This was due to greater confidence and comfort due to her seniority. Many others still travel to the City Centre 15 kms away to the full service health centre.

Only one of the school buildings is being used for two classes, being conducted simultaneously (grades 1 and 2). Aside from being occupied by cattle and covered with their patties, the remaining two buildings are vacant and in disrepair. Electrical fixtures and wiring has been removed and many windows shattered. The back of one of the school buildings shows recent and significant signs of rock fall from higher up the mountain evidenced through boulders resting at the foot of the building. One of the teachers explained that:

It is hard to have a class at the top building. If it is raining then there will be mudslides and rock fall and children will slip. Maybe once there is a third class and we are forced to use another building, we will have to figure out what to do. (Female, 50s)

With little government attention, the school borrows furniture from other schools and until recently was using mattresses as chairs. Teachers at the school spoke of parent's preference to send their children to the lower school at the bottom of the hill, because it was more established and

“complete”. Some interviewees argued that taking their children down the hill to school in the morning is easier than taking them up the hill to the school above. Teachers at the school spoke of the problem in teaching when children would move back and forth from the city “6 months here, 6 months there”. For those consistently living in the village, there was a full attendance rate. In the current academic year, 2 students had left to go back to the city.

A handful of houses dispersed across the compound had been converted into other facilities and/or for service providers. These include for example, a preschool, a kindergarten (with 20 students), Principal’s office, mechanic shop, convenience store, and a coffee shop. Several women described the small shops in the compound as “expensive and not complete” (Female, 30s).

The compound has an independent system for accessing water through three different wells. Parts of the system rely on electric operated pumps, which pose a problem when the electricity is out. Many alluded to conflict over access, which varies by block and depends on where the house is in relation to the well and how many people the well serves. Daily access to water ranges from 30 minutes per day to 8 hours a day depending on block. However, a key informant explained that water is only a problem if one does not have a plastic water tank in their house. Another key informant interviewed served in the role of water officer for two blocks sharing a well and was elected by the community with the task of turning on and off the water supply to different blocks during the day. He was one of three water officers for the different wells. The water from the wells is collected in a holding tank and then directed to different blocks, while some other blocks use the electric system.

With no dumpster or garbage collection facilities in Neheun, many community members resorted to using limited excess land to burn waste. Waste that could not be burned, like baby diapers, were either individually taken to the city, or buried in the ground. A number of interviewees commented on fights with surrounding villages when they used their dumpsters for garbage disposal. Two houses share one septic tank, a source of conflict among neighbours when it comes time to allocate the cost to have it emptied.

Understanding village priorities was difficult. Given the number of compounds in Neheun, the Neheun village chief explained that the village budget was allocated to one village at a time.

We can’t satisfy all needs with the budget of the government, so we put priority on different areas at a time. We do one area at a time to make the money worth it. If we divided the money equally then no one would get enough money to do anything. (Male, 50s)

The upcoming priorities for Neheun Compound were to construct a community hall and to install another well. They had also submitted a request for garbage pickup to the government of Aceh Besar some time ago but had “not yet heard back of a decision” (Male, 40s).

Situated along significant elevation, the community members of Neheun Compound consider themselves safe from future tsunamis. Few expressed concern over rock fall. “It is the most likely risk to us, but it hasn’t happened yet” (Male, 30s).

4.2.2. The compound of Panteriek

4.2.2.1. Overview: a non-participatory case of resettlement not in previous location

The compound of Panteriek is categorized as another ‘moved, non-participatory’ case. The entire village of Panteriek itself is not a resettlement case, but rather one that contains a new resettlement site. For this reason, throughout this study the traditional village will be described as “Old Panteriek”, while the resettlement will be described as “Panteriek Compound”. The majority of interviewees from both “Old Panteriek” and “Panteriek Compound” alluded to both communities as being two separate communities, the old community (*lama*) and new community (*baro*). However, the village office and leadership structure is considered a joint one, with the village chief representing both Panteriek Compound and Old Panteriek. The village chief had been in his position since 2005. For this reason, the case study looks only at Panteriek Compound. However, references will be made to ‘Old Panteriek’ throughout the rest of this study in order to enable contextual and other important understandings.

Old Panteriek is a traditional village in the subdistrict of Krueng Raya, Banda Aceh, approximately 3 km south of the city centre (see Figure 3.3.). The community of Old Panteriek experienced little direct impact from the earthquake, as they were not hit by the tsunami wave or debris. However, they were significantly affected indirectly as a new compound (Panteriek Compound) was built inside Panteriek to administratively become one with the village. Previously a small community, Panteriek is now considered one of the most crowded ones in Banda Aceh.

As many community members of Old Panteriek described in detail, the land that Panteriek Compound now occupies was previously partially a swampland. Village office staff noted that prior to the tsunami there were talks with the city of Banda Aceh to convert the land into a park. However, after the tsunami it became more urgent to build the compound. Figure 4.6 below, derived from

satellite imagery, depicts the area pre- and post-resettlement. As evident in the images, a river flows behind the compound, with only a few meters separating the gates of the new compound and the houses of the old village.



Figure 4.6. Aerial image of Panteriek Compound before (2004) and after (2009)

Source: Provided by BAPPEDA Banda Aceh during fieldwork (Google Earth images). Scale unknown.

Documentation at the village office was quite thorough for both Panteriek Compound and Old Panteriek, dating back to September 2007. This was available through the Panteriek village office. Documentation included monthly reports on population, occupation, education, age and religion. According to the March 2011 report, the population of Panteriek Compound at the time of fieldwork was 3,209. The population of Old Panteriek was 1,055 people. All beneficiaries in the new compound are newcomers to the village from all over Banda Aceh (i.e., coastal villages of Lampulo and Uleelee) and surrounding areas. The population is mixed Acehnese Muslim and Chinese Buddhist, though a very small number of the latter. Occupations across Panteriek Compound include a fairly equal distribution of fishermen, *becak* drivers/ builders/constructors, traders/sellers, and government officers. Most of the households in Panteriek Compound have a motorbike, and a significant proportion own cars.

Panteriek Compound is organized in two blocks namely as: *Selenga* (type of flower) and *Jeumpa* (type of flower). Old Panteriek is also organized in two blocks: *Kali* (river) and *Bambu* (bamboo). Each block has its own block chief.

4.2.2.2. Resettlement process

Based on interviews with community members, the process of resettlement to Panteriek was entirely non-participatory. The compound was planned and designed entirely by NGO-B. The same organization also carried out housing design and contracting of builders. The village staff described the process of engagement as one where NGO-B approached the mayor of Banda Aceh, who approached the community of Old Panteriek. However, as the village secretary described:

We had no choice in the matter. The land was owned by the Mayor of Banda Aceh. Besides, the situation was miserable. And of course we all wanted to help our fellow citizens. It would not be right to object. (Male, 40s, Old Panteriek)

Some informants claimed that half of the land was owned by a private owner, who sold it to BRR. The village secretary described how the construction started in 2005 and was built very quickly.

Families from many different areas of Banda Aceh were allocated houses in Panteriek Compound. The process of allocating houses was complex and went through several modifications over the course of allocating. A key member of the planning agency provided a detailed account on this process. Some highlights include the following: The initial partnership in allocating homes was

between BAPPEDA and NGO-B. However, due to contrasting perspectives of how to allocate housing (i.e., BAPPEDA wishing to remain consistent in its housing allocation approach), the partnership was transferred over to one between Banda Aceh City (the Mayor) and NGO-B. Some key points from this partnership include a decision for half of the houses to be allocated by NGO-B and half to be decided by Banda Aceh City. This system worked for up to 400 homes. After the 400 homes were allocated, the partnership was transferred once again; this time to one between BRR and NGO-B. The final 300 homes were allocated through a BRR lottery system. The total number of houses in Panteriek Compound after completion was 716. All of these houses were occupied in 2011.

Due to the complexities described above, the resettlement process conducted by NGO-B was in various phases, with 200 of the houses being initially occupied at the end of 2005/beginning of 2006, and the rest over 2007, 2008 and 2009. Many of the beneficiaries from the first phase were from the Jantho barracks located approximately 40km south of Banda Aceh and based on a list developed independently by NGO-B, prior to a formalized verification process. Community members indicated that the first phase moved in during 2006. This is supported by accounts of the resettlement by community members. For example,

200 of the homes were allocated by [NGO-B] to whoever they wanted. They had their own area of work in the response and early recovery, so maybe they referred those people. The rest of the homes were allocated by BRR and the Mayor... several of them to government officers. (Male, 60s, Old Panteriek)

Some females described the last 'batch' of people moving to Panteriek Compound to have taken place in May and June of 2009 and situated in the East blocks 10 and 11 (*Timur* 10 and 11). This was cited to be 40 – 50 houses. Some described households in these blocks to be poorer than the other blocks.

There were mixed understandings of land ownership by residents in Panteriek Compound. The majority opinion was that each home in the compound had a land certificate that was valid for 20 years. The confusion was on what would happen after this 20 year timeframe. Some claimed that after 20 years, the land certificate would be renewed or ownership would become in their name. Others, particularly community members in the Old Compound believed that after the 20 years they would have to leave. A few others in the Old Compound had very different understandings of their presence. For example,

The new elections are coming up, and it has to be someone from here. The certificate for their house in [NGO-B] is only for 10 years. So we can't have a candidate from the new compound, because they can only use the buildings and house for 10 years. So based on that, the new compound members are temporary owners. What if the government takes their home after 10 years? I think this is possible. They won't live here for a longer time. Definitely not for their lifetime, like us... There are maybe two options. The government will take the land and everyone will be relocated, or the government will kick everyone out and give the homes to government officers. (Male, 60s, Old Panteriek)

4.2.2.3. Conditions in 2011

The village office for all of Panteriek is located just outside of Panteriek Compound, within the area that is technically considered Old Panteriek. The office is open for set hours almost every day of the week, and it was usually the case that someone was physically present in the office. In addition to diligence in documenting village data as described earlier, the office was quite keen on keeping records and following administrative procedures. This was observed through participating in specific research procedures requested by the office when gaining permission to conduct study in the village.

There are significant tensions prevalent between Old Panteriek and Panteriek Compound. The complexity of the situation is evident in the following interview excerpt:

The opinion of the new community depends on the individual. Some will say, yes, I am disturbed and some will say, no, I'm not bothered by them... More people are disturbed though. We were told that the new community was for prosperity and betterment when we agreed to the compound. But really, it is two separate communities. They have a separate *Maulid, korban*³¹, death visitations. We only come together for Friday prayers because the new *masjid* is there. We will have to elect a new chief in August and if it will be someone from the new community it will be a big problem. But there are larger numbers there so it is a possibility... the old community does not want to be led by someone from the new community. They don't know the culture here. We will boycott the elections if they submit a candidate. (Male, 60s, Old Panteriek)

Almost all of the interviewees described limited interaction between community members across the two communities. For example, in most cases only the chiefs of blocks are invited to weddings across the two distinct communities, and each community had a separate *Imam* for

³¹ Korban (also written Qurban) has been translated in the glossary as sacrifice. In particular, it is the sacrifice of a livestock animal during the occasion of Eid-ul-Adha in the lunar Islamic calendar. Eid al-Adha is celebrated by Muslims worldwide to honor the willingness of the Prophet Abraham to sacrifice his son Ishmael as an act of submission to God. At the last moment, God intervened with a Lamb to sacrifice instead.

planning funerals. Most of the discussions with the Old Panteriek community carried similar negative connotations and impacts of the new compound. For example: “There is a proverb, that they need to learn, that all newcomers need to adapt to the new community they join; not the other way around” (Female, 30s, Old Panteriek). Many of the negativities were associated with differences in culture. For example :

They have a separate culture. Such as how to face death. The way it is done in Panteriek is seven days of reading Quran - 5 days at home and 2 days in the mosque. Everyone from the village should come and do this if it was one united village. (Male, 50s, Old Panteriek)

While all of the informants from Old Panteriek spoke extensively of the implications of the new compound, those in the new compound were mostly detached from the tensions. The new compound seemed to keep to themselves and mind their own business to avoid conflict. For example, there is limited community involvement in the village office. As one of the leadership explained:

The new community lets the old community take leadership. They are not too worried that their voice is not there. They really only go to the village office to obtain their ID card. They don't want to make the situation complicated. (Male, 40s, Panteriek Compound)

A few members (mostly at the village office) did express positive impacts. For example:

Before we were a small village, but now we are big, so we are getting more attention from the city, more assistance from the government, and larger budgets from the government... Some of the budget has been used to build the shops which have become a financial asset to us... Because it is now very crowded here, many political parties are coming here to advocate and involve the community in politics... There has been an increase in human resources, mainly in terms of the number of government officers living in the new compound. Therefore there are more decision makers in the community. (Male, 60s, Old Panteriek).

The general atmosphere of Panteriek Compound is very lively, active, and at times crowded. At all times there were many children visible playing on the streets, in the football field and on the basketball court. Small gatherings of people are visible across the compound. This included many groups of females sitting around and chatting. Due to the dense layout of the compound, at times there was congestion of cars, motorbikes and people.

There are many small shops dispersed around the compound as part of, or extensions, of houses (for example, Figure 4.7). These include water refill shops, food stalls, convenient stores, florists, salons, and so on. Many women were observed running these small businesses. The quality

of housing was expressed by many community members as being moderate. Several however, complained of the materials used. Some of the community members in particular blocks (i.e., Block 11 and 12) complained of water seeping from the ground through the tiles and onto their floors. A large number of houses in Panteriek compound were currently undergoing renovations, with several houses constructing a second story to their NGO home (for example, Figure 4.8)



Figure 4.7. Shop set up outside NGO house in Panteriek Compound

Source: Photograph by author (D. Panjwani)



Figure 4.8. Renovations to NGO house in Panteriek Compound

Source: Photograph by author (D. Panjwani)

Before the tsunami there were no schools in the village of Panteriek. With the construction of the compound came the establishment of two new schools: a primary school (SD) and a junior high school (SMP), both located in the centre of Panteriek Compound. Both of the structures for these schools were completed by NGO-B and handed over to the government to institute the schools. The SD school was a new institution established in 2006 and a product of three schools merging, according to the SD principal. As a consequence, the administration and teachers remained largely the same, but the children were now different. All of the students were currently classified as Muslim, though, “at the beginning there were Christian and Chinese students because they were not yet settled... but once they settled they moved their children to Buddhist, Christian schools” (Female, 30s, Panteriek Compound). Since 2006 to 2011, the enrolment at the school had gone from 155 to 252 students.

As indicated by interviewees within the SMP school, the school was an existing institution that was moved to Panteriek compound because of the large number of students in the compound. Around 80% of the current student body were cited to be residents of Panteriek; the remaining is from surrounding villages. The interviewees cited early challenges. For example, “when the school

first opened, there were many issues. Attendance was not good, students were dealing with family issues like finding a new occupation, and many had no one at home to watch over their homework. Over time it is getting much better” (Male, 40s, Panteriek Compound). While the vast majority of students were Muslim, there were less than five students indicated as Christian or Buddhist. Since 2006, the enrolment at the school had gone from 63 to 261 students.

While one of the SD interviewees spoke of a UNDP emergency evacuation drill at the school in 2009, they claimed that “there was no other element to the program, just that one drill. It is supposed to be done again by the teachers, but we are too busy” (Male, 50s, Panteriek Compound). The SMP interviewee claimed to have, “no DRR drills or education because this is usually funded by an NGO are there is no NGO doing a program here. The government doesn’t do this on its own” (Male, 60s, Panteriek Compound).

There is a government funded health clinic in Panteriek Compound with two practicing midwives. The health clinic is relatively new and an initiative pushed for by the village chief. The facility currently occupies a building that was initially built as a village hall. The midwives reported on average 10 to 12 patients a day, though they only work three hours/day. The most common visits were related to breathing difficulties and coughing. One suspected a possible relationship between the gypsum used in the houses and the high occurrence of asthma and allergies, though she cited no research or studies linking the two. At the time of fieldwork, there was only one room in the clinic being occupied, with the facility primarily being used as a medication centre for basic symptoms. There were plans to expand the facility over the next year to include a 24-hour midwife and a broader range of services.

A visit to the larger health facility just outside of Panteriek Compound, but catering to the community, provided few more details. There were plans to move this larger facility to the existing health clinic in the compound in the following few months to year. One of the midwives at this facility reported three cases of malnutrition in one of the blocks of Panteriek Compound (in the same family), which had led to health problems in the children. She also reported many cases of coughing attributed to the material of houses, citing that “they have used gypsum material and the air doesn’t flow well because of it” (Female, 30s, Panteriek Compound). She reported eight to nine births per month, two infant mortalities and no maternal mortalities. There were two known cases of STDs.

At one end of the compound there is a basketball court, gym and small football field. There were almost always children using the court and/or the field. For the most part, these facilities are

used exclusively by Panteriek Compound although other groups (for example, a nearby university) rent out the gym every so often.

Panteriek Compound has a sophisticated garbage collection system, with a garbage truck coming to pick up garbage from houses three times a week. There is also a recycling facility that has been built on land leftover at the back of the compound. Each house has their own septic tank. There was consistent and reliable electricity and water from the water company in Panteriek Compound. Some of the lower income households had tried to make a well in their lot, but realized it would give them 'yellow' swamp water.

4.2.3. The village of Gampong Baro

4.2.3.1. Overview: a participatory case of resettlement not in previous location

The village of Gampong Baro is a 'moved, participatory' case. Located in the Masjid Raya subdistrict of Aceh Besar, the village is situated right off the main road on a slightly elevated hillside approximately three kilometres from the coastline (see Figure 3.4). The land that the village now administratively owns and occupies was previously forested area partially belonging to the neighboring village of Durung and partially privately owned by an *Imam* in the nearby village of Lamnga. Gampong Baro is the smallest case study explored. The new site is exactly two hectares in area and is in close proximity to the surrounding village of Durung. There is a large wired fence surrounding Gampong Baro that specifies its strict borders.

Before the tsunami, the original village of Gampong Baro was located directly on the coastline, around 5km to the West from the current location. The original village occupied around 420 hectares of land. Due to tsunami impacts, the previous location is now largely submerged in water, with few landmasses remaining and pockets of swampland. All homes were completely destroyed by the tsunami wave. Though uninhabited at the time of research, administratively, the previous land also belongs to Gampong Baro.

Exact pre-tsunami village data was unavailable. As the village secretary explained, the habit of recording village data had only come in place in the last few years, due to the influence of international aid. Information from community interviews indicated that over half of the population of Gampong Baro was wiped away by the tsunami. Estimates allude to 120 survivors and approximately 100 to 150 lives lost. A commemoration plate listing the victims of the tsunami has

been placed outside the village office, listing a total of 121 names. The list includes 41 males and 80 females. Some insisted that the list on the monument was accurate, while others felt it was incomplete. There is a significant inequality evident in the type of victims, with the vast majority being women and young children. Several informants claimed that of the survivors, only 14 were women and 10 were children aged 5 to 12. Prior to the tsunami, women claimed there were more than 100 women in the village and large numbers of children. According to village data at the time of research, the village had a current total population of 57 families consisting of a total of 175 people, including 106 male and 69 females. Of the current village population, 74 are children. The population increase is attributed to new marriages and births. A traditional village, many village members are related and the entire community is Muslim.

Prior to the tsunami, Gampong Baro was predominantly a fishing village. As the village chief explained, "Before everyone's profession would automatically be a fisherman, because they were near the coast. But now they have to take up new occupations like sellers". According to the village secretary, of the 43 working members of the village the "official" occupation breakdown was: 15 fishermen, 13 merchants, 6 fish farmers, 5 government officers, 3 *becak* drivers and 1 other. Every day a group of 20 go by motorbike to the coast to catch fish. None of the women have official occupations, though several contribute to livelihoods through selling homemade goods like cakes and occasionally tailoring clothing.

Many villagers own a motorbike through soft loans provided by NGOs. None of the villagers own a car. The few land masses remaining of the old land are separated from the mainland by water. There is half a bridge that was commenced as a construction by BRR after the tsunami (see Figure 4.9 below). However, as villagers explained, the project was stopped after half the bridge was complete. "We ourselves wonder why BRR only built half the bridge" (Male, 30s). As a consequence, the only way to get to the old land is by a raft that has been constructed by the community through one of their livelihood grants. Groups of men use the raft to get to the old land in order to conduct livelihood activities (see Figure 4.10 below).



Figure 4.9. Half constructed bridge from mainland to old Gampong Baro location

Source: Photograph by author (D. Panjwani)



Figure 4.10. Raft used by villagers of Gampong Baro to access old location

Source: Photograph by author (D. Panjwani)

4.2.3.2. Resettlement process

Based on interviews with community members, the process of resettlement to the current location of Gampong Baro involved several key actors. The village chief at the time did not survive the tsunami. However, a highly respected village elder (i.e., a descendent of noble blood) stepped in as an acting village chief. Because of his noble title, his position of respect extends across the region and as such, he is not able to officially act as village chief; however, it was not until 2006 that the community voted for a permanent chief. The current village secretary, who was in the same position at the time of the disaster, also played a key leadership role in the resettlement process. Other key actors in the resettlement process included NGO-C, NGO-D and NGO-E.

The resettlement process involved a series of events. Soon after the tsunami, surviving community members of Gampong Baro were sheltered in a school building functioning as a temporary barrack. The barrack was located on government land across the main road from the land that is now the new village. While staying at the barracks, the community of Gampong Baro was approached by NGO-C offering to provide assistance to build a house. As explained by a key informant:

They said, we want to help you with making a house. We showed them our land and they said this is wetland and we cannot build here. After some talk they said if you can get the land we will build houses for you. (Male, 60s)

The community actively sought land through NGO support:

[NGO-E] and [NGO-F] had a health clinic down the road. [NGO-E] was helping the clinic. When they finished the project they came to us to say goodbye. We sat together in the barracks with them and when we were talking, we explained our situation, and they asked us what we needed. We told them that there is [NGO-C] that wants to build us houses but we do not have the land to build them on. [NGO-E] told us that they could not buy us the land, but they asked our community to make a proposal to them for economic assistance for things like livestock, and making and selling food. We knew the money would be used to buy this land, even though in the proposal we wrote livelihood ... we did not have to submit a report to [NGO-E] showing how the money was used. (Male, 60s)

Villagers explained that the proposal was approved and each of the 57 families received 8 million 700 hundred thousand Rps for a total of 500 million Rps. Prior to purchasing the land, which was partially owned by the neighboring village of Durung, the village wanted to ensure that they would maintain their own name and administrative authority. At first, the village of Durung refused and claimed that the land would remain the authority of Durung, even if the new village settled there.

However, as explained by the acting chief, through submitting a proposal to maintain its authority, and after much persuasion, Gampong gained the support of leaders including the Regent and Sub-District Head. With their support and alongside key leaders from Gampong Baro, Durung was approached again. This time their case was successful. Through an MOU signed with Durung, the 2 hectares of land were transferred to the authority of Gampong Baro.

With the 500 million Rps attained from the proposal, the community was able to purchase 2 hectares of land. The transaction was done on behalf of the community by the acting village chief. A Memorandum of Understanding was signed between the community and NGO-C prior to the houses being constructed.

[NGO-D] came and normalized the land because before it was all forestland. We requested this from them because they had a program nearby – their greenzone program. Our food assistance was from them, so we went back to them to request help for the normalization. (Male, 40s)

Concurrently, the community had proposed plans to make the government land on which the temporary barracks were situated into permanent housing and land for Gampong Baro. The government owned area covered 400 hectares of land. A village elder explained, “We made a proposal to the governor to keep that land, but the process was taking so long. So we kept that ongoing but at the same time we took the initiative to get a donor to buy us land” (Male, 60s). The community did not hear back on the proposal and over time dismissed the option.

The resettlement process that was followed and described was partially participatory. The current village chief described it to be an “interactive participatory process”, with a back and forth communication between the NGO-C and the community. Other elements of participation included that some community members were supervisors during the construction and were responsible for working with the contractors commissioned by NGO-C. According to some informants, NGO-C had some builders hired themselves, but also paid local village members to help build houses. NGO-D was involved with normalizing the land (which was described as forest). Village members were also actively involved with normalizing the land prior to building houses.

The distribution of houses was not entirely based on land ownership, but rather largely based on family circumstance. In other words, each married couple acquired 1 house. As a block chief explained, “If the parents were killed, but 3 children living, and all 3 children got married, then that family would get 3 homes” (Male, 40s). Regardless of how much land a family owned on the

previous village land, they were given the same amount of land per couple in the new village. The community collectively decided that housing would be allocated through a lottery system. “We had a lucky draw to assign the houses so that we could minimize jealousy. Of course we would all want the house that is closest to the main road” (Female, 30s).

NGO-C was also actively involved with livelihood assistance with the community during the reconstruction process. For example, they “helped teach us how to dry baby fish and gave us a net for catching the fish. They also gave the women sewing machines – some are still using them” (Male, 50s).

In addition, the community of Gampong Baro was engaged early on with a number of livelihood support activities on their old land. These included a number of activities, referred to as the Green Coast Project. The project was implemented by a group of NGOs with a mutual aim of rehabilitating the coastal environment while nurturing economic empowerment within the community. At the same time the NGOs sought to develop facilities for environmental education.

A key player with the Green Coast project spoke of the willingness to cooperate among leadership and community members: “At first there were many NGOs coming to us to do work. They knew that Gampong Baro was a participatory community that was willing to cooperate”. (Male, 50s).

Based on project documents and key informants, activities commenced in August of 2007 with the formation of three groups consisting of 30 villagers and rehabilitation work consisting of the planting of mangrove seedlings and beach vegetation seedlings. Some projects, such as pine and mangrove planting were completed early on and now are simply maintained and watched over by the community. Decisions to proceed with NGO funded projects such as these were done as a community. The community also expressed high confidence in the chief as having the best interest of the community in mind during these decisions.

Before we choose to agree to this program we had another offer from the Ministry of Agriculture, but we refused it because the ministry said that they would use their own manpower. The Chief did not agree with this, that’s why we refused it. (Male, 60s)

The overall recovery process also included a number of small scale activities led by different NGOs. For example, these include a well, water supply, capacity building, and the provision of items such as computers, bicycles, and non-food items. The agriculture department had also provided garden rehabilitation.

4.2.3.3. Conditions in 2011

Many of the interviewees made reference to pre-tsunami life as being more favourable than their current situation.

Before the tsunami it was a better time for us. We had livestock, land, and gardens and we were near the sea. There was no need for worry and great effort. For example, we had livestock and shrimp ponds. But now we don't have these small things in our life. We are still waiting for government assistance to make shrimp ponds. (Male, 50s)

Yes, we have a better concrete house now, but our financial situation here is hard. Our source of life is there [previous land]. We would prefer to be back there. Everyone in the village would prefer to live there instead of living here, but unfortunately there are no NGOs here anymore to assist us in this. (Male, 40s)

A fairly compact community, it is mainly the women who are visible in the small common areas that have been created from wood panels. The women spoke of the greatest impacts of the movement to include less time with their husbands and limited involvement in any livelihood activities. Other impacts extended to limited social support and personal choices. For example, "Before we had a lot of relatives to take care of our children. Now we have to be careful and have to plan if we want children. We have to use contraception methods now" (Female, 30s).

All of the homes in Gampong Baro are occupied; many community members complained of the houses being far too small. Each home is constructed by basic BRR guidelines, measuring 36 square meters and including 2 bedrooms. Within the fenced in land boundaries available to the village, there is no room for the construction of more houses (Figure 4.11 and 4.12).

The amount of houses is not equal to the amount of demand now. My daughter has married since moving here and is living with her husband and her children in our small house. We don't have the land, the occupation, or the money to get a new home or more area. (Male, 60s)



Figure 4.11. View from top of new resettlement of Gampong Baro
Source: Photograph by author (D. Panjwani)



Figure 4.12. New resettlement of Gampong Baro
Source: Photograph by author (D. Panjwani)

Since 2007 the villagers have developed other economic activities. A number of rehabilitation activities on previous Gampong Baro land continue, with new projects being explored through local partners. These include agriculture, selling fish, and animal husbandry of cows, goats and chickens. For example, the Green Coast recently added a fishpond initiative and dragon fruit plantation; at the time of the research 2 to 3 months had passed since implementation. Around 15 villagers preserve the land on the old village site, while another 10 are working on other projects on the old land. These villagers were selected through community meetings. Female community members are aware of potential livelihood assistance programs through loans, though the majority seemed hesitant to submit proposals. As one explained, “We are so afraid that we will not be able to return the money because we are not sure of the future plan” (Female, 20s). Four small shops have been set up in the village and are being managed by women.

There is a deep well at the bottom of the village from which the entire village gets water. One of the youth members of the community manages the well, with a matrix on usage by house. A water machine controls the distribution of water; on occasions when the machine breaks, villagers travel by motorbike to get water from the city. On their previous land, each house had their own well that villagers had dug up themselves. Several of the female villagers complained of the stones beneath the ground preventing them from doing the same on the current land.

There is no school in the village. Children attend schools in the nearby village of Neheun with fair ease, travelling by public transit or walking. There is a small health clinic. With no dumpster or garbage collection facilities in Gampong Baro, all of the villagers burn their garbage themselves on their property. Each house has its own septic tank.

4.2.4. The village of Bitai

4.2.4.1. Overview: a non-participatory case of resettlement in previous location

Bitai is a 'not moved, not participatory' case. Located in Banda Aceh within the Jaya Baro subdistrict, Bitai is situated approximately 3 km from the ocean, just missing the initial 2 km 'buffer/evacuation zone' (see Figure 3.3). Bitai was historically on the territory of Aceh Besar and only later did it become an extension of Banda Aceh. Previously known as a centre of religious studies, it was home to many Islamic teachers and was the place where the Sultan of Aceh (Iskander Muda) learned about Islam. Consistently cited as a deeply religious village, Bitai continues to have a strong reputation of religious diligence. For example, the village continues to house two Islamic

boarding schools and all of the residents of Bitai are officially listed as being Muslim. However, several informants noted a decrease in their religious attendance and noted the presence of very few Islamic teachers remaining in the current day.

The village of Bitai is one of the sites that holds great significance in the history of Aceh through its relationship with Turkey, dating back to the Ottoman era. For example, Bitai is named after Teungku Di Bitay from Syria and houses a Turkish graveyard. It is for this reason that housing in Bitai was completed by NGO-G (associated with the Turkish government). However, this relationship had been maintained prior to the tsunami, as one of the key informants described:

Even before the tsunami we had a good relationship with Turkey. Every year we would have one or two buses of Turkish coming here to see the cemetery of the son of the Prince. You can go see the stone in the *masjid* with his story. It is because of this that after the tsunami, [NGO-G] are coming directly to our village to help (Male, 30s)

One key informant cited figures of around approximately 300 families and up to 2,000 people residing in Bitai prior to the tsunami event. Only 300 people were said to have survived the tsunami. Current day community data was just starting to be collected, organized and documented systematically. While some of this data was available from village officer leaders, the majority was obtained from key informants. According to printouts provided by the village secretary, the current population of Bitai was recorded at 244 families and 820 people, with the majority being young adults (25-40 years old) and young children. However, the village chief indicated that population numbers may not be entirely accurate due to the constant movement of people in and out of the village. Reasons for this movement were attributed to the high number of renters in the community. There were only two original residents over the age of 60, as the author was informed when meeting both of these women at the mosque over the course of the fieldwork. This number was supported by other villagers, such as the village midwife.

Prior to the tsunami, a large percentage of the village population was described as fishermen, farmers and traders. Current occupational data from the village secretary and village leader varied; some of these breakdowns were cited as not being representative of the population due to the high number of renters (i.e., many of the students and government officers). For example, informants also spoke of a large percentage of individuals claiming residence in Bitai, but in reality residing elsewhere and renting out their property in Bitai (i.e., many of the government officers, police, and business owners). Village office data indicated widespread occupation including: midwives, government officers, teachers, private businesses, students, police, laborers, retirees, fishermen,

farmers, carpenters, mechanics, maids, and jobless. The highest numbers consistently fell within private businesses, jobless and students. The village chief cited 25% of the population as government officers, 5% military officers and 70% as traders, workers and/or jobless. A large portion of those cited as jobless were original villagers of Bitai. One key informant cited that less than 20% of original youth are educated at the university level.

4.2.4.2. Resettlement process

The tsunami claimed the life of the village chief of Bitai; consequently, the secretary took over the role of chief. Though he played this role for two years, the current chief of Bitai had been elected by the community in 2007. Interviews with both the acting chief, current chief and other village leaders provided detailed insights into the resettlement process.

Immediately after the tsunami, many villagers of Bitai were staying at the same barracks in Mataie, in the south of Banda Aceh. From one month after the tsunami and onwards many of them would visit Bitai to see the remainder of their homes and talk among each other. Because all existing community data had been lost, the community collectively developed a list of community members, highlighting survivors as they became aware of their whereabouts. In addition, community members used old foundations of homes to verify the numbers of homes. The acting chief played a key role in compiling data on survivors, which was eventually passed on to the NGO-G government to use in developing housing plans.

The initial contact with NGO-G representatives was described to be in early 2005 (around April), when they visited Bitai and requested community data on survivors. The acting chief recounted that it was in August that delegates from NGO-G actually came to see what was left of the village and explained to the acting chief that they were keen to build houses and facilities in their village. In November they built a sample house to show the community what it would look like. By the time the sample house was built, the community data had already been submitted to NGO-G. As one leader explained:

Many were coming to ask for a house after the sample house was built, but by then the data was closed. That is why some don't have a [NGO-G] house. When the sample was built, everyone was coming to get houses - like three members per household - some relatives are also coming to ask for a house for their nephew and so on (Male, 40s).

A key informant explained how NGO-G had a quota of houses that they were able to offer; the quota was greater than the number of houses needed in Bitai. With only 238 old houses verified

in Bitai, the boundaries of Bitai were extended on a map in order to include the neighbouring village of Lampoh Daya. In his words, "We thought, why don't we help our neighbour" (Male, 40s). As a consequence, 120 NGO-G homes were built in the neighbouring village. Some village members argued that this was a mistake on the map, and that more houses should have been built in Bitai, which was a source of conflict among community members. However, others claimed that the surrounding village had the same history as Bitai and that historically the original village extended further, which is why NGO-G built there as well.

Over the course of the fieldwork, it was common for the original community members to refer to the resettlement process as one that brought up many sensitivities for one or both of the following reasons: not being accounted for by the chief when compiling the list, and/or unhappy that the remainder of homes were allocated to surrounding villages when there was still a need in Bitai. For example, as an elderly woman who did not get a house explained,

I went to live in my relative's house for one and a half years right after the tsunami. When I came back there were no more houses from [NGO-G] for me. I got a BRR one. But I accepted it without struggle. Whatever God gives us, we are content with. Maybe the chief didn't know I was still alive (Female, Bitai, 60s).

The resettlement process in Bitai has been classified as largely non-participatory, though there are elements of the process that were participatory, demonstrating overlaps in participation and non-participation. For example, there was exchange between contractors and the village leaders, namely the acting chief. There was also ongoing interaction between villagers and builders, including input in selecting housing design and a back and forth with builders. For example:

We can't really do anything about the model... there was a fixed model. But we watched the construction and gave suggestions to them. Sometimes we would buy coffee for the constructor and give them suggestions, like the brick needs water to be secure... little tips to make sure the house was built properly. Coffee would make them happy and listen to us! (Male, 20s).

Some of the builders and constructors living in Bitai commented how they were not able to get involved in the construction, but simply accepted the house. However, as described a community member, "to reduce jealousy", the contractors (from Yogyakarta) gave ten houses to the community to build themselves. There were also mechanisms in place between the 'Turkish supervisors' and home owners.

We as owners could tell the supervisor if the house was not built right. The[NGO-G] supervisor would come with his hammer and break the house if it was not built properly... but only two cases like this (Male, 30s).

Several community members said that even though the houses were completed in 2006, many villagers did not want to come back to Bitai until two years later, when they were able to confront their trauma. The remaining houses were constructed by BRR much later, with the majority being completed by 2008. This process was also done through the acting chief who requested 177 houses from BRR.

Along with housing construction was some degree of land consolidation, whereby the acting chief discussed with community members the option of making roads wider, or creating roads where they did not previously exist. This was mostly successful with small roads leading to houses, and not so successful for the larger common roads. For example, "There was discussion to make this road straight instead of curvy, and neighbours would have to give some land in order to do this. But not many agreed to this" (Male, 40s).

Several other NGOs were involved in Bitai during the recovery process. Activities completed by these NGOs included cash for work schemes, building a school and health clinic, the provision of school equipment and livestock, safety drills, and so on. There was mention of a livelihood program focused on youth training early in the recovery, though no mention of current livelihood programs in the village.

4.2.4.3. Conditions in 2011

The exact number of houses in Bitai is unconfirmed. Based on inquiry with block chiefs, the number is around 245. Based on the village chief, the number is closer to 280. Based on one village office staff, the number was 324, claiming that 250 were NGO-G home and 74 were BRR homes. Based on another village staff, 227 of the houses in Bitai were constructed by the NGO-G, while the remaining 53 houses were done by BRR. Regardless of the accurate figure, the current number of houses in Bitai exceeds the previous number of houses, which was reported to be around 200. As one community member explained, "Everyone got a house, some broke up their family card and asked for multiple houses. If it was up to the community to request houses, they would have requested one per family member!" (Male, 30s). All, but one of the village Block Chiefs claimed 100% occupancy. The one exception claimed that there were five empty houses in his block. The quality of houses constructed by NGO-G was consistently cited across Bitai and Banda Aceh as

among the best constructed in the aftermath of the tsunami (Figure 4.13). Some renovations were observed (Figure 4.14).



Figure 4.13. NGO house in Bitai

Source: Photograph by author (D. Panjwani)



Figure 4.14. Renovation to NGO house in Bitai

Source: Photograph by author (D. Panjwani)

Even though there is a building for the village office, it was not in use. As the chief explained, "because all of the staff in the *desa* [village] office have other occupations, I opened the office in my house. It is more convenient this way" (Male, 40s). This was new to the village of Bitai. As an elderly woman explained,

Even the [leader] is too busy with his government office job now. Before, the leaders wouldn't have another job and he had time for the community. Before, the chief knew everything about culture, but now the modern chief doesn't really know. For example, before if there was a marriage proposal, the chief would go along. If there was a birth, he would come to name the baby. There is none of that now. (Female, 60s).

The leadership staff is significantly younger than the norm across the other cases, with the average age appearing to be in the mid-30s. As one key informant cited: "It's funny when we are having a community meeting now. It is supposed to be the elderly leading it, but now it is young members leading because there are only one or two elderly left" (Female, 30s). There is limited transparency from the village office in respect to budgets and financial reporting, in the absence of a designated village office.

There is a health clinic in Bitai, with a fulltime midwife and basic medical equipment including a delivery bed. She described the average number of patients to be five to seven a day; most being children and babies. The most common illnesses were coughing and/or fever. There were no reported STD's. She cited that on average there were one to two babies being born every month in Bitai, with most mothers being between the ages of 20 to 30; there was one case of infant mortality in the last year. Overall, she described the community to be quite conscious and aware of their health.

In terms of education facilities, there is a preschool, a kindergarten, and a SD school in Bitai. Like health, education is regarded highly by the community. The preschool opened in 2009 and had 35 students enrolled and 4 teachers, at the time of data collection. As one of the teachers cited, the population of students had more than doubled since 2009. She noted a 5 student increase each year, starting with 15 students in 2009, attributing the increase to new marriages of survivors and births after the tsunami. The preschool was in a very crowded space occupying half of the health clinic building. Originally, the entire building was meant to be the health clinic.

At the time of fieldwork, the kindergarten was occupying a structure that was initially constructed with the intention of being a meeting hall for the village. According to kindergarten teachers, the structure had not yet been used for purposes beyond their classes. The reason for

occupying the structure was because the new health clinic had taken the land where the kindergarten used to be. As a teacher explained:

Maybe they forgot that there was a kindergarten here before. We have been moving around since 2005. In 2006, we rented a house, in 2007 and 08 we had a temporary shelter, in 2009 we were in the primary school building, in 2010 in the PKK building, and now, since 2011 we are here in the meeting hall (Female, 30s).

Kindergarten teachers indicated that only five children survived the tsunami. This is supported by attendance levels at the kindergarten, which had increased from five children in 2006 to 25 students in 2011.

The SD school (elementary) has nine teachers and 50 students ranging from class one to five. When it opened in 2005, there were 26 students. As the principal explained, because the school had opened late, many students had registered at other, more established schools. Most of the students at this particular school were cited as being "from poor families". As a teacher explained, "if you are richer, your child won't go here!" (Female, 30s). The teacher described how many of the children who had a 'new' mother were the ones with more problems at school, in comparison to the ones with a 'new' father - 'new' implying a marriage after the tsunami due to the loss of one partner. Another teacher described serious challenges with children who adopted new siblings due to re-marriage.

Interviewees at all three of the schools reported similar behaviours by parents in relation to hazards. For example,

Attendance is good here - only when there is bad weather, children will disappear. After the tsunami, parents are more aware of the weather. If there is hard rain or strong wind, they come and take their children home. Before, it was not like this. Maybe this is because the parents have the experience of the tsunami. But children born after the tsunami don't know what it is so they don't understand why they are going home. This is especially true when there is an earthquake - parents come quickly and take their kids. All people connect anything to do with nature to the tsunami. (Female, 40s).

While the SD school had evacuation drills in their curriculum, the kindergarten and preschool did not.

During focus group discussions with the original community members, there was significant discussion on the loss of cultural norms and unity. Most profound of cultural changes included shifts toward a culture of individualism, where people were described as only gathering for formal events. For example two informants alluded to an example of the *Maulid* celebration:

The culture here is changing completely. Before, for the *Maulid* we are all cooking in a huge pot together and then displaying the food in wood platters to take to the mosque. Now, everyone is taking rice box and just dropping them off! (Female, 30s).

There were many cultural implications cited by villagers on the loss of elderly in the community. For example:

Our parents died, and now there are only youth who are left. And the youth don't have the attention of parents anymore and this has impacts on our current situation. I mean, if we don't want to go to school, no one forces us to go. (Male, 20s).

On average village members claimed the population to be 50% original and 50% newcomers at the current time. Many of the newcomers were said to be from other parts of Aceh (i.e., Pidie, Jaya, Sigli, and so on). One village leader explained how Bitai had a new reputation of “being a good place to rent a good, new house”. Interviewees estimated that 50% of the population was well off, while 50% was not so well off. Beyond the cultural implications just mentioned, there is little tension between the original and newcomer population. Many original villagers reported the newcomers simply being busy going to work in the morning and coming home at night. As a few informants described them “They are silent”. Another commented that, “the most obvious thing is that they don't come to ceremonies and village events” (Male, 20s). Most of the newcomers were reported to be more educated than the original residents of Bitai.

The general motivation among original community members was low, with high prevalence of comments like, “If your whole family is gone, then there are no triggers to do better. You keep thinking, what for? (Male, 20s) and “Our spirit is not life before. When you have lost half your life, now you are only thinking about the next day. It is useless to think long-term”. (Male, 30s).

Activities that were once very strong in Bitai had not been re-established. For example, prior to the tsunami, there was a well-known volleyball team in the village that youth spoke of. Many original community members noted the decreased attendance at the *masjid* (mosque) for prayers, even among the original community members. For example, “there are less people in the *masjid* now, and there is less trust in the community” (Male, 40s).

Over half of the key informants in Bitai mentioned how the new housing was disguising poverty, compared to traditional housing (see Figure 4.15 and 4.16). For example:

Now neighbours don't even know if their own neighbour is doing well or not. And we aren't really collecting any data on whether households are rich or poor. This is especially the case

for the newcomers. We don't know if they are doing well or not. Sometimes we realize that a family we thought was rich actually doesn't eat food for full days at a time. (Female, 40s)



Figure 4.15. Remains of a traditional house in Bitai

Source: Photograph by author (D. Panjwani)



Figure 4.16. Traditional wooden house in Bitai

Built independently by community member.

Source: Photograph by author (D. Panjwani)

It was evident that the community atmosphere in Bitai is quite quiet. This was supported by community discussions. For example:

Before, we had many elderly in our community, and it was very crowded with people gathering around in shops and just hanging around. Now it looks like an organized community with hardly anyone visible. (Female, 30s)

For Eid-ul-Fitr³² it will be a very silent village, you will see. That never happened before. The newcomers are going to their family homes, and the youth to their relatives' houses out of town because they don't want to spend it alone. It is like a dead village during Eid (Male, 30s)

There are very few home industries or small businesses visible around the village. Many cited conditions prior to the tsunami as being more favorable, especially in relation to livelihood. For example:

We still had rice fields, fish ponds, and swamp land. We could get oysters and crabs. Youth would always do that. Now there is a big drainage there and oysters and crabs are not there anymore. The land is changing too. Before, we can plant chilli, but now a big part of our land is not fertile anymore. It seems that now we can only have a livelihood if we are doing a proposal... Youth don't know where to begin. It's not that we don't want to do it (Male, 30s)

Joblessness is the biggest problem. Lots of youth lost parents and need guidance on what to do. There's a problem on how to train them to be independent. They have no capabilities or skills or guidance to figure things out. Many of their diplomas and certificates were lost. They could arrange to get a copy but there is no spirit. We lost our parents, certificates, and spirit. Most of the people left in Bitai at the time were around 18 years of age. (Male, 30s)

Most of the youth have a low level of education and their spirit to develop or progress is the problem. Youth are not thinking long-term, but are only thinking of grabbing a job opportunity as it comes. They are thinking of ways to get money instantly, rather than working hard to find a stable job. (Male, 20s)

Most villagers of Bitai have consistent water from the water company. However, several complained about water flow not working regularly, in spite of company pipes. As a consequence, many villagers had their own small wells. Some commented that the well water was dirty and suitable only for showering, and not for drinking. Consequently, many bought water from the market

³² Eid-ul-Fitr follows the lunar Islamic calendar and is celebrated by Muslims worldwide to mark the end of Ramadan, the holy month of fasting.

for cooking and drinking. There is a village garbage dumpster, though it was consistently overflowing and not large enough to accommodate the waste.

4.2.5. The village of Lampulo

4.2.5.1. Overview: a participatory case of resettlement in previous location

Lampulo is a ‘not moved, participatory’ case. Located directly along the coast and in immediate proximity to the city centre, Lampulo is part of the Kuta Alam subdistrict of Banda Aceh (see Figure 3.3). Traditionally known as a fishing village, Lampulo has a long ancestral history and governance history that has been recorded back to the 1930s. Based on a traditional story recorded by a past chief, the name of the village comes from characteristics of the area. The basis of ‘Lam’ (in Indonesia meaning drowning) was given due to the high occurrence of the river flooding the lands. The basis of ‘Pulo’ (in Indonesia meaning island) was that the area was previously a lush forest.

According to the initial spatial plan developed by BAPPEDA, Lampulo remains situated in what was considered the “Evacuation zone”. However, the village was re-developed in spite of this. The landscape of Lampulo contains significant amounts of wetland. For example, many areas across Lampulo continue to show signs of floods and/or areas of swamp. Several community members claimed that their land was normalized using sand and soil in order to rebuild their home. While these houses are on solid land, areas surrounding some of these homes are wet, either due to flooding or swamp (Figures 4.17 and 4.18). Many households continue to harvest their own fish/shrimp ponds on their land.



Figure 4.17. Wetland in Lampulo
Source: Photograph by author (D. Panjwani)



Figure 4.18. Traditional fish/shrimp pond next to NGO house in Lampulo
Source: Photograph by author (D. Panjwani)

The Chief of Lampulo at the time of fieldwork had been in the position for three years; at the time of the tsunami he was a block chief in Lampulo. The village office in Lampulo seems quite sophisticated in the production and archiving of village documentation with detailed records from the tsunami onwards; all data from prior to the tsunami was destroyed. For example, some of the reports attained from the village secretary included monthly matrices on population, births, deaths, marriages, education levels and occupations. The village chief was computer savvy and had completed higher education; during the time of fieldwork, he was in the process of developing a website for the village of Lampulo. In addition, the village office had developed some paraphernalia for purposes of marketing Lampulo as a tourist destination (i.e., framed photographs).

It was estimated that there were 6,000 people living in Lampulo before the tsunami. Only 1,500 survived the event. Village leaders cited that over half of the victims were female (exact numbers were not available). With the addition of newcomers, the population has increased to around 4,000 people, with around 2,200 males and 1,800 females. Village documents indicate that 55% of the current population was newcomer, while 45% are original community members of Lampulo. The majority of the village is Muslim, with a small percentage of Christians (documents indicate 0.21%). One of the community leaders claimed that prior to the tsunami, 70% of Lampulo were fishermen. At the time of the fieldwork he claimed that number had dropped to around 40%, with more people having turned to small business initiatives. These estimates were supported by some of the block chiefs and community members. Occupational records of the adult population at the village office indicate: 35% fishermen, 25% student, 15% trader, 15% government officer, 6% worker, 3% handyman/carpenter and 1% military and police.

As described by some of the elderly in the community, Lampulo had experienced substantial growth over the decades leading up to the tsunami. Some descriptions that pointed to this growth included the formation of new blocks over the 1980s and 1990s. These blocks were described as previously being rice fields or areas of forest and shrubbery. One community member described how the original village of Lampulo was Block 1, with the other 3 blocks being expansions over time. Lampulo is currently organized in four blocks: Teuku Tuan Dipulo (Block 1), Malahayati (Block 2), Tgk. Disayang (Block 3), and Teuku Teungoh (Block 4); the same blocks were in place prior to the tsunami. When going through the village, the boundaries of each block are not very distinct. Each block has their own leader that is elected by the community.

4.2.5.2. Resettlement process

Immediately after the tsunami event, community members from Lampulo left the village and went to either reside in tents or with relatives in surrounding areas. The chief described that it was only three months onwards that most people, including himself returned to see the aid situation. Community members were situated in many different barracks at this time; as he claimed “people were not arranged, they would just go wherever could accommodate them” (Male, 50s). There were some barracks set up in Lampulo as well, where solely members of Lampulo stayed in order to remain close to their land. Some community members spoke of even remaining in a tent next to the remains of their house instead of the barracks. For example, a woman in one of the blocks described around 20 families opting to live in tents on their land instead of barracks far away. As one key informant described, “during the recovery process many people were concerned with defending their land... people were very active in coming from their barracks to here to do this” (Female, 40s).

In the end, several different NGOs built houses in Lampulo. However, the overwhelming majority of houses in Lampulo were completed by NGO-H. The NGO-H houses were also the ones consistently cited as the highest quality houses out of those listed, though they were the slowest. For example, some of the other houses built by another NGO had a cracking foundation that was visible. However, the same houses were built much sooner, with some community members recalling having returned to their home in Lampulo eight months after the tsunami.

According to one of the informants who was a key leader in the housing process, he went to NGO-H himself with community data obtained from the chief to attract them to Lampulo. The informant also helped in the post-disaster assessment of Lampulo for NGO-H. Collectively leaders from the village decided to proceed with NGO-H for the majority of the houses being built from this point onwards. One of these leaders cited reasons for choosing NGO-H to include the fact that “[NGO-H] would provide other programs, like psychosocial health and livelihood support... not just homes” (Male, 60s). Those who were not able to get a NGO-H house requested a BRR one much later in the process.

Participation in the housing process was evident at various stages. For example, as explained by one of the NGO-H supervisors from Lampulo, NGO-H hired supervisors from Lampulo and “if you had the skill of supervision, you could apply to [NGO-H]” (Female, 30s). The Lampulo supervisor would report to the NGO-H supervisor. The current chief of Lampulo was one of these supervisors for NGO-H. Most of the builders, on the other hand, were described as being from

Medan. Community members simply had a say in housing design. For example, beneficiaries were given the choice of five different styles of homes, from which they would choose one based on preference. The block chief would facilitate the process of providing beneficiaries with a form to complete.

Community members who were not in a supervisor role would still watch over their own homes being constructed and would report to the Lampulo supervisor with any concerns.

We were not involved in the construction of the home... we can only watch it being built, because it is not very easy to approach the builders... only some people were about to do that, for us it was just easier to wait and watch until the house was ready (Female, 30s).

I know how many iron pieces per house, so I can make sure that the same number is used by the builder for our house, and I check with the neighbour's house on what was done there, and also with the supervisor on what should be done (Female, 40s)

The housing process through NGO-H was described by villagers as being well intentioned and with a strong start, but having many challenges as time progressed. For example, in one interview with a Lampulo supervisor he described that "there was not really any good harmony between the one who works in the field and the one in the office... [NGO-H] changed their leadership three times and the participatory process changed with it... and sometimes the data went missing with it" (Male, 60s). Others described it as one that the NGO was not able to keep in their control. As cited by a community leader "the quality of houses is not good...the money they had was good, but the people working below were very corrupt" (Male, 50s). Villagers spoke of the numerous challenges in materials during the building process. For example:

There were many problems in materials and a shortage of materials, for example the door would not be of good material, but was put there so that at least there would be a door. But the new manager would kick it out because it was not good enough. They would give the order to demolish and build again, and this made the process slower... and builders would not get payment if the house was demolished. Also, the builder would have to come to the office to get the payment, but they wouldn't have a vehicle so it would be a big problem. Things like this make it difficult and make the builders not want to work anymore. Many houses were demolished and rebuilt, but many others were left for the community to finish themselves as they ran out of time. (Male, 60s)

Beneficiaries started moving into their new homes from 2007 (first phase) to 2009 (last phase). Many beneficiaries claimed that their houses remained incomplete or that it was taking too long and they ended up completing portions on their own (i.e., floor and ceiling). For example:

We got 6 million Rp for a 6 month rental from [NGO-H] so that we could rent a house while they renovated ours. We came and moved back after that and nothing had been done... and because the quality was at still not at par we were told to rent out again, but we said it's okay we don't want to move over and over again. I had to sign a letter that [NGO-H] was not responsible if there is a problem with the house, because I just wanted to live here by that point. We were tired of the different supervisors' stories, we just wanted our house.
(Female, 40s)

There were several other agencies involved in Lampulo. These included psychosocial health schemes by NGO-H, Cash for Work programs, and livelihood schemes. Livelihood schemes include small business loans through NGOs and BRR initiatives like women's training for fish processing, fish nuggets and fish chips. Since Lampulo is home to the fish market, a significant amount of aid was also directed at rehabilitating the fisheries industry (including a number of different NGOs). This included a fisherman halls, ice factory, boats, pier, and fishing equipment.

4.2.5.3. Conditions in 2011

As reported by many of the interviewees, and is visible from the number of housing lots, the number of houses in Lampulo had increased dramatically. As one informant stated:

The terms and conditions are like this... if you have your own family then you get your own house, even if you didn't have a house before. In many lots where there was one house, there is now two or three. (Male, 50s).

The village office cited 770 housing units before the tsunami (Figure 4.19). These included 525 permanent units, 175 semi-permanent units and 70 wood units. They cited the current number to be 1,109 housing units; all were cited by the village office as being permanent. However, several temporary wooden shelters being used as permanent homes were also observed (Figure 4.20).



Figure 4.19. Remains of traditional Lampulo house

Source: Photograph by author (D. Panjwani)



Figure 4.20. Temporary shelters being used permanently

Source: Photograph by author (D. Panjwani)

Due to the ideal location for fishermen, there was high demand for houses in Lampulo, and those that were not occupied were rented out. Village members claimed that prior to the tsunami houses were occupied by homeowners, while at the time of this study houses were more likely to be occupied by renters. Unoccupied housing was unheard of prior to the tsunami. Block chiefs claimed that all of the houses in Blocks 1, 2 and 3 were occupied. The block chief for Block 4 claimed around 10 houses that were empty and owners had not rented them out yet. When asked why, he stated that it was “because of trauma and that people don’t want to be reminded of the death of their mother or family” (Male, 50s).

There were some distinct characteristics and divisions across the community of Lampulo; these existed from prior to the tsunami. Blocks 1 and 3 consisting primarily of fishermen and of lower income, while Blocks 2 to 4 were more mixed occupations and of moderate to higher income. Block 3 was described by many as a slum area with a lot of illegal housing, prior to the tsunami, though they now had NGO housing. The homes situated further away from the water and closer to the main road (i.e., Blocks 2 and 4) had greater ownership by government officers. Several of the homes in Block 2 (approximately 100) had experienced less damage from the tsunami and remained standing (Figure 4.21).



Figure 4.21. An NGO house next to a traditional house that survived the tsunami.

As a much larger structure, traditional houses typically housed multiple families.

Source: Photograph by author (D. Panjwani)

The general atmosphere of Lampulo was quite lively, especially with the activity of the fishing market along the edge of the village. While most men are engaged with their fishing activities, women in Lampulo are quite active in village affairs. This includes helping each other or helping the village office in various events. There are several women carrying out home industries. A key leader of the village woman's group cited over twenty home industries, like small shops, bakeries and catering services, in Lampulo. She spoke of these individuals starting to build collective groups now. Several original residents, including groups of women cited stronger unity since the tsunami.

There is a kindergarten and an elementary school in Lampulo. Based on conversations with some teachers at the kindergarten, the school was rebuilt in 2005 through aid from two different NGOs. Prior to the tsunami, teachers cited 90 students enrolled, of which 7 survived the disaster. The current enrolment was at 40 students, most from new marriages after the tsunami. The teachers reported severe trauma initially among survivors, with some still prevalent. For example, "... he is 12 and can't stand to hear the wind or see clouds now" (Female, 40s).

The elementary school was rebuilt by an international corporation and is branded as such. As described by a key informant, "this school was here before the tsunami, but before the condition was not as good as it is now... now it is maybe 100 times better than before!" (Female, 50s). Based on interviewees and conversations with school teachers and the principal, prior to the tsunami the school had around 250 students. In their first month of reopening they had 7 students. Enrolment at the time of fieldwork was of 134 students. Eight of the 15 teachers were lost to the tsunami, though 7 more have been hired since. The elementary school had a Red Cross DRR program at the school which includes a safety drill. The last drill had been conducted in 2010 and the teacher spoke of a strong commitment to conduct it annually.

The health clinic was built by another international corporation and is branded as such; the clinic was established in 2006. The facility is quite comprehensive and is equipped with a delivery room, youth clinic, pharmacy, baby room, emergency room and dental clinic. The facility is a busy one with an average of 60 patients a day. As described by the doctor at the clinic, the most frequent cases treated were fever, stomach ailments, colds, respiratory problems, and hypertension, arthritis and skin infections. There were a few maternal and infant mortalities reported. The doctor spoke

extensively on the dirty environment in Lampulo as having negative implications on health. For example, the poor drainage and pools of water in Lampulo tended to attract many mosquitoes, contributing to one to two case of dengue per month as a consequence. There were two reported incidents of STDs, though the doctor alluded to many more that are not classified as such.

Significant changes to the landscape were reported by over half of the community members interviewed. These include the increase in swamp land and the loss of tobacco plants, palm trees, fish ponds, and mangroves. Most of the fish ponds and shrimp pools have disappeared, making traditional livelihood options difficult.

Several key informants involved in the resettlement process described there to be limited coordination between the different infrastructures (i.e., drainage, housing and roads) which has resulted in problems in the current day. In particular, clean water, drainage and sanitation were growing problems for Lampulo. Even areas that did not previously have flooding (i.e., Block 2) where now facing challenges with water seeping through tiles. Some other parts of Lampulo (i.e., Block 4) faced drainage problems due to construction issues:

When it is raining, the water is coming into the house because the road is higher than the floor of the homes. The house was built by [NGO-H] first and then the road by the government... the house in 2007 and the road in 2009 (Male, 60s).

Blocks 2, 3 and 4 have garbage dumpsters and truck pickup every 3 days, but Block 1 does not have either. Consequently, community members of Block 1 burn their garbage. Each house has their own septic tank and water tank pipe. Access to water is not equal across the community, with many parts not being reached by the water company. However, there is water company water in the majority of areas for those who are paying for it; however, in most cases even water company water was not consistent due to poor piping. The well water in Lampulo is not usable.

4.2.6. Summary of case descriptions

4.2.6.1. Resettlement

While basic groupings of “moved” and “not moved” will stand for the remainder of the dissertation, findings point to a need to understand resettlement on a range of issues. In adopting this understanding, resettlement has been summarized based on a spectrum that incorporates movement, distance, village structure and community makeup. A breakdown is shown in Table 4.4 below, with the highest ranked (Bitai) indicating the lowest degree of displacement, and the lowest ranked

(Neheun Compound) indicating the highest degree of displacement. These rankings and specific elements of the breakdown (i.e., distance, village structure, community makeup) will be referred to at various points in the chapters that follow.

Rank	Village	Location	Displacement	Village Structure	Composition
1	Bitai	remained on place of origin	N/A (remained urban)	village maintaining own village structure	many original community members, and several newcomers
2	Lampulo	remained on place of origin	N/A (remained urban)	village maintaining own village structure	several original community members, and many newcomers
3	Gampong Baro	moved to new location	rural to rural (5km from previous)	village maintaining own village structure	original community members
4	Panteriek Compound	moved to new location	urban to urban	new compound integrating into existing village structure	villagers from many different villages
5	Neheun Compound	moved to new location	urban to rural (15 km from city)	new compound integrating into existing village structure	villagers from many different villages

Table 4.4. Resettlement spectrum

4.2.6.2. Participation

While during case selection, 'participatory' and 'non-participatory' was used, soon into fieldwork, the challenge of defining participation in the context of post-tsunami Aceh emerged (Mahdi, 2009). It was hard to say what constituted as being participatory and it can be argued that none of the village cases were in fact truly participatory in resettlement activities, and that in many of the cases, participation and non-participation overlapped. Even though the aid community acknowledged the importance of participation and community consultative processes, they often failed in the implementation of these principles and processes (Dercon and Kusumawijaya, 2007). For example, many NGOs in Aceh adopted participatory approaches, yet had to change elements of the approach due to time constraints and various complications. Therefore, in the summary here, and for purposes of further analysis, the villages will be ranked relative to each other and based on degrees of participation gathered through interview insights. These are displayed in Table 4.5 below.

Relative rankings will be used as a basis of exploration against other relative rankings (i.e. resettlement and recovery).

The lack of participation of NGOs in this study limits the understanding of the actual participatory process outside of what is displayed in the ranking. Therefore, it is difficult to compare these rankings against a traditional ‘ladder of participation’ such as that proposed by Choguill (1996) and Arnstein (1969). Furthermore, two of the non-participatory cases (Panteriek Compound and Neheun Compound) included community members who were completely detached from the respective NGO until randomly being allocated a home in a particular village. Therefore, elements of manipulation and neglect (i.e. lowest end of participation on the ladder) do not necessarily apply to the participation rankings in the way that the ladder is developed. However, what was evident through interviews with community members was that there were elements of empowerment (i.e. highest end of participation on the ladder, and described as actual control in the situation) in the resettlement process described by villagers of Gampong Baro and Lampulo, which were completely absent in the other three villages.

Rank	Village	Level of Participation
1	Gampong Baro	active in finding a resettlement location involved in developing the proposal to acquire land active in normalizing and clearing the land involved in the rebuilding process
2	Lampulo	involved in choosing an NGO to assist in housing involved in selecting housing design, but not the rebuilding process some village members acted as supervisors
3	Bitai	involved with selecting housing design had limited back and forth with builders
4	Neheun Compound	local community members stationed as security guards during the construction process
5	Panteriek Compound	no level of communication with constructors until after the resettlement was complete

Table 4.5. Participation ranking of cases

In the cases of Neheun Compound and Panteriek Compound, grouped as non-participatory cases, the villages were constructed on new land that had previously been unoccupied. It was only

after the housing and basic infrastructure was completed that community members were allocated houses that they would occupy. Therefore community members had no voice in the construction or allocation process. Neheun Compound has been ranked higher than Panteriek for the reason that local community members were stationed as security guards during the construction process, as described in the village description earlier. During interviews with some of these individuals, who now have homes in the village, the villagers expressed some level of communication between the constructors and themselves. Panteriek, however, is perhaps a truly non-participatory case as villagers had nearly no level of communication with constructors or village authorities until after the resettlement was complete.

Bitai, Lampulo, and Gampong Baro have been grouped as participatory cases. As described in their descriptions earlier, Gampong Baro was the highest case of participation as the community was active in finding a resettlement location, developing the proposal and in the rebuilding process. Lampulo has been ranked as the second highest case as villagers were involved in engaging the NGO, the village planning and in selecting housing design, but not the rebuilding process. Bitai is ranked as a third case as villagers were simply involved with selecting housing design and had limited back and forth with builders. These rankings are further supported by the percentage of key informants and focus group participants who responded favorably when asked if they were active in the resettlement process.

4.2.6.3. Key descriptors

Key descriptors that have been discussed across the five cases are summarized in Table 4.6 below. These descriptors are important in enabling an understanding of the case studies, even though historical and political contextual underpinnings are not explored in substantial depth. Some of the data that has been presented as descriptors will be used in the next chapter to develop an assessment of community recovery. This assessment will ultimately lead to a recovery ranking of the five cases that have just been described. The analysis will then return to the resettlement and participation rankings summarized above to draw basic correlations with the recovery outcomes.

Case Study	Population before disaster	Original Population after disaster (Survivors)	Total Population after disaster (Original + Newcomers)	Traditional livelihoods	Significant completion of rebuilding	Leadership Style
Neheun Compound	N/A	N/A	1,000	Fishing Trade	2007	Perscriptive, minimal daily involvement with community
Bitai	2,000	300	820	Farming Fishing Trade	2006	Detached, minimal daily involvement with community
Gampong Baro	241	120	175	Farming Fishing Trade	2006	Inclusive, significant daily involvement with community
Lampulo	6,000	1,500	4,000	Fishing Government	2008	Perscriptive, significant daily involvement with community
Panteriek Compound	N/A	N/A	3,209	Fishing Government	2006	Inclusive, significant daily involvement with community

Table 4.6. Key descriptors of cases

CHAPTER FIVE: ASSESSING COMMUNITY RECOVERY

Chapter Five aims to answer the first of the four research sub-questions of this study in the context of the five case communities: ‘How can long-term holistic community disaster recovery be systematically assessed?’ and begins to explore the second sub-question: ‘What are some of the key factors that influence long-term holistic community disaster recovery at the village level?’ In addressing these questions, the chapter provides an assessment and ranking of community recovery, our dependent variable, across cases. Recovery indicators used in this assessment draw largely from details presented in Chapter Four, in addition to other indicator data that have not yet been presented, but were collected using methods described in Chapter Three. As described in the next sections, recovery data were organized through a series of indicators, and analyzed through the process of an index that incorporated these indicators. Once the data were incorporated into the index, comparisons across cases were conducted. Details on the development of the index and calculations are addressed within this chapter and further described in Appendices One and Two. An analysis of findings sets up the base for exploring subsequent research questions in Chapter Six.

5.1. Background

In this study, a capabilities-based approach is operationalized in the assessment of recovery in order to enable a multi-dimensional understanding of holistic recovery within the context of community development. As described in Chapter Two, there are limited applications of a capabilities approach to disaster assessment. One of these applications described in Chapter Two include Gardoni and Murphy’s (2008) Disaster Impact Index (DII). Some guidance from their implementation includes the following: capabilities criteria (ibid. p.326) should consider their relevance, importance, influenceability and practical implementability and accuracy; indicators criteria (ibid. p.327) should be representative of the corresponding capability and be intuitively plausible.

5.1.1. Implementation of a capabilities-based approach

An assessment of community recovery is conducted through developing and using a multidimensional recovery index (MDRI) that operationalizes the capability approach beyond a general welfare framework. As capabilities are not directly quantifiable, indicators are used to measure each of the selected capabilities. Community indicators that are developed are based on

capabilities identified during fieldwork as being relevant to recovery within the context of post-tsunami Aceh. The process relies largely on transforming qualitative, interview and observational primary data into multiple indicators grouped within selected capabilities. Indicators are converted into a uniform scale to create multiple capability sub-indices; capability sub-indices are then totalled to create the recovery index. As a composite measure, the recovery index will allow for an assessment of recovery based on more than one data item. In contrast to most large-scale quantitative empirical applications of the capability approach that draw on available datasets (for example, the UN HDI described in Chapter One), this particular index enables information specifically on a community's capabilities based on in-depth inquiry through primary data collection on indicators.

Indicators have been used to inform decision-making, improve stakeholder participation, build consensus, explore underlying processes and enhance advocacy (Parris and Kates, 2003)³³. One of the key resources in post-disaster work that has successfully used indicators is a handbook published by The Sphere Project (2004). The Sphere Project was initiated in 1997 to improve the quality of assistance provided after a disaster through a set of minimum standards. The handbook describes indicators as 'signals' that show whether or not certain standards have been attained, and demonstrates how indicators can be effectively used in assessing outcomes and following trends (The Sphere Project, 2004).

Various indices to date demonstrate how multiple indicators can be combined to construct indices that aim to reduce the complexity of an entire system to a single metric (Tate, 2011). Similarly, in this study, an index has been used due to its advantages as an efficient data-reduction device while allowing for several indicators to be summarized with a single numerical score, while also maintaining the details of all individual indicators (Babbie, 2004). While recovery indices are not readily available, those of vulnerability are becoming more so. Some examples include the Disaster Risk Index (UNDP, 2004), the Prevalent Vulnerability Index, and the Environmental Sustainability Index (Esty et al, 2005) and the Social Vulnerability Index (Cutter, 2008).

The design of a recovery measure ultimately depends on the desired features that are being measured and the data available to apply it (Rathfon, 2010). The MDRI tool will ultimately allow for

³³ Development agencies actively use indicator tools in their work. For example, indicators are used for purposes of developing outputs and outcomes when designing projects and for monitoring and evaluation the progress of projects. For example see risk reduction indicators developed in response to the Indian Ocean Tsunami in Provention, 2006.

the exploration of different relationships between specific dimensions of recovery and overall recovery, as well as resettlement characteristics in the next chapter. The index that has been constructed for the research follows guidance from existing methodological papers, and uses creative applications from social indicator research in planning, risk reduction and related disciplines. However, in spite of its frequent use in social science research, the methodological literature contains little discussion on index construction (Ibid). Most guidelines that are available rely on quantitative data, with few incorporating qualitative data. However, there is wide acknowledgment that indexes can be successfully constructed from many different types of data and for a variety of purposes, and several indices that have systematically incorporated qualitative observational data (e.g., Brown et al., 2010; Cutter et al., 2010).

The detailed process of forming the composite index includes the following parts: selecting relevant capabilities, matching capabilities to appropriate indicators, rating indicators and index scoring. Each step will be described in detail and once the index is developed, it will be applied to the five village cases in order to determine capability-specific scores and a total recovery score for each case. Based on the total recovery score, an overall holistic community recovery ranking across cases will be articulated. This will be followed by an analysis of what the ranking findings indicate based on correlations across capabilities.

5.2. Selecting relevant capabilities

The first step in implementing the capabilities approach is to identify which capabilities will be taken into consideration. Capabilities were selected primarily on the basis of relevance, with each capability having a direct link to community recovery. As Sen writes, “The focus has to be on the underlying concerns and values, in terms of which some definable capabilities may be important and other quite trivial and negligible” (Sen, 1993: 32).

Ideally, as Sen (2005) and others argue, a central factor in the application of the capability approach is the open validation of a capabilities list, for example through public scrutiny and debate. Most qualitative empirical techniques using the capabilities approach have utilized participatory methods for the selection of capabilities and/or functioning. For example, in her work on three development projects in Pakistan, Alkire (2002) selects functionings by conducting community discussions on project impacts and conducts participant ranking of functionings and capability enhancing effects. Due to time and scope limitations, this study did not directly use a method or

participatory process in which subjects were asked what their capabilities were and how relevant they were for them. However, all of the capabilities chosen to compare villages were indirectly probed and articulated throughout the course of the fieldwork; this information was used to develop the final list. As such, the method used for developing a list of relevant capabilities for assessing recovery followed the three following consecutive steps of continuous modification:

Prior to embarking on fieldwork, a broad list of capabilities was prepared based on work in *Central Human Capabilities* by Nussbaum (2000), in which she defends a list of capabilities that are the moral entitlement of every human being. This list was adapted based on preliminary observations from the exploratory trip.

While in the field, the list of capabilities was modified based on interactions and insights on the recovery process. Only those capabilities most relevant to the context of current day Aceh and the topic of disaster recovery were focused on (Sen, 1999).

The final list of capabilities and was completed during the data analysis. This list was a further modified version of the list used in step two, based on an analysis of contextual interview data and the accuracy of data.

The final list of capabilities that have been articulated for this study is as follows:

1. *Life* – being able to live a long and complete life
2. *Bodily health* – being able to have good health and adequate nourishment
3. *Mental wellbeing* – being able to be mentally healthy
4. *Education* – being able to be educated
5. *Shelter* – being able to be sheltered
6. *Mobility* – being able to be mobile and move freely
7. *Social interaction* – being able to engage in social interaction
8. *Attachments* – being able to have attachments to people and things
9. *Environment* – being able to live with concern for natural surroundings
10. *Livelihood* – being able to seek employment and attain a living
11. *Exposure* – being able to be protected from hazards and forces of nature
12. *Respect* – being able to live free of discrimination, crime and violence

Essentially, it is the twelve capabilities listed that form the items of the multidimensional composite recovery index. The logical validity of each capability to the overall variable of recovery

was assumed since the theoretical framework has already demonstrated the relationship between capabilities and dimensions of recovery within a framework of development (Chapter Two).

Two capabilities that are recognized as significant in the recovery of Aceh, yet were excluded for purposes of measuring community recovery in this dissertation include the following:

Political – being able to participate in political decisions

Religion – being able to observe religion freely

The *political* capability was excluded for several reasons because of the complexities associated with its measurement. In the context of Aceh, it is hard to distinguish between post-tsunami recovery and post-conflict recovery. Many have argued that one cannot be addressed without the other. There are also sensitivities related to topics surrounding the Free Aceh Movement (described in Section 1.3.3) and the research aimed to steer clear of related discussions as some interviewees were previously closely associated with the movement as combatants. As such, data collection did not directly inquire into topics of political recovery status in significant depth. The exclusion of the capability is warranted, as the unique post-conflict political environment is fairly consistent across all cases explored. Gathering local voting data was explored, but not pursued due to challenges in data availability and accessibility. However, elements of involvement in local village politics is incorporated within the dimensions of *social interaction*.

The *religion* capability has also been excluded. With the implementation of Shariah law, freedoms associated with religious practice are situated within a unique governance system. In fact, it can be argued that many subjects value the practice of religion as *the most important* capability, while others have no choice but to value it as such. Again, the exclusion of the capability is acceptable as the Shariah law and practice of Islam was consistent across all cases. The essence of the capability is captured to some degree in the *respect* capability, with variables of tolerance and crime.

5.3. Matching selected capabilities to indicators

5.3.1. Community scale

At its core, the capability approach is an evaluation framework for individual welfare, and thus, in his work, Sen formally defines capabilities at an individual scale. However, it can be argued that there is no restriction on the unit used for measuring capabilities as the general principles behind

the approach, including notions of freedom and choice, are undoubtedly relevant at a various scales. This idea has been exemplified in the Human Development Index, a capabilities based national measurement scheme, described in Chapter Two. In addition, although the unit of analysis for capabilities is intrinsically the individual, applications at the community scale are feasible given it is a level that is clearly derived from and linked to individuals (Comim et al., 2008). In the context of the developing world, including Aceh, where societies tend to be more collectivist than individualistic, an emphasis on capabilities manifested at the community scale is of particular importance and value. At the same time, many capabilities are interdependent at higher scales, in which opportunities are open to all, but not everyone is able to realize them at the same time (Robeyns, 2006). Exploring them at a community scale allows for incorporating some of these interdependencies and power relations within a given capability.

5.3.2. Indicator selection

To operationalize the capabilities as measurable items, multiple indicators are developed at a community scale that can be used to represent each capability being measured. As the intention is to assess community-scale recovery, community indicators were developed. Indicators were all descriptive of the different elements of living conditions, within the background of recovery. Since the capabilities are such that they do not have defined corresponding measures, a selection of indicators that could represent each capability were proposed and modified throughout the data collection process. The general criteria used to ensure that indicators were appropriate and accurate measures of specific capabilities were: 1) the indicator was representative of the corresponding capability; and 2) it was intuitively plausible (Gardoni & Murphy, 2008). In many cases, in order to move from individual capabilities to community indicators, key indicators for the capability were identified and then aggregated to all members of the community (i.e., the community scale).

Indicators were also chosen for their validity and reliability – if it was a good indicator of what was being measured, and if it produced results that provided accurate information of what is being inquired. A table outlining the proposed relevance of each indicator used and recovery outcome is included in Appendix Two). Other criteria used for selecting effective indicators included the availability and accessibility of information. For many initially proposed indicators, there was either no data available for the indicator and/or the data were inaccessible or unreliable. Therefore, only those indicators that were feasible during data collection were included in the final list. In many cases, proxy indicators were selected under the relevant capability. In addition,

attempts were made to include only those indicators that were fairly consistent across villages for pre-disaster conditions were included (so aspects such as income equality were omitted, for example, because some villages already had high inequalities before the disaster). However, this was a difficult task, given the lack of information on the pre-disaster condition of many villages in Aceh. Other criterion considered when possible included: the indicators potential for reproducibility (i.e., whether or not data could be independently verified and reproduced) and the robustness of the indicator in terms of how analytically sound it appeared in terms of its relationship to community recovery.

5.3.3. Indicator data sources

The collection of primary data as a procedure for measuring capabilities has become increasingly frequent as applications of the approach develop (Comim et al., 2008: 177). The method used in this study follows this trend as indicator data is primarily based on primary data collection. As described in the methodology chapter, data collection commenced using a tentative list of indicators derived from these capabilities and based on a review of literatures using indicators. Concurrently, some preliminary indicators were eliminated and/or expanded upon based on data availability, relevance and feedback from local researchers (for example, university attendance rates and number of civic associations were omitted, and number of permanent plants was added). Most of the data was collected through semi-structured interviews with key informants and/or direct observations during fieldwork. To ensure consistency and accuracy, all primary data that has been used in the assessment was collected during the official fieldwork period over five months in 2011. Limited indicator data is derived from secondary sources, including village office documents (maps and records) and BPS data. To ensure consistency in the time element of indicator data collection, the marker that has been used is data from at least 5 years from the disaster (i.e., 2010 onwards). Specific data that was used for each indicator is indicated in Table 5.21.

The large amounts of data collected were systematically processed from the different data sources to the index. Two examples are provided. (1) Semi-structured interviews with the midwives in each village pointed to major categories of illnesses, namely: the prevalence or absence of serious illnesses (i.e. infectious disease and STDs), the prevalence of unique symptoms (i.e. asthma and malnutrition) and/or simply common systems (i.e. cold and fever) in the community. The average number of patients a week was also recorded in order to assess illnesses relative to the population size. Data from focus group discussion with villagers was used to support data on reported illness.

For example, in Panteriek Compound, it was common for community members to describe a higher occurrence of asthma, but no serious illness. Two out of the five health centres had readily available documentation on number of visits per day, diagnosis and treatment. While this data was collected, it was not used as a source of data for the index. (2) Direct observational data that had been recorded over the course of time spent in a particular village described the daily life of the community and indicated the number of gatherings visible each day. For example, this included descriptions of the types of people that had gathered, locations of the gatherings and the purpose of the gathering (if evident by observation). These observations were processed as way of measuring the use of public space and as an indicator for social interaction. Focus group discussions in each of the villages included discussion on chatting with community members, getting together on a regular basis, having space to hang out, and common meeting up spots. These data were used to support the direct observations recorded.

Capability	Indicator	Key Informant	Focus Group Discussions	Direct Observations	Documents
Life – being able to live a long and complete life	living conditions (in this case, last two years)	x	o		
	marriage rates				x
	birth rates				x
	population change				x
Bodily health – being able to have good health and adequate nourishment	reported illness	x	o		
	available health services	x		x	
	number of food vendors	x		x	
	productive cropland	x		x	
Mental wellbeing – being able to be mentally healthy	available clean water	x		x	
	expressions of grief	x	o		
	expressions of fear	x	o		
	negative reminders of disaster (debris, destruction)			x	
Education – being able to be educated	emphasis on continued education (high school +)	x	o		o
	school attendance levels	o			x
	supplies/equipment available	o		x	
Shelter – being able to be sheltered	quality of homes		o	x	
	available land for new homes		o	x	
	population in semi-permanent/wood houses (as %)			x	
Mobility – being able to be mobile and move freely	quality of roads			x	
	public transit		o	o	
	population with motorbikes (as %)		o	x	
Social interaction – being able to engage in social interaction	number of community activities and/or events	x		o	
	use of public space		o	x	
	community satisfaction		o	x	
	involvement in local village politics	x			

x = central data source; o = subordinate data source

Capability	Indicator	Key Informant	Focus Group Discussions	Direct Observations	Documents
Attachments – being able to have attachments to people and things	home ownership				x
	number of renovations			x	
	number of dong dong plants			x	
	home occupancy rate	o			x
Environment – being able to live with concern for	vegetation			x	
	littering			x	
	garbage disposal			x	
Livelihood – being able to seek employment and attain a living	unemployment rate	o			x
	traditional survival options (fishponds, livestock)	o		x	
	home industries and small shops	o		x	
Exposure – being able to be protected from hazards and forces of nature	preparedness planning and awareness	x			o
	hazards (flooding based on disaster event)	o			x
	disaster risk (based on TDMRC)				x
Respect – being able to live free of discrimination, crime and violence	level of tolerance (ethnic and religious)		o	x	
	gender inequality		o	x	
	crime rate	x			o
	disparity between young adults and elders	x	o		

x = central data source; o = subordinate data source

Table 5.1. Indicator data sources

5.4. Rating indicators and index scoring

Appendix Three displays the complete MDRI. The table provides a detailed representation of the community recovery index calculations and final scoring. These are calculated through the following three steps of: 1) indicator scoring, 2) capability index scoring, and 3) recovery index scoring.

1) Indicator Score (X)

As displayed in Table 5.2, many indicators are based on qualitative observational and interview data across a small sample size. Consequently, indicator scoring had to accommodate a broad range of responses. To enable measurement, each indicator was rated on a three-point scale (see Appendix Three). In most cases, the scaling was developed through allocating three distinct parameters that covered the actual variation across cases; this was based on recovery data collected. The three point scaling was chosen as it was the best way to cover the full spectrum of available scores across the distribution of cases, and ensure sufficient scores in each range. This was done in order to overcome challenges in the lack of accurate records of detailed indicator data and variation in responses.

2) Capability Index Score (C)

A capability index score is calculated by giving each indicator an equal weight within a given capability.³⁴ This would allow for capabilities to be compared against each other in further analysis. In equation form:

$$C_j = \left[\sum_{i=1}^N X_i \right] / N$$

Where C_j = j th capability (1)

N = number of indicators

X_i = i th indicator

3) Recovery Score (R)

Before calculating the recovery score, it is important to determine the weighting of each capability. For example, indicators that are considered more important for measuring the phenomenon of interest are given great weights (Booyesen, 2002). This step of weighting index components has been described as being one of the most subjective decisions when constructing an index (Morse, 2004, Bohringer and Jochem, 2007, Tate, 2011). On weighting capabilities, Sen writes, “Along with the exercise of listing the relevant capabilities, there is also the problem of

³⁴ This follows an assumption that the villagers would do the same. Relative weightings by villagers was not explored.

determining the relative weights and importance of the different capabilities included in the relevant list” (Sen, 2005: 158).

Initially, variable weighting options were considered in order to emphasize specific types of recovery (i.e., social recovery, long-term recovery, and so on). However, the decision to use equal weighting was taken. This was due to uncertainty in the appropriate importance of each capability due to an incomplete understanding of the underlying processes involved to assign meaningful weights (Cutter et al., 2003; Tate, 2011). In addition, equal weights would not necessarily bias the analysis and findings, especially as there was a lack of statistical or participatory approach feeding directly into the weighting process. For these and other reasons, fixed weights are far more typical than variable weights when constructing indices (Tate, 2011). Similar approaches have been justified by other researchers measuring capabilities in specific. For example:

The process of deliberation and judgment involved in evaluating capability sets does not need to be comprehensive or complete for practical purposes. Weights do not need to be precisely specified to have practical significance; they can rather be confined to certain ranges or can cover merely the scope of the decision or of the judgment to be taken in a particular case. (Comim et al., 2008: 184).

Aggregation refers to the method used to combine normalized and weighted indicators into the final index (Tate, 2011). Because each capability was weighted equally, aggregation was done by summation. Therefore, the final recovery score is simply calculated by accumulating scores assigned to each individual capability, or in other words, a sum of all of the sub-indices. As an equation:

$$R = \sum_{j=1}^M C_j$$

Where R = recovery score (2)

C_j = j th capability

M = number of capabilities

It is important to note here that recovery (R) is a measure of relative well-being across cases, rather than a measure of each case post-disaster relative to its pre-disaster state.

5.5. Index validation

The MDRI has been constructed with close attention in order to maximize validity (i.e., maximize the likelihood of the index actually measuring community recovery). Techniques to do this include comparisons with other documented ways of measuring community recovery (i.e., Rubin 1985, Brown et al., 2010). However, extensive validation of the index is difficult given the depth of the data required and inaccessibility of the case studies. With the large number of villages in the region of study, there are few researchers (familiar to this researcher) in Aceh who know each of the village cases in enough depth to contribute to the validation. In order to conduct a basic validation of the tool, the same research assistant (RA) who accompanied the researcher during fieldwork was asked to independently provide her village rankings on the different dimensions of recovery included in the index. The rankings of the RA supported those of the author.

A final list of 42 indicators across the 12 capabilities is listed in Table 5.2. The cases are ordered in increasing level of recovery (*R*). In the table, *X* and *C* range from 1=low to 3=high, and *R* ranges from 12=lowest to 36=highest. Mean scores are listed to enable comparisons in the next section. Detailed breakdowns used to develop scores are included in Appendix Three.

Capability	Indicator	Neheun Compound		Bitai		Gampong Baro		Lampulo		Panteriek Compound		
		X	C	X	C	X	C	X	C	X	C	
1	Life – being able to live a long and complete life	living conditions (last two years)	2		1		2		3		3	
		marriage rates	1		3		3		3		1	
		birth rates	1		2		3		3		1	
		population change	1	1.3	2	2.0	2	2.5	3	3.0	2	1.8
2	Bodily health – being able to have good health and adequate nourishment	reported illness	1		3		3		1		2	
		available health services	2		2		1		3		1	
		number of food vendors	1		1		2		3		3	
		productive cropland	1		3		1		2		1	
3	Mental wellbeing – being able to be mentally healthy	available clean water	1	1.2	3	2.4	2	1.8	2	2.2	3	2.0
		expressions of grief	3		1		3		1		2	
		expressions of fear	3		1		3		1		2	
		negative reminders of disaster	3	3.0	2	1.3	3	3.0	1	1.0	3	2.3
4	Education – being able to be educated	emphasis on continued education	2		1		1		2		3	
		school attendance levels	1		2		2		2		3	
		supplies/equipment available	1	1.3	2	1.7	2	1.7	3	2.3	2	2.7
5	Shelter – being able to be sheltered	quality of homes	3		3		2		2		1	
		available land for new homes	2		3		1		1		1	
		population in semipermanent houses	3	2.7	1	2.3	2	1.7	1	1.3	3	1.7
6	Mobility – being able to be mobile and move freely	quality of roads	3		3		2		1		2	
		public transit	1		2		3		3		2	
		population with motorbikes (as %)	1	1.7	2	2.3	1	2.0	3	2.3	3	2.3
7	Social interaction – being able to engage in social interaction	number of community activities	2		1		2		3		3	
		use of public space	1		1		2		2		3	
		community satisfaction	1		2		1		2		3	
		involvement in local village politics	1	1.3	1	1.3	2	1.8	3	2.5	2	2.8
8	Attachments – being able to have attachments to people and things	home ownership	2		1		3		2		3	
		number of renovations	1		2		1		2		3	
		number of 'permanent' plants	1		3		1		2		3	
		home occupancy rate	1	1.3	2	2.0	3	2.0	2	2.0	3	3.0
9	Environment – being able to live with concern for natural surroundings	vegetation	2		3		1		2		3	
		littering	2		3		3		1		3	
		garbage disposal	1	1.7	3	3.0	1	1.7	2	1.7	3	3.0
10	Livelihood – being able to seek employment and attain a living	unemployment rate	1		1		2		3		2	
		traditional survival options	1		2		1		3		1	
		home industries and small shops	1	1.0	1	1.3	2	1.7	3	3.0	2	1.7
11	Exposure – being able to be protected from hazards and forces of nature	preparedness planning and awareness	1		3		1		2		1	
		hazards (based on disaster event)	3		1		3		1		2	
		disaster risk (based on TDMRC)	3	2.3	2	2.0	3	2.3	1	1.3	1	1.3
12	Respect – being able to live free of discrimination, crime and violence	level of tolerance (ethnic and religious)	2		2		1		2		3	
		gender inequality	2		1		1		2		3	
		crime rate	2		2		3		2		1	
		disparity between young adults and elders	1	1.8	1	1.5	3	2.0	2	2.0	3	2.5
		Total Recovery Score (R)		20.4		23.2		24.1		24.7		27.0
Mean Score		1.7		1.9		2.0		2.1		2.3		

Highest capability in case

Highest case in capability

Table 5.2. MDRI with scores

5.6. Recovery ranking

Based on the MDRI, the overall holistic community recovery ranking of the five village cases from highest recovery to lowest recovery is:

1. Panteriek Compound (highest)
2. Lampulo
3. Gampong Baro
4. Bitai
5. Neheun Compound (lowest)

The rankings listed above point to some compelling findings. For instance, the two villages ranked highest overall in recovery differ in participation and movement. If we refer back to our case selection table (Table 5.3 below), the rankings show that both the highest recovered case (Panteriek Compound) and the lowest recovered case (Neheun Compound) are 'moved' cases and that the two 'not moved' cases rank second and fourth in terms of overall recovery. Therefore, rankings indicate that movement does not necessarily directly relate to overall recovery score. The mixed ranking goes against the expectation that rootedness is directly related to positive recovery outcomes and findings point to the need to understand what other elements are at play.

In terms of participation, one non-participation case manifests the highest recovery score (Panteriek Compound) while one other has the lowest recovery score (Neheun Compound). The participatory cases rank second and third in recovery level. Rankings indicate that a participatory process does not necessarily directly correlate to overall recovery score. The mixed ranking of cases questions the assumption that higher participation is of utmost priority, but rather suggest the need to understand the different meanings of participation and balance participatory processes alongside other pressing needs. The findings also highlight that it is not a matter of simply movement versus non-movement and/or participation versus non-participation, in terms of enabling positive recovery outcomes.

	Participatory	Non-participatory
Moved (Resettlement not in previous location)	#3 Gampong Baro	#5 Neheun Compound #1 Panteriek Compound
Did not Move (Resettlement in previous location)	#2 Lampulo	#4 Bitai

Table 5.3. Case criteria and communities selected (ranked)

(#1 = highest recovery score)

In addition, MDRI results point to some observations in relationship to basic dimensions of movement and participation that support the need to explore some of the other elements at play. These findings will be further explored in the next chapter (Chapter Six). For example:

- Only two of the three resettlements in a new location, Neheun Compound and Gampong Baro, have a high score in mental wellbeing
- Lampulo and Panteriek Compound both ranked low on safety, even though one was a resettlement in a new location and one was a resettlement in previous location
- Bitai, a resettlement in previous location, ranked highest on environment even though community members lacked the know-how to pursue livelihood activities provided through the environment
- Panteriek Compound, a resettlement in a new location, was the only case to display a high score in attachments
- Bitai and Neheun compound both ranked low on social interaction, even though one was a resettlement in a new location and one was a resettlement in previous location
- Lampulo and Gampong Baro, both participatory cases, ranked low on shelter and high on life

5.7. Correlations across groups of capabilities

As described earlier, the intention of having a multi-dimensional index of community recovery is to allow for the exploration of several correlations through grouping capabilities in different ways. These include both systematic comparisons across different capabilities in order

to understand each village case better and comparisons based on participation, movement and other key characteristics summarized in Chapter Four. Comparisons between cases will develop basic understandings on underlying elements as they play out in the villages and will provide the motivation for in-depth analysis in the next chapter.

5.7.1. Physical vs. intangible

In Aceh, as is often the case in many post-disaster situations, most of the recovery activities and budget allocations largely emphasized physical and tangible dimensions of rebuilding. However, as argued through the literature review and framework, when looking at community recovery from a holistic approach it is the intangible outcomes that drive the rebuilding of the “community”. While majority of assessments on recovery outcomes focus on the tangibles (i.e., physical), the capabilities-based approach used in this study incorporates a number of intangible outcomes (as indicated in the next paragraph). Grouping the capabilities this way displays what may be driving the recovery in each of the village cases; comparing mean scores by physical and intangible capabilities also allows us to draw conclusions on which set was perhaps more closely a predictor of overall recovery in the cases.

For purposes of the analysis and discussion, shelter, mobility, environment and safety have been classified as physical capabilities as they are all items of material nature that can be readily physically perceived and measured for the most part. There are elements of each that are intangible in nature, for example preparedness and awareness (under safety), but the way they have been measured for purposes of the index situates them as physical capabilities. Life, bodily health, mental wellbeing, education, social interaction, attachments, livelihood and respect have been classified as intangible capabilities as they are all elements of recovery that do not necessarily have a physical presence, nor can they be readily measured. Table 5.4 below provides a summary of scores by village divided by physical capabilities and intangible capabilities.

	Neheun Compound	Bitai	Gampong Baro	Lampulo	Panteriek Compound
Physical capabilities					
5 Shelter	2.67	2.33	1.67	1.33	1.67
6 Mobility	1.67	2.33	2.00	2.33	2.00
9 Environment	1.67	3.00	1.67	1.67	3.00
11 Safety	2.33	2.00	2.33	1.33	1.33
Total Score	8.33	9.67	7.67	6.67	8.00
Mean Score	2.08	2.42	1.92	1.67	2.00
Intangible capabilities					
1 Life	1.25	2.00	2.50	3.00	1.75
2 Bodily health	1.20	2.40	1.80	2.20	2.00
3 Mental wellbeing	3.00	1.33	3.00	1.00	2.33
4 Education	1.33	1.67	1.67	2.33	2.67
7 Social interaction	1.25	1.25	1.75	2.50	2.75
8 Attachments	1.25	2.00	2.00	2.00	3.00
10 Livelihood	1.00	1.33	1.67	3.00	1.67
12 Respect	1.75	1.50	2.00	2.00	2.50
Total Score	12.03	13.48	16.38	18.03	18.67
Mean Score	1.50	1.69	2.05	2.25	2.33

Table 5.4. Capabilities scores: physical and intangible

The findings show Bitai as the highest ranked in terms of physical capabilities, followed in decreasing order by Neheun Compound, Panteriek Compound, Gampong Baro and Lampulo. On the contrary, the findings show Panteriek as the highest ranked in terms of intangible capabilities, followed in decreasing order by Lampulo and Gampong Baro (tied), Bitai and Neheun Compound.

It appears there is little pattern between either physical capabilities or intangible capabilities and movement, for village cases are dispersed in rankings with little patterns on the basis of moved or not moved. For example, the highest and lowest ranked villages on the basis of physical outcomes are both not moved cases, while all three of the moved cases are in the middle. When looking at intangible capabilities and movement, one moved village case is highest ranked, another in the middle, and the third lowest ranked. However, on the other hand, there are some patterns evident between physical and intangible capabilities on the basis of participation. The two highest ranked participatory cases are higher up on the intangible capabilities ranking, even though the highest ranked is a non-participatory case. This is

indicative that participatory practices may contribute to intangible outcomes. What is interesting is that the same two participatory cases are the lowest ranked in respect to physical outcomes.

5.7.2. Individual vs. community-driven

Though all of the capabilities have been aggregated to the community level for the study, several are inherently individually based, while others are community driven. Capabilities have been assigned as being individual if the individual, rather than community determines them. These include life, mental wellbeing, livelihood, attachments and safety. Capabilities have been grouped as community-driven if they are strongly influenced or determined by the community or surrounding environment. These include education, health, shelter, mobility, social interaction, environment and respect. Table 5.5 below provides a summary of scores by village divided by individual capabilities and community-driven capabilities.

	Neheun Compound	Bitai	Gampong Baro	Lampulo	Panteriek Compound
Individual capabilities					
1 Life	1.25	2.00	2.50	3.00	1.75
3 Mental wellbeing	3.00	1.33	3.00	1.00	2.33
10 Livelihood	1.00	1.33	1.67	3.00	1.67
8 Attachments	1.25	2.00	2.00	2.00	3.00
11 Safety	2.33	2.00	2.33	1.33	1.33
Total Score	8.83	8.67	11.50	10.33	10.08
Mean Score	1.77	1.73	2.30	2.07	2.02
Community capabilities					
4 Education	1.33	1.67	1.67	2.33	2.67
2 Bodily health	1.20	2.40	1.80	2.20	2.00
5 Shelter	2.67	2.33	1.67	1.33	1.67
6 Mobility	1.67	2.33	2.00	2.33	2.33
7 Social interaction	1.25	1.25	1.75	2.50	2.75
9 Environment	1.67	3.00	1.67	1.67	3.00
12 Respect	1.75	1.50	2.00	2.00	2.50
Total Score	11.53	14.48	12.55	14.37	16.92
Mean Score	1.65	2.07	1.79	2.05	2.42

Table 5.5. Capabilities scores: individual and community

The findings show Gampong Baro as the highest ranked in terms of individual capabilities, followed in decreasing order by Lampulo, Panteriek Compound, Neheun Compound and Bitai. In terms of community-driven capabilities, the scores show Panteriek Compound as

the highest ranked, followed in decreasing order by Bitai, Lampulo, Gampong Baro and Neheun Compound.

There are some patterns evident between community-driven capabilities and movement. For example, two of the three moved cases fare lowest in regards to community-driven capabilities, while both of the not-moved cases fare high in the same category. The same is not true in terms of individual capabilities as moved and not moved cases are dispersed across the ranking. In respect to participation, it seems both of the participatory cases were higher ranked on the individual capabilities, and non-participatory cases were ranked lower on the same. However, this pattern was not evident with the community-driven capabilities. The one village case that is the exception to both of these patterns is Panteriek, which is a moved and non-participatory one.

5.7.3. Immediate vs. transition

At the time of fieldwork, the general consensus was that recovery was complete and Aceh was in a stage of transition toward on-going development. It is this time period that is the focus of this study, and one that will be referred to here as that of “transition”. This terminology is based on common usage by interviewees, and coincides with a period of linkage between recovery activities and development activities. This division will translate into the analysis in different ways, including the ranking comparisons that follow. To provide context to this division, as described earlier, the weighting of the twelve capabilities did not take into consideration current circumstance in the context. However, capabilities of greater importance during the immediate phase are not necessarily the capabilities of greater importance in the transition phase. For example, as Sen articulates on measuring capabilities:

The judgment must take into account the extent to which the different abilities are being realised or violated. Also, the weighting must be contingent on circumstances. We may have to give priority to the ability to be well-nourished when people are dying of hunger in their homes, whereas the freedom to be sheltered may rightly receive more weight when people are in general well-fed, but lack shelter and protection from the elements. (Sen, 2005: 159).

Therefore, rather than assigning different weights to each capability in the constructed index, the discussion here will draw correlations across those capabilities of priority during the recovery phase, and those of priority for recovery to development. Instead of assessing how these capabilities were addressed at the different phases, the scoring is based on how the

capabilities are manifested in current outcomes. The capabilities have been grouped according to impressions gathered during key expert interviews. Experts were asked what was prioritized during early recovery, long-term recovery and at the current time. In many cases, this question was preceded by discussion on lessons learned in respect to what should have been prioritized over what was actually prioritized.

Key expert responses indicated that during the immediate recovery phase of a disaster, priorities were focused on the provision of basic needs, which includes food, shelter and health and mental care, and as such, these capabilities are grouped within those of immediate. Priorities that extend beyond those of basic need and are grouped under those of transition include education, mobility, social interaction, attachments, environment, livelihood, safety and respect. There was general consensus on most of these, with the exception of education and livelihood, which some expressed as being a basic need. In reality, many of these capabilities were and are incorporated in targeted programs during early recovery by different players (i.e., NGOs, partner agencies, government). However, they have been placed under transition as they often take a back seat when there are more immediate recovery concerns pending, as was the case in some of the village cases used in this study. For example, in some of the cases, school buildings were constructed early on, but the educational institution was established much later (i.e., the buildings were not used as schools until this happened). This was due to elements such as their secondary nature in comparison to basic needs, time sensitivity, and pressures to demonstrate progress to donors. Table 5.6 below provides a summary of scores by village grouped by immediate capabilities and transition capabilities.

	Neheun	Bitai	Gampong	Lampulo	Panteriek
Immediate capabilities					
1 Life	1.25	2.00	2.50	3.00	1.75
2 Bodily health	1.20	2.40	1.80	2.20	2.00
3 Mental wellbeing	3.00	1.33	3.00	1.00	2.33
5 Shelter	2.67	2.33	1.67	1.33	1.67
Total Score	8.12	8.07	8.97	7.53	7.75
Mean Score	2.03	2.02	2.24	1.88	1.94
Transition capabilities					
4 Education	1.33	1.67	1.67	2.33	2.67
6 Mobility	1.67	2.33	2.00	2.33	2.33
7 Social interaction	1.25	1.25	1.75	2.50	2.75
8 Attachments	1.25	2.00	2.00	2.00	3.00
9 Environment	1.67	3.00	1.67	1.67	3.00
10 Livelihood	1.00	1.33	1.67	3.00	1.67
11 Safety	2.33	2.00	2.33	1.33	1.33
12 Respect	1.75	1.50	2.00	2.00	2.50
Total Score	12.25	15.08	15.08	17.17	19.25
Mean Score	1.53	1.89	1.89	2.15	2.41

Table 5.6. Capabilities scores: immediate and transition

The findings show Gampong Baro as the highest ranked in terms of immediate capabilities, followed in decreasing order by Neheun Compound, Bitai, Panteriek Compound and Lampulo. On the other hand, the findings show Panteriek Compound as the highest ranked in terms of transition capabilities, followed in decreasing order by Lampulo, Bitai and Gampong Baro (tied), and Neheun Compound.

When comparing immediate and transition and movement, interesting correlations emerge as moved village cases appear to have higher rankings in terms of immediate recovery, but then move down in ranking in respect to their transition capabilities. For example, one of these cases goes from being second ranked to being last, while another moved case remains at the exact same level in both rankings. There is no pattern evident in respect to participation.

5.8 Mean scores and summary

Table 5.7 below uses mean scores to summarize each village case and the level of capabilities they manifest in respect to the groupings outlined above. Findings point to some interesting observations. For example, the highest overall recovered village, Panteriek, is high

on most accounts, with its lowest dimensions being immediate capabilities and physical capabilities. On the other hand, the lowest overall recovered village, Neheun Compound, is low on most account, with its highest dimensions being physical capabilities and immediate capabilities. This supports the argument that social elements may be of more importance than physical elements of recovery. The same is supported by rankings for the second highest ranked village, Lampulo, which is high on all accounts except two: physical and immediate. Though basic observations can be explored through comparing capabilities as has been done here, each case unlocks findings that can be applied toward better understanding recovery outcomes.

	Neheun Compound	Bitai	Gampong Baro	Lampulo	Panteriek Compound
Overall Recovery	1.70	1.93	2.00	2.06	2.25
Physical	2.08	2.42	1.92	1.67	2.00
Intangible	1.50	1.69	2.05	2.25	2.33
Individual	1.77	1.73	2.30	2.07	2.02
Community	1.65	2.07	1.79	2.05	2.42
Immediate	2.03	2.02	2.24	1.88	1.94
Transition	1.53	1.89	1.89	2.15	2.41

Table 5.7. Mean capabilities scores: summary

The absolute difference between overall recovery mean scores and the capability groupings mean scores also allude to some interesting observations (see Table 5.8). For example, the absolute difference can indicate to what degree capability dimension mirrors overall recovery outcomes. Groups with smaller differences can be considered better indicators of overall recovery outcomes. The table illustrates that, based on mean scores, all of the village cases, intangible, community and transition dimensions were better indicators of overall recovery outcomes. The calculations support a case for intangible, community and transition (long-term) dimensions of the recovery process playing a more important role in overall recovery outcomes.

	Neheun Compound	Bitai	Gampong Baro	Lampulo	Panteriek Compound
Physical	0.39	0.49	0.09	0.39	0.25
Intangible	0.19	0.24	0.04	0.20	0.08
Individual	0.07	0.20	0.30	0.01	0.23
Community	0.05	0.14	0.21	0.01	0.17
Immediate	0.33	0.09	0.24	0.18	0.31
Transition	0.17	0.04	0.12	0.09	0.16

Table 5.8. Absolute differences in mean capabilities scores

In addition to the findings above, this chapter has also demonstrated that initial expectations of moved versus not moved and participation versus non participation do not explain the variation displayed in the overall recovery rankings. To take the case analysis further and develop a deeper understanding of what may explain the variation, the next chapter will explore the cases through the lens of place. In applying the lens, the chapter will explore placeness through prominent themes found in qualitative data.

CHAPTER SIX: ‘PLACENESS’ ANALYSIS

In Chapter Five, a quantitatively driven approach was used to develop a multi-dimensional recovery index. The purpose of the index was to systematically draw conclusions on holistic and multidimensional recovery outcomes in each village case. In doing so, the chapter led to village rankings based on overall recovery scores, with highest to lowest ranked cases being in order: Panteriek Compound, Lampulo, Gampong Baro, Bitai and Neheun Compound. Some of the key findings from these comparisons include the following:

1. Movement did not necessarily correlate to poor recovery outcomes compared to non-movement.
2. Participation did not necessarily mean stronger recovery outcomes compared to non-participation.
3. Intangible, community and transition elements of recovery, seem to be more closely associated with overall recovery outcome compared to physical, individual and immediate dimensions of recovery.

This chapter uses qualitative data to look in greater depth at drivers of resettlement and recovery success across the five cases. In doing this, Chapter Six continues to explore the second sub-question: ‘What are the factors that shape long-term holistic community disaster recovery?’ and aims to address the third and fourth research sub-questions: ‘How do resettlement patterns enable or hinder development?’ and ‘How are attributes of place addressed in the various resettlement patterns?’ Some of the sub-questions that will be addressed by this chapter include: How are the key attributes of place manifested in the cases? How do these attributes influence the success of a resettlement? What implications do these have for recovery outcomes? The overall purpose of this chapter is to gain qualitative insight into the relative recovery outcomes determined in Chapter Five. This includes nuances of recovery, and in particular the “how” and “why” in respect to recovery outcomes.

6.1 Framing the analysis

The questions listed above will be answered by developing what will be called a ‘placeness’ analysis. The analysis elaborates on the approach described in Chapter Two by using a lens of place to understand the key characteristics of the communities that influenced

resettlement and recovery success. Therefore, ‘placeness’ is understood as community attributes rather than as an experiential and/or cultural process. Figure 6.1 below illustrates where the Chapter fits in the broader framework. In particular, the chapter will develop an analysis of resettlement influences through the stages described below.

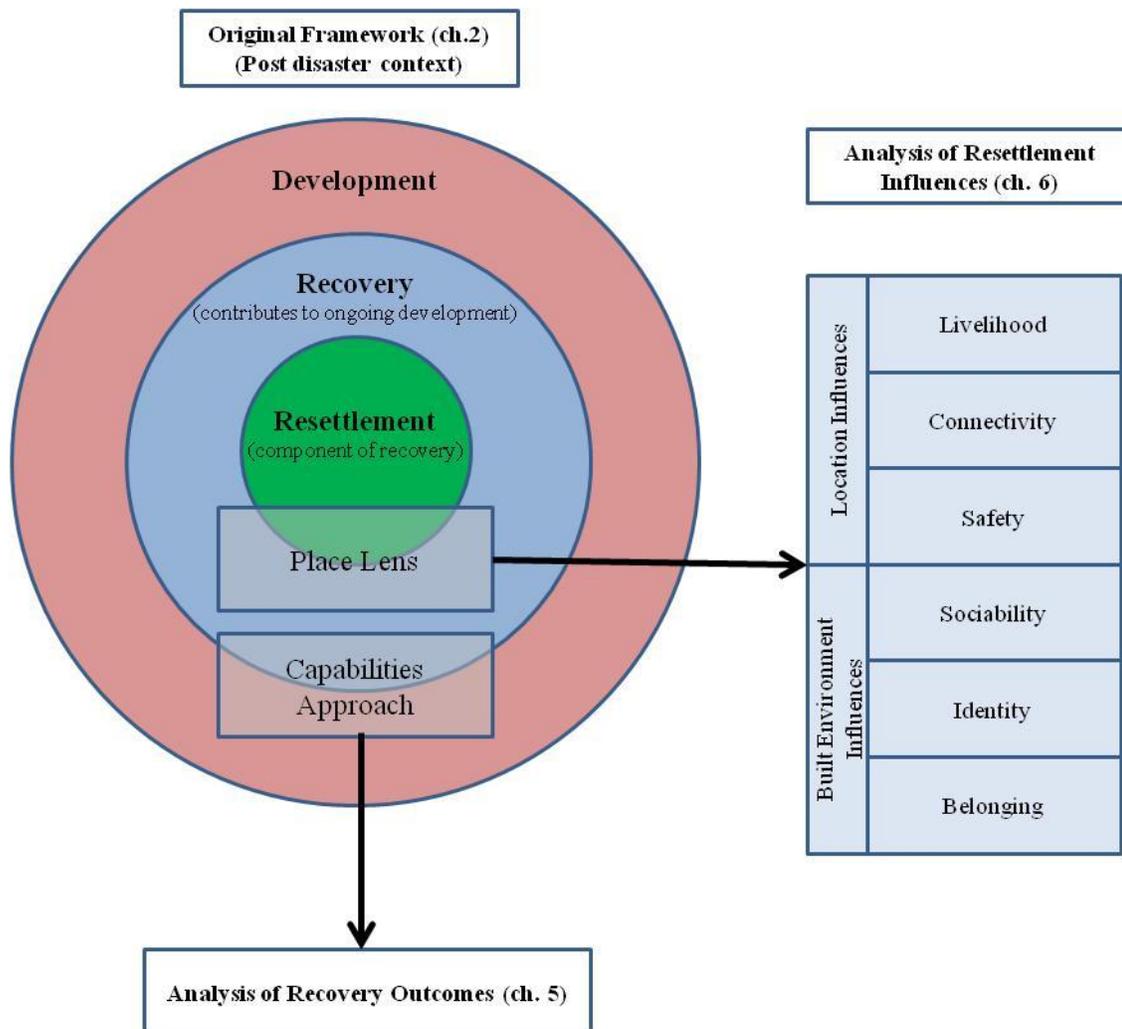


Figure 6.1. Framing the placeness analysis

The lens of place was implemented in this chapter through two stages. In the first stage of the analysis process, qualitative data were analyzed to develop thematic groupings of place based themes (i.e., elements of community that were inherently linked to their notions of place) expressed by the communities as being of most importance to them across all of the cases. The data were sorted by reading through data in detail and making notes of which relevant topics

emerged during the interviews, focus group discussions, and observations when respondents were speaking about their community and place. Based on these characteristics, categories of responses were developed. Relevant responses and phrases from each interview, focus group and set of observations were grouped within these categories to understand the frequency and importance of the various categories. Repetitions, similarities and differences across data sets for each case were also recorded. Categories were then grouped by major themes through community characteristics. These themes were developed through the process of organizing qualitative data into categories of types of place attributes that were most commonly raised during focus group discussions and interviews. Six themes were developed and are displayed as resettlement influences in Figure 6.1 above. Three of these themes - livelihood, connectivity and safety - will be described as location influences. The other three themes - sociability, identity and belonging - will be displayed as built environment influences. These are described in greater detail in Sections 6.2 and 6.3 below.

As a second stage of analysis, within these six themes, mechanisms that emerged as positively impacting resettlement and recovery success were explored. Mechanisms were developed through grouping together impacts that were most prevalent in focus group discussions and direct observations. Even though many of these mechanisms were evident across all of the cases, select examples from cases will be used in this chapter to demonstrate how they were manifested in the communities. Comparisons between groups of villages will provide an understanding of how certain mechanisms contribute to resettlement success and positive long-term recovery outcomes. Simultaneously, this analysis will allow for the exploration on the role of specific contextual variables and other factors that emerge as being of significant importance within these mechanisms.

6.2 Location influences

The actual geographical location was a key component of each community. Each of the village cases selected was situated in a specific and clearly definable physical location: Lampulo and Bitai remained along the coast of Banda Aceh, Gampong Baro moved from the coast of Aceh Besar to a hillside in the near vicinity, Panteriek Compound was built as a new compound within Banda Aceh, while Neheun Compound was also been built as a new compound, but on a hilltop in Aceh Besar. Two had a long history in their particular location while three were new

locations. The unique location of each village was an underlying determinant for place characteristics grouped within themes of livelihood, connectivity and safety.

6.2.1. Livelihood activities

The theme of livelihood activities was a strong underlying aspect of location. The focus here is not to look at livelihood activities *per se*, but rather explore notions of place as they apply to access to traditional and alternative livelihood activities across the five cases.

6.2.1.1. Access to traditional livelihood activities

As expected, discussions of traditional livelihood activities were almost always followed by discussions of physical location in relationship to the activity. While the relationship between location and traditional livelihoods appears to be self-evident, in reality it was more complex than direct relationships. To explore the complex relationship, three distinct patterns are presented across the cases: one ‘not moved’ village with access to traditional livelihood activities (Lampulo), one ‘not moved’ village with access to traditional livelihood activities but limited know-how (Bitai), and three ‘moved’ villages with low access to traditional livelihood activities (Gampong Baro, Panteriek Compound, Neheun Compound).

Villagers of Lampulo involved in fishing and trade occupations spoke of favourable working conditions primarily because they continued to reside close to the water and simply had to re-establish familiar livelihood practices that they had carried out prior to the disaster. Other case studies on the ease of which livelihoods were re-established in post-disaster Aceh have pointed to similar findings (da Silva, 2010). In spite of prevailing trauma, on-going flooding and poor infrastructure, the majority of interviewed villagers consistently cited one of the major reasons for remaining in the village as the access to livelihood. Because of their ability to quickly resume previous livelihood options the immediate recovery experienced in Lampulo had been faster than reported in the other cases. This is in spite of Lampulo being the last of the cases to have their permanent housing projects completed.

However, while the majority of the villagers in Lampulo were able to maintain an income from their traditional professions, the situation in Bitai was not as prosperous. In spite of being a resettlement in previous location, a large portion of the original villagers of Bitai were struggling. While location enabled access to traditional livelihood options, community capacities limited the

realization of it. Unlike Lampulo, many of the traditional resources that the community had relied on such as fish ponds and rice fields were no longer available in the form in which they existed prior to the disaster (i.e. due to damage from the tsunami, such as from saltwater intrusion). Furthermore, productive land that was available remained unproductive due to the loss of an entire generation of the community - the elderly - and their traditional knowledge. Therefore, in Bitai, while location was favourable to traditional livelihood activities, the impetus and skill sets to re-establish these sources were absent. This supports the position of favouring the development of local capacities in parallel recovery strategies.

The three moved cases - Neheun Compound, Gampong Baro and Panteriek Compound - struggled with access to traditional sources of livelihood, directly as a consequence of location. They were no longer situated along the body of water where they originally had their fish ponds, fishing unions, trade stations and/or proximity to office jobs in the city centre. This struggle was most profoundly exemplified in the case of Neheun Compound, where community members expressed strong negative implications of their location. In fact, the main challenge expressed by villagers of Neheun Compound was the distance from their traditional activity of livelihood. Consequently, with virtually no access to traditional sources of income in the immediate surrounding area, they spoke of poor recovery outcomes due to limited livelihood options. Many were forced to leave the resettlement and find accommodation with relatives closer to the city centre simply because of a lack of options to support themselves. As one informant explained, this decision to leave was especially prevalent in widowed women. He spoke of the many widowed women who had received a house in Neheun Compound, but were forced to abandon and/or sell their house due to limited livelihood options available nearby to support their family: "...they have no family here, no community here, no income here, no purpose here, so how could they stay?" (Male, Neheun Compound, 40s).

6.2.1.2. Access to alternative livelihood activities

What differentiates the moved cases of Panteriek Compound and Gampong Baro from Neheun Compound is that villagers of the former two cases were able to access livelihood activities beyond what they had previously relied upon. Access to non-traditional income generating schemes, or in other words, alternative livelihood activities, were described as being key factors in resettlement success. These included cash grants and loans to stimulate small to medium size enterprise. As with traditional livelihood activities, location appeared to be the key

driver of access to alternative activities of livelihood. However, while location was important, not having moved was not necessarily a prerequisite to favorable access.

For example, similarly to Gampong Baro and Neheun Compound, many of the residents of Panteriek Compound expressed difficulties as they are now positioned away from their traditional sources of livelihood. However, because the resettlement was close to the city centre, the opportunities accessible to residents were far greater than those in Neheun Compound, which was farther away. Many villagers were forced to find new livelihoods, and were able to successfully do this because of their short distance to markets. At the same time, the community also had a strong motivation to create their own businesses within the compound. This was apparent through a high occurrence of positive phrases in reference to alternative livelihood activities such as, “We are trying to find a way to support ourselves...”, and “My business here [home spa] is more comfortable now...”. It was apparent that those community members that were faring the least well were those who had not yet been able to access alternate livelihood options. Aside from Gampong Baro, discussed next, this motivation was not observed in the other cases.

The failures of the resettlement of Gampong Baro are partly explained by the conditions of access to both traditional and alternative forms of livelihood. For example, as described repetitively by interviewees, their new location meant they were no longer immersed in the context of their traditional livelihood activities as they had been for generations. Villagers expressed great distress over this physical separation, pointing to a number of negative implications. This included notable shifts in roles and responsibilities among village members, particularly from a gender perspective. For example, while the majority of male villagers emphasized access as a major daily concern, most of the female villagers emphasized their lack of involvement with any sort of livelihood support. This is in contrast to their previous location, where women played an active role in providing for their households (for example, managing shrimp ponds and livestock). Current conditions demanded that only select members of the village could travel to the site of their previous land on a daily basis to pursue livelihood activities. Consequences of this on self-worth and purpose were expressed by many of the females of Gampong Baro. For example:

Life is more difficult now than before. We had our own small gardens before, we would catch oysters in the sea, and we had livestock to manage. We stayed busy. Now we are just sitting and waiting for our husbands to come home. (Female, 40s, Gampong Baro)

A key factor that is evident in the success of Gampong Baro is that of physical access to the main road. This is in contrast with the nearby village of Neheun Compound. As described earlier, Gampong Baro, was right off the main road and within close boundaries of surrounding villages. Though situated on high ground with spectacular views, Neheun Compound was largely disconnected from any broader community outside of the compound, including being physically detached from the main road. Comparing these two cases demonstrates that the relationship to the main road was vital in enabling access to alternative activities of livelihood. For example, physical access played a key role in enabling access to small entrepreneurial projects in Gampong Baro, while it hindered it in Neheun Compound. During discussions with groups from respective communities, there was widespread knowledge of loan schemes in Gampong Baro, while very few members of Neheun Compound seemed to be aware of similar opportunities. Stronger activity in submitting loan proposals was verified during an interview with an NGO that provided loans to all of the village cases explored in this study.

In Gampong Baro, there are 17 businesses so far...It is a very active community...they keep requesting proposals. There are maybe one or two in Jackie Chan [Neheun Compound], because they don't request many. Even old Neheun has more projects than [Neheun Compound]. Maybe it is because we don't have any promotion for the program. I mean it goes mouth to mouth and its possible the people of [Neheun Compound] don't know about it because they are up in the hills and don't hear about it. Communication in our villages tends to happen around the main roads. (Male, 30s, NGO)

Even beyond access to alternative livelihoods, the location of the village was significant in enabling broader beneficial relationships contributing to well-being outcomes. For example, sellers from other villages providing fish and/or baked goods were hardly visible in Neheun Compound, while they were quite active biking around and making sales in all of the other cases. Also, since Gampong Baro was next to the main road, there was more potential business opportunity compared to Neheun Compound.

Shifts from traditional activities to alternative activities in the context of change in Aceh

While discussion on alternative livelihood activities was ongoing in the moved cases that have just been described, there was another type of related dialogue that was taking place in the not-moved village of Lampulo. This was around whether access to traditional livelihood

activities or alternative ones would be more beneficial in the long run. There was evidence of similar dialogues in Bitai, but it was not prevalent.

Even though Lampulo had been able to “bounce back” quickly during the recovery phase due to the ability to pursue traditional livelihoods, and the fact that the village was maintaining revenues from these activities, conversations still alluded to fears of the risks associated with the long-term reliance on these traditional forms of survival. This was justified by environmental change observed by various sources in Lampulo, including a decreasing fish supply (i.e., data from fisheries department) and increasing competition with modern technologies (i.e., boats and tools available to some members of the community but not others). As a consequence, some members of the fisherman community residing in Lampulo were skeptical of being able to sustain their reliance on fishing as a primary source of livelihood, while other members conducting trade were concerned by changes to the land. For example:

As fishermen, we have a problem if we have to be going back and forth every day. There are not many fish nearby anymore...there is less fish now than before tsunami. The ones with the big funding can go in a boat. They go almost near to Thailand and come home only once a week... and they have expensive equipment. So now we have competitors with big boats - many have this big boat, even from Block 1. We don't know where they got the big boats from because it is at least 1 billion Rupees for a big boat. We don't know how they got enough money to get the boat and become so prosperous. Maybe the price of land is getting higher, so they can sell their land and get the boat... also because they can get their ancestors' and deceased family land and sell it for profits. Maybe that is why. (Male, 40s, Lampulo)

There used to be plants there to roll cigarettes. The tsunami got rid of these plants. That swamp area was a source of tobacco for us. Now where the plants were, there is water. There used to be a lot of fish over there as well, but not anymore... and mangroves take a very long time to grow. Our women used to sell products from palm trees from here too, but do you see them around? (Male, 50s, Lampulo)

Community members also expressed that even though their family members included generations of fishermen, for the first time they wished for their children to seek alternative careers. This was largely attributed to an acknowledgement of a changing regional situation and exposure to the multitude of jobs that had been made available by NGOs. Some youth interviewed expressed a drive to look beyond traditional roles and more interest among themselves and their peers to pursue education and find a non-traditional job. However, on the whole, expressions on exploring non-traditional careers were more passive in nature, especially

in comparison to Panteriek Compound as described in the previous section. In comparison, the actual push to seek alternative sources of income in Lampulo was not particularly strong.

6.2.2. Connectivity to the broader networks

Each of the case villages is situated within a wider context characterized by unique geographical, economic, and political conditions. This wider context can be described as local and regional networks. The connectedness between each village and these wider networks emerged as a strong theme in defining each case as a specific place. The location of each case underpinned the nature of connectedness. Within this theme, the physical positioning of the communities can be explored in relation to creating place and influencing resettlement success through developing broader connectivity.

6.2.2.1. Access to local governance structures

As a reminder, both of the new settlements of Neheun Compound and Panteriek Compound had unique governance structures. Neheun Compound had its own compound chief governing community affairs, but working under the village chief for all of Neheun. Panteriek Compound did not have a compound chief, but rather shared the village chief with the old community of Panteriek. Comparing the new resettlements of Neheun Compound and Panteriek Compound shows how both proximity and levels of interaction between a community and broader governance structure could positively influence the ability to build and develop a prosperous community. Similarly, observations from Lampulo and Gampong Baro in comparison to Bitai support these findings.

There was significant distance between the community of Neheun Compound and the Neheun village office, with the latter being situated on the main road. This led to a clear physical detachment between the two and had implications of limited ongoing interaction between the community members and the main village office. Lower levels of interaction between community members and the village office led to negative impacts such as limited voice in community matters and a lack of sense of belonging as a whole, which will be discussed shortly.

While the Neheun chief had an office, the compound chief in Neheun Compound did not; rather, he conducted any matters within his home when necessary. Since his home was located in a higher block, locating the compound chief was sometimes a challenge. This was raised by

some of the community members, and also experienced by the researcher. Since Neheun Compound had its own compound chief, villagers of Neheun Compound were one level removed from the main village office affairs. Even though the compound chief had been the chief of his previous village on the coast and was experienced with dealing with village matters, the governance structure limited the extent of control over community affairs beyond the everyday. The minimal level of engagement between the compound chief and village chief appeared to be a key factor in limiting the voice and needs of community members in the compound. For example, since there were many other new compounds under the Neheun village chief, little attention was being given to the specific needs of each compound, but rather the approach being undertaken was that described earlier where the village budget was allocated to one compound at a time over a period of years.

On the contrary, Panteriek Compound was physically situated in immediate contact with the broader community of Panteriek and the village office of Old Panteriek. Even though the highest leaders of the village (chief and secretary) were from the community of Old Panteriek, they continuously expressed their initiative to bring together the compound and old community toward a unified village. Community members in Panteriek Compound spoke of these key members of the village office as being attentive to their needs as a new community. For example, the leadership structure of Panteriek Village as a whole had changed to have a clear balance of leadership from Panteriek compound. Furthermore, unlike in Neheun Compound, the block leaders and community members in Panteriek Compound had direct access to the village office and village office leadership.

The importance of proximity and interaction in resettlement success are also evident in the other three cases: Lampulo, Gampong Baro and Bitai. The village offices for these three cases were quite centrally located in the village, and next to key meeting places. In all three cases this was the prayer hall, which community members naturally gravitate toward. However, as described earlier, the office of Bitai remained closed to the community. Like the Neheun Compound chief, he preferred to conduct matters in his home when needed. This meant that the village chief was not available to community members on an ongoing basis. Similar observations were evident in Gampong Baro, though to a lesser degree, where the chief was often engaged in his own livelihood activities and played a more needs-based function in the community. Both of

these examples are in contrast to Lampulo, where the chief was often in the village office on a daily basis and had constant flow of community members voicing concerns and needs.

6.2.2.2. Relationships with regional actors and agencies

Discussions and informal conversations with community members about the time of their resettlement included strong descriptions of the post-recovery environment. This environment included several key players including aid organizations, regional actors and agencies. A strong community relationship with these key players was found to be very important during the resettlement process and well into long-term recovery. Physical location and proximity played a key role in this through enabling exposure to these key players, who were concentrated in the city centre. In addition to favorable location, some of the cases demonstrate that community leadership was also a strong factor in facilitating this exposure. This was true even in cases where physical location was not the most favourable (i.e., Panteriek Compound and Gampong Baro), though to a lesser extent. To display some of these findings, we can start by first looking at Lampulo as a strong example of location and leadership favouring exposure during the resettlement process and into the current day. Comparisons with findings from Bitai will be used to support this argument. We then look at Panteriek Compound and Gampong Baro in comparison to Neheun Compound to see how movement affects outcomes.

Since both of the two non-moved cases, Bitai and Lampulo, were already established communities, they were quickly exposed to various aid projects directed at their respective communities. For example, several key experts attributed the success of the case of Lampulo partly for its central location since this meant more exposure to aid agencies and consequently more funding for early recovery efforts in the village. The same holds true for Bitai, though not to the extent described by informants in Lampulo. The optimal location of Bitai, like Lampulo, should have meant continuing stronger linkages to the broader system. In reality, this did not appear to be the case. However, informants in Bitai spoke of limited relationships with current-day key players (i.e., local government agencies) after the majority of aid agencies had left the region, while Lampulo had maintained the same.

Observations and interviews indicate reasons for the limited external linkages in Bitai in comparison to all of the other cases to be a consequence of leadership style and priorities. Where Lampulo was maintaining strong relationships with government authorities and external

agencies, Bitai was regarded as being less engaged. With strong administrative capabilities at the village office, members of the Lampulo village office were active in working alongside government agencies in achieving their desired outcomes through transparency and accountability. This was evident in key informant interviews and observational findings within communities, and also when discussing the village cases with some of the key government experts. For example:

Maybe from a resettlement perspective it is the same between Lampulo and Bitai. What makes a difference is the staffing of the village office. Lampulo is more active. They [village staff] come here to the office to get information. They are very busy with their village matters. Bitai is more passive. They are just waiting for the budget to come and are never visiting here! (Male, 60s, Government)

The importance of leadership in developing connectivity within the broader system is also visible through findings on the resettlement process in Gampong Baro. Though not residing on their old land during the recovery efforts, Gampong Baro continued to function as a community after the disaster event. For instance, villagers remained together in temporary shelters due to high regard for maintaining their community and refused to separate. As described in Chapter Four, after the disaster, the leadership of Gampong Baro was very active in finding NGOs to facilitate their objective of buying and rebuilding on land as a community, rather than being separated and dispersed across new resettlements. The leadership played an active role in mobilizing the community toward this goal. Therefore, even if not ideally situated, leadership was able to build relationships to make up for lack of physical connectivity. This engagement remains into the current day, with the Gampong Baro elder always seen sitting at a hut at the base of the village ready to address community issues and engage in conversation with outsiders.

Ensuring accountability and transparency in the allocation of village funds was also an enabler of positive relationships. This was evident through interactions between village staff and government or NGO staff, and supported by comments made by government representatives during key expert interviews. For example, in Gampong Baro, they had a notice board clearly displaying village funds and activities alongside related receipts and bills (see Figure 6.2).



Figure 6.2. Gampong Baro notice board

Source: Photograph by author (D. Panjwani)

On the other hand, as communities that had formed well into the recovery process, Panteriek Compound and Neheun Compound were able to take advantage of the immediate aid after the disaster as they remained in temporary shelters. However, comparisons between the two in regard to current-day relationships demonstrate how prominent location forced the attention of government agencies toward the prosperity of Panteriek Compound, whereas the hidden nature of Neheun Compound kept it out of the public eye. At the same time, the stronger administration capacities in Panteriek Compound and concerted effort to access government budgets for their village had led to stronger relationships with government agencies and their leadership.

6.2.3. Safety from hazards

A strong theme that surfaced across interviews was that of safety from natural hazards. In all of the cases, physical location played a key role in determining sense of safety as well as risk and preparedness.

6.2.3.1. Sense of safety

Those community members that had come to terms with their location in the moved cases, in spite of their distaste for it, had done so mostly because of the perceived safety and emotional comfort that it provided. These sentiments were most profound in Panteriek compound and Neheun Compound. In both of these cases, community members distinctly expressed no fear of future hazard events. Panteriek Compound was the only case in which actual expressions of a sense of safety being away from the ocean were prevalent in discussions. For example, several females from Panteriek Compound spoke extensively on the peace of mind they had simply from being out of sight of the ocean with statements like: “It helps being far from the sea... we lost our husband there, our family, our children. We can start over here”. (Female, 40s, Panteriek Compound). Each recalled their unique story escaping the tsunami; some spoke of severe anxiety when seeing the ocean: “I don’t even want to see Uleelee again... it’s too painful” (Females, 40s, Panteriek Compound).

In reality Panteriek Compound was still situated in an area of risk, due to its location next to the river, as supported by the TDMRC simulation map (Appendix Four). However, most of the community members of Panteriek Compound seemed unaware to this reality and to possible risks due to their compound having been constructed on a swamp. Therefore, a false sense of security was perhaps closer to what was present. Some were noticing water seeping through their tiles or dampness on their floors, which was indicative of possible future hazard.

Plans to re-resettle back to their original village indicated that notions of safety were not a strong concern or consideration across the community of Gampong Baro. Instead, the payoff of moving back to their old land was far greater than that of staying at their new resettlement. This was because their previous location was so intricately connected to every aspect of their lives; the safety that their current physical space offered did not suffice. For example, one elder argued, “We don’t see it as a benefit to live here. It is not any safer. We were born next to the sea and have always lived close to the sea” (Male, 70s, Gampong Baro).

Due to prevailing coastal risks in the unmoved cases of Lampulo and Bitai, data indicates that fear was still very much alive among many of the community members. Descriptions of the event were more common in these two villages than any of the others. For example:

I was drowning over there [pointing]. And I grabbed on to that big tree and held on. The water would push me under, but I held on. Every time I would come to surface, all I

could see was water. We didn't find the bodies of my old family... now I have a new family with two children... We thought the sky was falling down, we had never experienced anything like it and we didn't know what was happening. We thought it was the Day of Judgement, we didn't know that it was water, we didn't even know what a tsunami was! We had never seen anything like it before, but now we have seen it happen even in Japan. When the earthquake happened, we couldn't even stand up. And when the water came it was so strong that we didn't even know it was water because there was wood and cars and all kinds of things coming toward me, and the water was black. When I was holding on to the tree there were three more waves that came... the water would pull everything back into the sea, and then to us again... there was such force. Every time. (Male, 40s, Bitai).

As described earlier, teachers from schools in both villages commented on parents' reactions when there was heavy rain, describing how parents would often show up at the school to take their children home. This was not the case prior to the disaster event. In Bitai, one informant explained how "In the first two years after the disaster, right after an earthquake many villagers would not be coming home for one or two nights. Now people are still scared, but they return to their life and activity after a few minutes" (Female, 30s, Bitai). In spite of this, villagers continued to prefer to reside in their respective village when questioned on whether or not they would consider relocating if given the opportunity. Their primary reasons included in order to maintain access to livelihood and because of their strong attachment to the land by associated generational history. While the first reason has already been discussed, the latter two will be described in later sections.

6.2.3.2 Risk and preparedness

As displayed in the TDMRC simulation map (Appendix Four), natural hazard risk was prevalent across many of the cases. At the same time, due to tsunami recovery efforts, disaster preparedness was a key element of safety across all of the cases. Conceptually, both of these variables of risk and preparedness contribute to the idea of disaster risk reduction, which was described early on in the paper as a component of holistic recovery. Levels of risk and preparedness were observed across the cases as described in Chapter Four. Neheun Compound had minimal risk and no preparedness. Gampong Baro had minimal risk and no preparedness, but was considering relocating back to an area of high risk. Panteriek had moderate risk and no preparedness, as villagers spoke of their new location as having no risk from hazard simply due to their distance from the main coast (ocean). Bitai and Lampulo had high risk, though Bitai had significantly more evacuation signage and level of preparedness compared to Lampulo.

The reason for challenges in achieving high levels of preparedness include the strong belief that their fate was in the hands of a far greater power - God. Findings across all of the cases indicate that notions of safety were strongly linked to religion, which is not surprising given the religious context of the region. As described above, for the most part, awareness of preparedness measures was prevalent to some extent across all of the communities. However, the belief that the future was in God's hands made the internalization of risk reduction measures challenging. For example, when inquiring from an informant or community member on topics related to preparedness, it was not uncommon for explanations like the following:

Whatever that you build for disaster preparedness - it comes back to Allah. If an earthquake shakes an escape building, it will all fall. So why does it matter? Sigh. It's like this sister - it's all about Allah's will. Yes, we have the directions and signs on where to go. But, you can't imagine how many kilometres away that is. It is whether Allah wants to save you or not, that's what it comes down to. (Male, 50s, Bitai)

6.3. Built environment influences

As demonstrated through the location-based characteristics, the physical location of the cases was a key factor in resettlement and recovery success. However, qualitative findings also show that there are other place-based influences at work, seemingly unrelated to physical location. This will be described here within the umbrella of built environment. Built environment is explored through three distinct themes - sociability, identity and belonging - that were prevalent across discussions related to the communities' interactions and meanings constructed with their respective places.

6.3.1. Sociability

Findings indicate that the essence of each community is strongly associated with its internal social fabric. This fabric consists of patterns of social relations that are occupying a particular space and determine the sociability of that particular space. Qualitative data analysis across the cases shows that the ability to engage in social relations played a key role in successful long-term resettlement.

6.3.1.1. Impact of housing on social structure

Few community members discussed quality of housing across the cases. Rather, the vast majority appeared to have come to terms with their house. What was brought up and had

become important in respect to housing was the impact that it was having in their communities in respect to social structures. Social structures in the context of this discussion can be understood as patterned relationships existing between members of a community. Based on interview responses, changes in social structures were strongly associated with the standardization of housing. This was primarily through changes in the way inequalities had become visible or invisible through housing.

A comparison of three of the cases can show how the standardization of housing has impacted the placeness of the communities and what it has meant for community recovery. In the two not-moved cases, housing functioned to mask inequalities and remove social inequities, while in two of the moved cases, housing functioned to highlight inequities. Both of these impacts point to challenges in using physical infrastructure as an indicator or marker of community well-being.

In Lampulo, housing was described to have removed inequalities across the community. Areas that previously had poor quality of housing (i.e., Block 3) now had similar housing to other areas of Lampulo (i.e., Block 2). Though always within the village boundaries of Lampulo, areas were referred to and described as being the ‘outskirts’, ‘slums’, and ‘areas with illegal housing’, before the disaster and reconstruction efforts. Since then, residents of the former ‘slum’ areas expressed a renewed sense of betterment and community acceptance. For example,

Our condition is much nicer now... before this used to be a swamp and slum area. Now we see homes that look the same as ours in Block 1, 2, and 4, so we see ourselves as more equal in the community now. Before the disparity was very visible between us and them.... Now we are all considered part of the same community.” (Male, 50s, Lampulo)

At the same time, some of the wealthier blocks in Lampulo that were away from the coast had a mixture of NGO housing and previous traditional large houses, adding to the unification of social structures through a perception of equality. For example,

The biggest impact of the tsunami here is that it has made the whole community of Lampulo as equals now. Before, the poor only had wooden houses and only the rich had concrete houses. It was obvious. Now, at minimum everyone has a NGO house... And they can be rich or poor. (Male, 60s, Lampulo)

Similar impacts of housing were prevalent in Bitai. Bitai has been described as the village case with the most impressive houses in terms of structure, quality and design. However, unlike Lampulo, the facades of the houses in Bitai were functioning to mask the poverty inside

the walls. Previously, the condition of a community member's family was visible by the structure of their home (i.e., makeshift wooden structures vs. brick homes). As several key informant noted, now there were notable difficulties in determining which households were faring better or worse, which had implications within and beyond village affairs (i.e., determining who truly required assistance from government assistance schemes). While, like Lampulo, housing may have functioned to remove inequities, as described in Chapter Four, what was more often reported was that it had negatively impacted the community's attitudes toward helping each other. For example, with the poverty hidden, community members were less inclined to probe into the living conditions of fellow neighbours. For example,

If you see the houses and equipment in their houses, you won't believe they are poor. There are many with 40,000 Rp income per day, and not knowing if they will have a job tomorrow. They have equipment in their home from selling their Mahr³⁵ gold... so they have a TV from that... Before it was obvious who was rich and who was poor, because there were many wooden houses before. Now, it is only if you are close with him or her that you can know they if they are suffering - for example, when people come to me asking medicine for themselves and are shy to inform me that they are not able to afford it at the pharmacy. (Female, 30s, Bitai)

On the other hand, in the case of Panteriek Compound and Neheun Compound, the renovations described in Chapter Four were starting to highlight inequalities (for example, some households had started to develop second stories and other extensions to their houses). While in the case of Lampulo, people spoke of the housing having unified the community, those in Panteriek and Neheun Compound spoke of the housing to having led to social stratification instead. At the same time, with houses higher on the hill selling for more money because of the view, community members living in the lower blocks spoke of how they were assumed to be less prosperous within the community, regardless of their true economic situation.

6.3.1.2. Gender sensitivity

Relocation had strong implications in regards to gender sensitivity. While community members of the non-moved cases did not speak of negative gender implications of residing in their community, these came up in focus group discussions with females in all of the moved

³⁵ Mahr has been translated in the glossary as a mandatory requirement for all Muslim marriages. Specifically, the *mahr* is a mandatory amount of money or possessions that are paid by the groom to the bride in a Muslim marriage. The *mahr* is agreed upon by the bride and is for exclusive use by the bride.

cases, but most significantly in Neheun Compound and Gampong Baro. Many women from these two cases spoke of the new location having impacted their relationships with their husbands. Phrases like, “I only see my husband at night now” and “my husband and I are separated for a long time since living here” were highly prevalent in both cases. Furthermore, in all of the moved cases, priority for finding a stable livelihood was placed on the male member of the household and ambitions of the females were expressed as secondary or unimportant. For example, one woman explained:

In our old villages, it was very common for the women to work, but not here. Maybe less than 20% of the women here are working, and the ones who are, also have husbands working. There are very few cases here where the wife is working and the husband is not, because it creates jealousy when the woman is gone all day. And the women don't want their husbands to spend all day here with all of the other women around. You know? (Female, 40s, Neheun Compound)

This was in contrast to the equal responsibility that they were used to in their previous villages, and which was visible in Lampulo. There, women continued to play an active role in supporting their household, whether through traditional activities or otherwise. For example, female-driven home industries and female involvement in village affairs were visible and spoken about in discussions conducted in Lampulo. During the female focus group, participants described the easy access to the village office and village leadership, along with an awareness of village initiatives. This access was unlike any of the other cases.

We are very active in supporting [the village chief]. When he does exhibits of our village...we help and give our input in opening a stand. And when there is this kind of exhibition some of our women will stand guard, even until the late night. We will also help him in preparing the presentation... without any pay because there is no budget. (Female, 40s, Lampulo).

The dialogue between the village leaders and the women during the resettlement process in Lampulo was also described in a similar manner. When asked of their resettlement experience, the women in Lampulo described an ongoing process of getting information, voicing needs and expressing concerns with the village leaders. This is in contrast to the other ‘participatory’ case, Gampong Baro, where women played more of a passive role in the resettlement in terms of engagement with the village leaders on specific resettlement concerns.

6.3.1.3. Availability of gathering places

Observations on social interaction point to the importance of community design in enabling community gatherings and consequently, stronger attachments. For the moved cases, this meant the creation of formal or informal gathering places within the settlement, while for the not-moved cases this meant maintaining familiar gathering places. As described by other researchers, the neighbourhood is an important space for social activity and social relations in Aceh (Samuels, 2010).

The powerful impact of community design was most strongly displayed in the case of Neheun Compound. Because the design of Neheun Compound was on such an incline, community members would interact mostly with others from their own respective incline levels. Community members from the lowest level would be unlikely to ever go up to the high levels, which resulted in a very fractured community. This separation was exacerbated among females, as those residing at the higher levels rarely went down to lower levels. The few occasions when they would go down would be to drop off or pick up their children or to attain food. Even with that, it was mostly only common in those households in which females had a motorbike. With little public space, the women complained of a lack of shaded areas in the hot sun, even outside their own houses. A group of women complained, “We tan too much here. The sun is so strong up here, so we stay inside”. Discussions included words like “trapped”, “useless”, “bored”, and other general phrases on dissatisfaction.

One of the only meeting spaces in Neheun Compound was the mosque built at the entrance of the compound, at the lowest point on the hillside. However, females were often excluded from gatherings at the mosque. Because the village consisted of both Muslim and Buddhist residents, the Buddhist population did not have a common gathering place. Women, in particular, expressed limited social interaction simply due to the lack of spaces for human encounter. A small scale initiative by some of the women in the higher block (Block F and G) points to the impact that gathering space can have on well-being through sense of place. These women had taken the initiative to build a small shaded hut in which to meet for weekly religious recitations (see Figure 6.3). Conversations with a group of about 20 women from the two blocks that were using the hut prior to the recitations suggested greater satisfaction than conversations with females from any of the other blocks. Women were happy, energetic, and active in sharing local gossip.



Figure 6.3. Shaded hut initiative by women in Block F in Neheun Compound

Source: Photograph by author (D. Panjwani)

The situation of Neheun Compound is in contrast to Panteriek Compound, which was built on flat land, with houses arranged in a tightly organized manner. The layout was such that informal gatherings at different spots in the compound were commonly observed. While participating in some of these informal gathering, women would commonly ask of neighbours, wait for one another, and catch up on the day's events. While the design did not take on traditional elements, like wooden porches and trees, the layout was conducive to interactions that were common in traditional villages because houses were placed in close proximity to each other. Dedicated spaces, such as a basketball field and small coffee stands, provided a gathering place for community members to come together and develop new bonds. While a football field was available in Neheun Compound, again, it was at the bottom of the compound and out of easy reach for youth living in the higher blocks.

From discussions with community members and key informants in both of these villages, it was apparent that the leadership in Panteriek Compound was actively encouraging group gatherings such as Quranic recitation classes and block meetings, while in Neheun Compound it was at the initiative of community members to organize the same. The challenge in Neheun

Compound was the lack of available meeting place and communication channels to successfully hold these gathering. One woman in Neheun Compound described her previous house as being big enough to have hosted such gatherings, but the new designs being hardly enough for her family's belongings. While the block chiefs in Panteriek Compound were very much aware of upcoming gatherings happening for the week, the leadership in Neheun Compound was less so.

If we look further, part of the animosity expressed for Panteriek Compound by members of Old Panteriek was related to the disappearance of the old community's gathering space (even though it was owned by the Mayor). For example:

That area there used to be swamp and land, and some of the area used to have a football field there before, but now it has disappeared because of the new construction. The mayor told us that they would build a new football field for the community, but it hasn't been done yet. So that is a big problem we are facing. (Male, 40s, Old Panteriek)

Similarly to community members in Neheun Compound, while they all complimented the housing, community members of Bitai frequently spoke of negative implications of a new housing design that did not allow for an open concept incorporating areas of gathering space. For example, many described with nostalgia and deep imagery how they would sit on large wooden porches under large trees and share in each other's lives in a way that was no longer common. Their memory of time before the disaster was strongly embedded in the built environment (see Figure 6.4). For example,

Maybe because we lost so many, or maybe because of the style of houses, we have become a different community now. Some don't want to marry, many are not as cheerful as they used to be. It is silent now everywhere. And, it is like a compound, so tidy and organized. I mean, before there were wooden houses facing each other and we would be interacting every day, all day. (Male, 50s, Bitai)

Bitai is more organized than the other villages... Before we didn't have so many arranged houses, some didn't even have a road going to the houses. So we would have to pass through the back of other houses to get to ours and we would always be talking to our neighbours. Maybe that caused the socialization to be stronger... We were a tighter community then, but now we are independent... I mean, we do socialize, but not like before with the terraces, big trees, there would always be people hanging out in the shade under the trees. Now look around, there is none of that (Female, 40s, Bitai).

We are living in another area, it does not look or feel like our own village. Before, there were big trees and wooden houses and we are always gathering and talking and sitting around, but not anymore. Now we are living in a new place that does not look like our own... All of our homes are the same now... It is like we are living in a government compound, but we are not government officers [laughter]. (Female, 60s, Bitai)

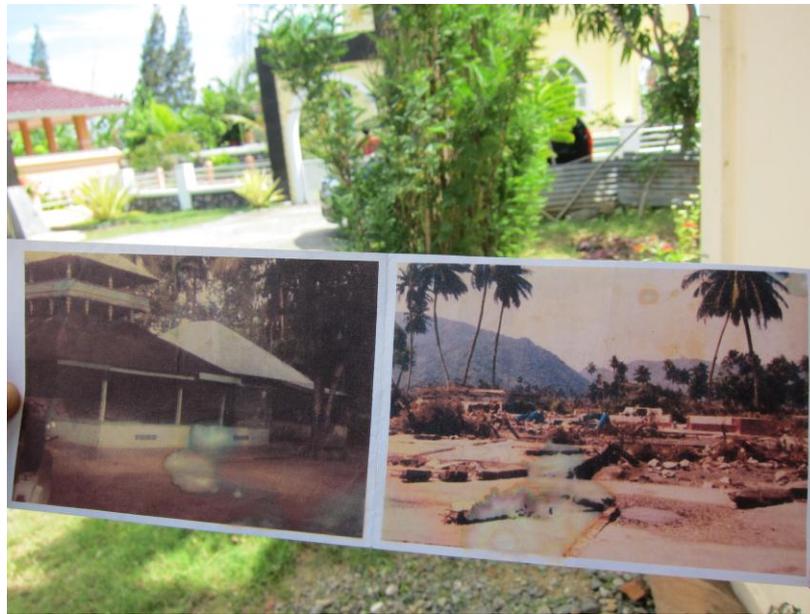


Figure 6.4. Elderly woman sharing photos of the same location over time

Left photograph is before tsunami (notice mature green trees); right photograph is soon after the tsunami; and in the background is the state of the location at time of fieldwork.

Source: Photograph by author (D. Panjwani)

These types of discussions were less common in Lampulo. With the fish market and port restored, familiar meeting grounds were available to community members. However, with multiple houses being built on a lot that previously had only one house, there was limited open space. For example, “We used to have empty land in front of our houses where our children would be playing and the mother watching them...not anymore...” (Male, 50s, Lampulo). Similarly, youth of Lampulo spoke of the loss of dedicated space for their peers to convene in the village and the impact this was having on their social relations and attitudes toward their community. For example:

We no longer have a tight group of youth in the community – we are not hanging out in the same way...Before the tsunami we had a small football field... well, we had empty land that we used for football field. It wasn't a proper one, just a makeshift one, but it was still there. After the tsunami, the area was no longer and houses were built on it... we think that maybe the owner of the land built houses on it.... So we no longer have that. Now we have to go to Futsal place and gather together there outside the community. Or now we go to coffee shops to hang out. One of us has a car wash station so now we hang out there too. We have to come up with new places to hang out together.... I think because of this we still know each other (youth), but not like before. We used to hang out

here as a group, but now we go out on our own and hope to bump into each other. (Male, 30s, Lampulo)

6.3.1.4. Internal system of dependencies and exchange

A stronger internal system of dependencies and exchange within the village was closely related to stronger sociability. From a resilience perspective, Acehnese have been described as using their social relationships and social networks to cope with disaster (Mahdi, 2009). Findings indicate that the importance of social support extends to the recovery process and into the long-term recovery. In particular, findings indicate that the resettlements with a stronger internal system of dependencies and exchange were more prosperous than those without.

Community members across the cases valued the ability to depend on each other. This dependence was a product of existing social relations prior to the disaster, but also contributed to the development of new social relations in the moved, mixed resettlements. In both instances, the dependence had strong positive implications on recovery and resettlement success.

Community members in Lampulo and Gampong Baro were able to re-establish dependencies based on strong trust and reciprocity across community members. In Gampong Baro, village leaders claimed that the entire community was blood-related in some way or form, similarly to what would have been typical across villages in generations past. This meant strong familiarity and a strong base of trust and reciprocity. In Lampulo, these dependences emerged as the same to some extent and also because community members were able to re-establish their unique role within the community, beyond livelihood. The sense of familiarity and being able to turn to a specific person known for a particular ‘thing’ supported this dependence – for example, the elder you go to for help carrying out a certain custom, or the “person you go to with a stomach bug” (Female, 30s, Lampulo). Lampulo was able to take advantage of the dependencies because residents still had their distinct roles in the community that they identified with before the disaster. Gampong Baro had lesser established dependencies because of its being displaced from its previous land, livelihood and purpose.

In stark contrast, Bitai had very little dependencies. Many described the people of Bitai as having become very independent and individualistic. Bitai had not rebuilt the internal connections in the same way that Lampulo or Gampong Baro had, and this had strong implications for the rebuilding of their communities’ social fabric.

We have so few elderly people that it is hard. For example, we have a tradition of giving blessing with rice... like if we have a new house we bless before entering. This is usually done by the elderly. Now we have to go to other villages to convince our relatives to come to our house to do the ceremony. Also, before, when delivering a baby, we used to get advice from the elderly... what to do, traditional medicines to use... Now we have to figure it out ourselves because all that are left are the youth... we don't support each other in the same way. (Female, 30s, Bitai).

Before the tsunami, even if we were struggling and not doing so well, our family would help. Now, if you don't have food to put on the table, it is the pressure of the husband to find a way to feed us. For example, before in my house, my sister, brother-in-law, parents, they were all chipping in and living together. Before, my parents would have the task to buy the food from the market, and we would take turns cooking. Now, it's all up to us. (Female, 20s, Bitai).

A strong reason why many community members were choosing to leave Neheun Compound was because their social network was elsewhere, and they had not been able to establish a similar network in Neheun Compound. Many expressed frustrations about the lack of relationships between community members. Females spoke of limited interactions with their neighbours. Words like “alone”, “lonely” and “bored” were prevalent in these discussions. Several of the male members repeatedly expressed the need to establish a trusting social fabric in Neheun Compound.

Formal and informal mechanisms

Re-establishing formal and/or informal mechanisms for the exchange of goods and services was described as being a catalyst for recovery. This was true for economic recovery, but also for the rebuilding of a culture of exchange and ongoing interaction that create a self-sustaining system.

While none of the villages except Lampulo had a market within the village, it was only in Neheun Compound that community members brought up its absence several times during focus group discussions and informal conversations. The lack of it was referenced to by many community members of Neheun Compound as having negative implications for the community. As described earlier, while the physical structure of a marketplace had been constructed in Neheun Compound, it was not being utilized due to it not being feasible to have a market there (see Figure 6.5). Possible reasons for this could include the difficult access due to the high elevation of the designated space and the limited supply and demand within the village. It was almost as though the physical structure being there reminded the community of its absence.



Figure 6.5. Unused marketplace in Neheun Compound

Source: Photograph by author (D. Panjwani)

A major difference observed between Neheun Compound in comparison to Panteriek Compound and Bitai was that the latter two had a number of formal places for the exchange of goods amongst community members. This contributed to their general ability to access goods and conduct their exchange that would be mutually beneficial. Examples included businesses such as corner stores, coffee shops, fruit and vegetable stands, and so forth. The exchange of goods was enabled by the design of the village, with Panteriek, Bitai and Lampulo being more conducive and Gampong Baro and Neheun Compound being less so.

As was more visible in some cases than others, informal places for the exchange and sharing of goods and services also emerged as a key factor of sociability. This informal exchange contributed to feelings of community through ongoing interaction. For example, forms of informal exchange that were common in traditional villages in the region were largely missing in discussions with community members of Neheun Compound, Bitai and Gampong Baro, while they were mentioned in discussions with Lampulo and Panteriek. Gampong Baro described their previous location having informal exchange (for example, the sharing of fish the villagers catch and the produce they pick), while their current location did not have anything similar due to limited local activity. Activities that would have traditionally been considered part

of community comradery had become formalized through payment. For instance, in describing transportation services in their current context in comparison to their old villages:

Living here, we spend all of our money on transport... It is really hard to get transport...especially for the ones who go to school and don't have a vehicle at home... Now we have to pay our neighbours to pick and drop off our children! Even if they are going to the school anyway. This would never have happened in our old village because we would help each other in these small tasks. But here they ask money to do it. But tell me, what choice do we have? (Female, 30s, Neheun Compound)

6.3.2. Identity

Alongside the formation of social norms that have just been discussed, the development of community identity was observed across the village cases. Identity is understood in this discussion to be distinctive characteristics that are shared by members of the community. Before discussing identity, we can refer to community composition as an element of identify. Qualitative findings indicate that community composition does contribute to the placeness of the cases through influence on community identity.

Specific composition characteristics strongly influenced the community identity that emerged in each of the cases. Only one of the cases - Gampong Baro - remained traditional in the sense that all villagers were native to the village (or there through marriage to a native). The other four villages varied in extent of ratio of new to original inhabitants. While Gampong Baro was at one extreme, Neheun Compound and Panteriek Compound were at the other extreme and had residents from a large number of different villages, of both Acehnese and Chinese ethnicity, and practicing Muslim or Buddhist religious practices. Panteriek Compound is a unique case as the new compound itself is largely diverse, but has been built in the very traditional village of Panteriek which has very much a native Acehnese Muslim population. Lampulo and Bitai both fall in the middle as traditional villages that lost many inhabitants and now are home to a significant proportion of newcomers.

6.3.2.1. Association and identification

The unique terrain of villages affected by the tsunami is characterized by distinct housing properties in each village, depending on the NGO that built in that particular village. It is hard to write on community identity in Aceh without discussing the role of this housing in creating or recreating community identities. Though most of the housing built conformed with the

mandatory 36m² squared measurement restriction imposed by BRR, each was branded by an NGO by roof design and/or exterior design, along with many other stylistic details. As described earlier, across the broader community, in many cases, villages were now associated with the NGO or donor that was most closely involved with the village. For example, Bitai was known as “Turkish Village”, Neheun Compound as “NGO-A”, and Panteriek Compound as “NGO-B”. However, Gampong Baro and Lampulo were most commonly referred to by their true name.

This NGO branding influenced identity in each of the cases in a unique way. In Bitai, the housing reinforced their identity due to the strong relevance and reminder of their community history. Having this attachment to their ancestry provided a greater appreciation for the housing, in a way that was not present in any of the other cases. The significance of the housing reinforced a strong commitment to remaining on the land, in spite of limited opportunity and remaining hazard risk. However, outside of housing, the changes to roads and infrastructure also influenced identity in Bitai. For example: “Before we considered ourselves a village. But now, we are considered by others as part of the city of Banda Aceh, because of the new roads connecting us to the city. Bitai is like a compound of the city now” (Male, 40s, Bitai).

On the other hand, in Neheun Compound and Panteriek Compound, the housing was described as providing no deep meaning to the community. It was evident that it was simply thought of as shelter rather than a home. Housing also distinguished smaller communities from the broader community. For example, in Panteriek Compound, village members themselves referred to their community as "NGO-B", in order to separate themselves from the village of Panteriek, even though they were officially a part of it. As such, it contributed to the development of their own identity separate to that of the Panteriek village. The leadership of Panteriek Compound appears to encourage this. For example, “I have organized people to make sure they say ‘we are from [NGO-B] Panteriek’ (Male, 50s, Panteriek Compound). However, this exacerbated tensions with the broader Old Panteriek. In addition, the identity of the traditional community of Panteriek was described by Old Panteriek members to be in jeopardy. For example, there were many occurrences of phrases along the lines of the following: “We are losing our identity because there are 700 families there and only 300 here. We are losing the identity of Panteriek” (Male, 40s, Old Panteriek).

Very few knew of Gampong Baro as “NGO-C Village”; the village elders of Gampong Baro were most adamant on maintaining the identity of their village by their name. As described

in their resettlement process in Chapter Four, at the time of settling on the new land, the community was successful at maintaining its own name and boundaries even though it was joining land belonging to another community. Some interviewees noted that they would have long abandoned the land had their village name not been assigned to it. Similarly to Gampong Baro there was hardly any reference to Lampulo by anything but its name. Evident through the extent of community activities and village paraphernalia, the village office in Lampulo was strong in maintaining its true name. Though NGO-H housing was most prevalent in Lampulo, there are small numbers of other NGOs building in the village. Perhaps for this reason as well, Lampulo was simply known by its true name.

6.3.2.2. Unity and acceptance

Some of the cases show the development of community identity was in part attributed to a community's unity and acceptance. Analyzing and comparing elements of unity and acceptance across the cases provided insights into resettlement success.

Composition

A comparison of the two non-moved cases (with similar characteristics of newcomers and originals) point to some interesting observations on identity and community recovery. Several interviewees in both of these villages spoke at length on the negative impacts of newcomers on their community identity. It was common for villagers in Lampulo and Bitai to refer to community members as either "*baro*" meaning "new" or "*asli*" meaning "original". This terminology was almost twice as prevalent in interviews in Bitai than in Lampulo indicative of stronger distinctions between the two groups of residents. What distinguished one from the other though, was that Bitai villagers spoke of these impacts in a strong negative manner, while Lampulo spoke of them in an active and more positive manner. Implications of the division or inclusion extended to impacts on unity of the community as a whole. For example, many of the original residents of Bitai had taken the approach of separating themselves from the newcomers in regards to socialization and cultural activities. In Lampulo, there seemed to be more of an effort in integrating newcomers within the village, particularly in opinions expressed at the village office. The integration of newcomers made it possible to have community consensus on the allocation of budgets, while in Bitai, the lack of consensus had led to dispersing funds on a household basis. For example:

Community members don't agree on the same thing anymore... We were given a rolling grant, but had to return it to the village, because there was no consensus in the village on where to spend it, so they ended up just giving 500,000 Rp per family. That is why there is no economic development here... The budget is supposed to go to businesses, but because of different opinions, they only distributed a lump sum to each resident. For example, we have ideas for businesses like the rental of wedding equipment. That kind of business could be done by members of our community, but it seems like most people here don't think like that. (Male, 30s, Bitai)

The stronger unity in Lampulo, on the other hand, contributed to a sense of bettering their village through actively and mutually engaging with opportunities that had the potential to directly do this (e.g., small business loans). The unity in Lampulo was visible even to a very personal level. For example, some women in the village reported a high pattern of neighbours marrying each other if they had both lost a spouse. The justification for this included, "it minimizes the risk, because they already know each other" (Female, 40s, Lampulo).

A comparison of both of the mixed moved cases indicate that specific factors had profound impacts on unity within the broader community. For example, incorporating a handful of ex-combatants into Neheun Compound enabled better integration of the new resettled population with the broader community of Neheun. Perhaps because of their familiarity with the region, many of the elected leaders of Neheun Compound were also ex-combatants. Through conversations with these leaders, it appeared that leadership style was more forceful and exclusive than in other villages.

On the other hand, with a high percentage of government officers being allocated housing in Panteriek Compound, levels of education were higher. A few of the elected leaders of the compound were from this population. Levels of acceptance and tolerance were also higher here, perhaps as a consequence. For example, to take an excerpt from a conversation from block leader: "I am very proud of diversity. Each of us play an important role in society. It is important to think this way with today's globalization" (Male, 60s, Panteriek Compound). Another stated, "We are forming a new identity in this new location, and we have a vision of tolerance and flexibility" (Male, 50s, Panteriek Compound). Similarly, many more of the discussions in Panteriek Compound centred on themes related to adaptation. In fact, the word 'adaptation' came up in many of the interviews with key informants in Panteriek, where there was no mention of the word in any of the other village cases. One informant attributed faster recovery in Panteriek Compound because of "the heterogeneity, which gives the spirit that each

individual has their own unique role to develop in order to succeed" (Male, 40s, Panteriek Compound).

Shared solidarity

Neheun Compound and Panteriek had similar population characteristics in that they were both composed of members from many different village communities. While Neheun Compound demonstrated the lack of a distinct identity, Panteriek compound pointed to how a new mixed resettlement is able to take on an own new identity. Findings alluded to the strong identity of Panteriek to be in large part due to its community's unity. Community members referred to a strong solidarity among inhabitants of the compound during group discussions. This was in stark contrast to discussions around similar topics with community members of Neheun Compound, where the conversation centred around the disjointedness of the community.

To understand this further, we can draw attention to the unique situation of Panteriek Compound and the broader village of Panteriek - referred to earlier as Old Panteriek. As described in Chapter Four, due to their many differences, strong tensions existed between the two communities. Analyses of discussions with Panteriek Compound members and Old Panteriek members, coupled with observational data of the interactions between the two sub-communities, point to insights on how the tensions contributed to the unique development of strong unity in Panteriek Compound. For example, villagers in Panteriek Compound had to band and form a strong unit to have their voice heard in the broader village. In describing the position of youth leader of Panteriek:

At the beginning they chose a youth leader from the new community to represent all of Panteriek. But this is because there was not enough attendance at the meeting - of course there wouldn't be because there are so many more of them in the new compound. But we did protesting and succeeded in ensuring that the youth leader is someone from the original community.... They do their own youth gatherings now, we aren't involved in that... like sports. (Male, 20s, Old Panteriek).

The village chief and secretary of Panteriek as a whole (both from the Old community) played a strong role in enabling solidarity by encouraging active involvement with governance matters, even though the majority of the old community did not associate with members of the new compound. While some people in the old community did not appreciate this, there was not much they could do to limit the perspective of the leadership. For example:

We already have tight rules, but they don't listen. For example, if there is a death, there should be no celebration or event for 7 days, but they [the new compound] are still playing dominos out on the streets. They get warnings from us but they protest that they can't follow such old rules. They call the old community arrogant... There is no solution and there are existing perceptions. The new thinks the old are arrogant, and the old thinks the new are rebellious... The current chief is too flexible with the newcomers. He doesn't involve the old community as much with everything. I think he needs to be more strict with them... Maybe it is better if the newcomers would act like newcomers. (Male, 20s, Old Panteriek)

6.3.2.3. Establishing social norms and behaviour

An important element defining the identity of each of the resettlements was the establishment of acceptable community social norms. Social norms here will be limited in definition to the spectrum of formal or informal rules and expectations that exist within each community. This discussion looks at the cases as small groups within the larger context of cultural and social change in Aceh explored in Chapter Four. However, it does not look at the development of norms as being separate from or in line with these broader cultural and societal expectations. While the role of NGOs and external actors in establishing social norms was explored, there was insufficient data to draw findings on this. Rather, the role of local leadership emerged in data as being of notable significance.

Largely because of its composition, Gampong Baro was the only case that had a fairly smooth process of re-establishing previous social norms. The strong traditional nature of the community and similar perspective of the leadership played a key role in this. As such, the post-disaster community had maintained the same values and beliefs across community members. This was possible because all members of the community were known to each other, with the exception of new spouses and children.

The other four cases, however, provide some interesting insights by comparison. On the basis of composition, it was assumed that both of the new settlements - Panteriek Compound and Neheun Compound - would struggle in establishing acceptable social norms, while both of the old settlements - Lampulo and Bitai - would be closer along in doing the same. While it was true that the non-moved cases had previous social norms associated with their location, findings show that this did not mean they were able to re-establish these social norms. What interviews indicated was that it was the communities of Panteriek Compound and Lampulo that had formed stronger social norms, while Neheun Compound and Bitai were struggling to do the same.

Different characteristics contributed to this and can be displayed through the following comparisons and examples within.

Re-establishing norms

All but one of the block chiefs in Neheun Compound spoke at length of challenges in domestic problems, the abiding of rules and opposing perspectives on social habits. For example, one explained, "We mostly concern ourselves with the domestic conflicts... there are too many domestic problems, so much so that they come knocking on my door at night. That is why no one wants to be the chief of block here." Another spoke of visitors coming to the village: "At first, everyone was reporting the Chief of Block when they had guests and visitors. Then they sold their house to outsiders and we are not informed of anything. That is not how it should be done". With these issues remaining a main priority and a source of frustration for the leaders, other matters were expressed as secondary or non-existent. At the same time, many leaders were keen to prescribe and institute strict rules; however, it seemed that many villagers were not so keen to abide by them, or they were not even aware of the rules and/or 'norm'. There seemed to be a tendency for those who were not in sync with the rules to be excluded from community gatherings. For example:

At the beginning, I was a guard at the village gate because not many people were coming to the cleaning together day. I would stand at the gate and would not let people leave the compound so that they would stay and join. I don't have to do that anymore because now people are realizing that this is one community. Now 70-80% of the community is aware of the cleaning together day. But even still, if someone is not coming, we go to their house. (Male, 30s, Neheun Compound)

In contrast, while several of the block chiefs of Panteriek Compound did speak of similar challenges including domestic conflict, the abiding of rules, and prevalence of new social habits, it was spoken about as simply one of many larger challenges of the resettlement. Instead, challenges were mostly linked to livelihood and service delivery. Even though similar challenges were raised, they were more often done with positive expression. Some examples include:

People are mixing together and learning different habits from each other...like how to make a green garden and plants... they can observe how other take care of their home and it gives them a new way of thinking about this... and over time not only are the homes starting to look nicer but we are becoming more united. (Male, 40s, Old Panteriek)

At the start there was a lot of misunderstanding of rules because they travel by word of mouth and the community is so heterogenic that each person bring his own ego. There is the rule that newcomers should report to the block chief, but some residents don't do this, they don't follow this or feel that there is no need for the newcomer to report. You see, the ones living here are not only the pious ones, but people with mixed beliefs, visions and ideas. But the issues and extent are changing over time. First there were more cases, but there is more anticipation now. At the beginning, each member of the community would bring their ego... over time it is getting much better and we have come to a similar understanding. (Male, 50s, Panteriek Compound)

The community of Panteriek was trying to build their own expectations and ways of doing through a combination of different traditions from different villages. As a block chief remarked, "There is no need for conflict.... I mean generally, we all have the same cultures. For example, the *Maulid* and *Korban*...the differences in us are things like what should the food be for dessert!" (Male, 50s, Panteriek Compound). This was quite different from Neheun Compound. Attendance at the *Maulid* celebration in Neheun Compound was indicative that key leaders in Neheun Compound were still firm in their perspective of the "right" tradition to follow, and that many community members were not engaged with the event in the way they would have been traditionally.

While the main social norms brought up by leaders in Panteriek and Neheun Compound concerned domestic conflict and the abiding of laws, these concerns were less commonly raised in Lampulo and Bitai. In the cases when they were referenced, it was clear that Lampulo had a system in place to attend to the issues, whereas Bitai was more passive about it. For example, the village office in Lampulo required monthly reporting from block chiefs on social behaviours. As a key informant from the office explained,

Block chiefs make a report to the chief of village on a monthly basis on things like gambling and marital problems. If we can't solve the problem here, then we will send the issue to the Shariah police....Before there was the Shariah law, we would be able to solve all of the problems in the village (Male, 50s, Lampulo).

The main emphasis on social norms in Lampulo and Bitai was surrounding the place of newcomers and what this meant for re-establishing previous social expectations in their communities. Even though both Lampulo and Bitai had a large number of newcomers to their community, the development of these expectations was quite different between the two and had implications on the identity and social recovery of each of the cases. The original community members of Bitai were very concerned by the progressive loss of customs and traditions, which

had defined their place. For example, several key informants and original villagers of Bitai spoke nostalgically about previously being known as a strong religious community with frequent religious and cultural events, and having lost that identity since the resettlement. The leadership in Bitai however did not appear as concerned. In contrast, it was the leadership of Lampulo that was adamant and firm about re-establishing previous norms, whereas there was little mention of this from the community.

6.3.3. Belonging

While elements of belonging have appeared within discussions of sociability and identity, the discussion that follows will bring together two characteristics related to place that emerged as key factors in influencing belonging within the cases: feelings of permanence and the presence of commemorative symbols.

6.3.3.1. Permanence

Feelings of permanence or the lack thereof were a strong theme that emerged in discussion across all of the cases. These feelings were manifested through two main factors: generational history and long-term outlook. Villagers in Lampulo, Bitai and Panteriek Compound all expressed strong intentions of remaining in their respective villages indefinitely. However, this intention was largely missing in discussions in Gampong Baro and Neheun Compound, where both communities spoke of their resettlement as something that was still in progress while they explored a more permanent plan. In the case of Gampong Baro, this was a return to their previous land, while in Neheun Compound it remained undirected.

Generational history associated with land

In the context of Aceh, traditional villages had a strong generational history that were spoken of with pride. A prime example of this in the current day was apparent in the old community of Panteriek. As described earlier, the majority of the informants in the old community of Panteriek spoke of generations of family members living in the same village and on the same plot of land. Similarly to conversations with Old Panteriek, community members of Lampulo and Bitai spoke highly of their strong attachment to their land in relation to many of the themes that contributed to place. The personal and emotional attachment nurtured a sense of ownership and responsibility toward the land and several original community members

interviewed spoke of a 'duty' to remain on the land out of respect for generations before them. These sentiments exceeded fears and hazard risks associated with the location. For example, "We are never moving away from here, because it is all we have left of our families. This land". (Male, 20s, Bitai).

We are born here, our parents were born here, and their parents were born here. This is our land. We choose to be here and we will remain here even if we are given other land to move to. We will choose to stay here. (Male, 20s, Lampulo)

At first, people wanted to sell their land because of the trauma... no one wanted to come back at first. But they spend some time with their families to get over the trauma and now they are back. This is our family land, they realize, how can they let it go? (Male, 50s, Lampulo).

The idea of remaining true to their history was spoken of as a powerful enabler of rebuilding a positive atmosphere in their community. For original inhabitants in both Lampulo and Bitai, there was no questioning their belonging to the community because of their history, even when they spoke of the cultural changes induced by the addition of newcomers.

The failures of Gampong Baro are largely because of the villagers' generational history associated with their previous location, and the lack of any attachment to their current location. As all of their livelihood investments are on their previous location, their relationship with the current location was quite different. Several community members described it as being solely a "place to sleep" and nothing more. Findings indicate that the community of Gampong Baro were determined to find a way to rebuild their community back on their previous land. These types of sentiments were even more pronounced in Neheun Compound, where villagers spoke of no real significance attached to their current locations, with comments like, "...the children don't want to stay here after they have grown up - why would they?" (Female, 60s, Neheun Compound).

Long-term outlook

While generational history associated with land is something that cannot be created in a new settlement, findings point to the role of long-term outlook of a particular community in enabling a sense of belonging. This was most visible in the case of Panteriek Compound. Members of the compound had an acceptance that this was their new home and that they must make of it what they can. With this intention of staying came greater investment into material

property. For example, these included material investments into homes and gardens across the compound. Similar investments were less pervasive in the other two moved cases. Many members of Neheun Compound were of two minds whether to remain in the village or to sell their home and find a rental house closer to their livelihoods. Gampong Baro was plotting to find a way to return to the old land. Therefore, both Neheun Compound and Gampong Baro were putting limited budget into community investments. As described by a key government expert:

In Bitai, most of the budget is spent on giving incentives...money...to staff. For example, in the Pushyando they have some PKK women to help support it and they are paying an honorarium to these women for the help... In Lampulo, the priority is on the physical, something they can use. For example, drainage... they are tired of waiting for the water company so they are using money for pipes to water the land. They are more concerned with public service.” (Male, 50s, Government).

6.3.3.2. Commemorative symbols

Unlike in the not-moved cases, in the moved cases, there were few references to anything that was connecting community members to the land they occupied. However, what stood out in Gampong Baro in comparison to the Panteriek and Neheun Compound was the significance that commemorative symbols could have on building connection to a new location. As described earlier, Gampong Baro had a plaque that contained the names of all of the victims of the tsunami from their village mounted on a pillar. Situated in between the village office and the local mosque, many villagers spoke of it fondly, having memorized the places where their own loved ones were listed.

Members of Lampulo spoke of another commemorative symbol. In Block 1 of Lampulo, the village had left a boat on a house as a reminder of the power of the wave (see Figure 6.6). The site was being preserved and marketed as a tourist spot, with photographs of the boat being used for merchandise outside of the village. Though the village leaders raved about the site, many locals had mixed feelings toward it. Some spoke of it as a reminder of the fear of that day, while others saw it as a reminder of their good fortune to have survived the event. One of the women living next door to the site described in detail how that same boat had saved her life, along with that of her five children, the youngest being 5 months. She spoke with sadness of how her husband did not make it onto the boat, and was consumed by the wave.



Figure 6.6. Lampulo commemorative symbol: boat on a house

Source: Photograph by author (D. Panjwani)

6.4. Summary

This chapter implemented a lens of place to analyze and explore resettlement and recovery in the five village cases. Major findings are illustrated in Figure 6.7 below, which is an extension of Figure 6.1 that was displayed at the beginning of this chapter. As indicated in both Figure 6.1 earlier, and Figure 6.7 below, recovery success in the five cases was influenced by location and built environment. While location influences (livelihood, connectivity and safety) were largely tangible in nature, built environment influences (sociability, identity and belonging) were both intangible and tangible in nature. Comparisons carried out in this chapter across the cases highlighted that location and built environment impacted recovery through numerous mechanisms, such as access to traditional livelihood activities, the availability of gathering places and commemorative reminders; these mechanisms are highlighted in Figure 6.7. Linkages between mechanisms and impact on recovery outcomes (listed as the capabilities outlined in Chapter Five) are also indicated in Figure 6.7. The analysis demonstrated that the influence of many of the mechanisms described above could be mediated by leadership, proximity and/or community composition. In Figure 6.7 these three factors have been labelled as 'mediators' as they were able to positively or negatively shape how the mechanisms played out and influence

the 'place potential' of a community regardless of resettlement pattern in all of the cases. For example, a more inclusive leadership style among the block leaders in Panteriek Compound played a crucial role in building a community identity based on unity, acceptance and the creation of new social norms. This was in spite of ongoing tensions with the broader village. A more prescriptive leadership style by block leaders in Neheun Compound limited the creation of a community identity and instead led to the marginalization of groups. An overall more detached leadership style in Bitai jeopardized the existing community identity that was strongly valued by original community members.

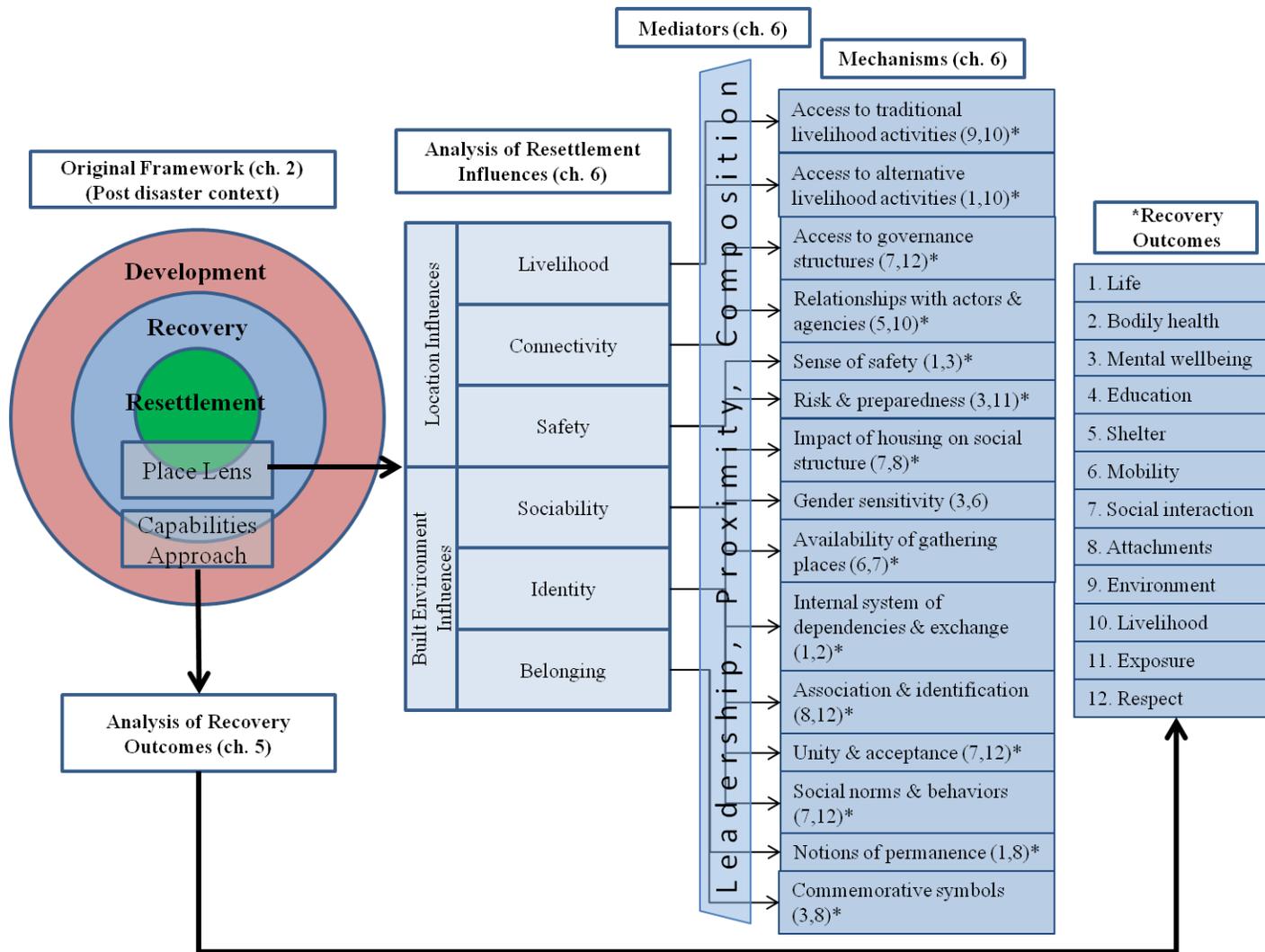


Figure 6.7. Summary of placeness analysis

In some cases, proximity was taken advantage of and/or distance was overcome in ensuring positive recovery outcomes. For example, in Lampulo, proximity to the coast was an important factor in enabling access to traditional livelihoods, and proximity to international aid actors was crucial for accessing funds for non-traditional livelihood activities. In Gampong Baro, community members had found a way to pursue livelihood activities (i.e., by travelling via raft to their old location) and develop beneficial relationships with international aid actors (by actively approaching actors) in spite of their location being away from the coast. Community composition shaped the placeness of the cases most profoundly through influencing built environment mechanisms. For example, the large number of newcomers in Bitai had led to greater independence among community members and difficulties in re-establishing an internal system of dependencies and exchange. This in turn had contributed toward more disparity across the community. In Gampong Baro, a composition of mostly original community members allowed for a strong system of dependencies and exchange that allowed for resources in the village being directed toward mutual gain.

Overall, findings discussed in this chapter and captured by Figure 6.7 provided explanations for the variations in recovery outcomes across the cases. The findings point to possible contributions and implications for understanding and planning for resettlement after disaster; these will be considered in the next and final chapter of this dissertation, Chapter Seven.

CHAPTER SEVEN: CONCLUSIONS

This chapter, as a conclusion for this dissertation, will first summarize notable findings of this study within the research questions set out in Chapter One. The chapter will next discuss the main contributions of this study to existing literatures, followed by policy and practice implications of the findings. The chapter will conclude by acknowledging the limitations of this study and identify future research opportunities.

7.1. Summary of research findings

This study explored disaster recovery across five village cases in Aceh, Indonesia. The purpose of the exploration was to understand factors that influenced the successful resettlement of communities six years after the devastating 2004 Indian Ocean tsunami. The central research question that was explored through this dissertation was the following: In the context of post-disaster recovery in Aceh, what are some of the key factors influencing the successful recovery of communities after six years (i.e., 2004 to 2011)? The four sub-questions addressed included the following: 1) How can long-term holistic community disaster recovery be assessed across cases? 2) What are some of the key factors that influence long-term holistic community disaster recovery at the village level? 3) How do resettlement patterns enable or hinder development? 4) How are attributes of place addressed in the various resettlement patterns?

Using a mixed methods comparative case study design, this study targeted five cases in Banda Aceh and Aceh Besar that represented differences in resettlement process (participation and non-participation) and pattern (resettlement to a new location and resettlement in previous location). This study draws on fieldwork across these communities – Bitai, Gampong Baro, Lampulo, Neheun Compound and Panteriek Compound – six years after the disaster. Findings were developed based on data collected over a period of six months, six plus years after the disaster. Data collection methods included key informant interviews (i.e., with village chief, midwife, *imam*, and so on), key expert interviews (i.e., with members of government, non-governmental organizations, and academia), focus group discussions with community members, detailed observations, and secondary data collection.

Findings provided unique empirical insights into the complexities associated with post-disaster resettlement and what this meant for community recovery outcomes. In the absence of a

generally accepted tool to measure community disaster recovery, this research developed its own methodological tool as a viable way to conduct a holistic assessment of recovery outcomes. The tool was developed by implementing a capabilities approach (see Sen, 2005), through a series of steps that eventually led to a multi-dimensional recovery index (MDRI) that was used to assess relative recovery across the cases. Operationalizing the capabilities approach illustrated a feasible technique to effectively capture broad dimensions of well-being outcomes considered important by the communities. The MDRI incorporated 12 capabilities and 42 indicators identified as relevant and important to the context of recovery in Aceh in order to develop recovery rankings of the five cases.

MDRI scores provided some strong descriptive observations of the five case studies. Panteriek Compound, categorized as a moved and non-participatory case, was an entirely new community of families from different parts of Aceh. In spite of being a new settlement, findings demonstrated that the community of Panteriek Compound scored the highest among the villages along several dimensions, including attachments, education, social interaction and respect. Lampulo, categorized as a not moved and participatory case, was a large community with a long history of generations of fishermen residing in the area. Findings displayed that the community of Lampulo scored highest among the villages along dimensions of life and livelihood. Gampong Baro, categorized as a moved and participatory case, was a small and traditional community that was composed almost entirely of 'original' community members that had relocated together. The community of Gampong Baro scored the highest among the villages along dimensions of mental wellbeing and protection from exposure. Bitai, categorized as a non-moved and non-participatory case, was a community composed of 'originals' and 'newcomers'. Findings found Bitai to score highest among the villages along the dimension of health. Neheun Compound, categorized as a moved and non-participatory case, was also an entirely new community of families from different parts of Aceh. Neheun Compound scored highest among the villages along the dimension of shelter.

Case descriptions in Chapter Four led to case rankings across spectrums of participation and resettlement. These rankings are illustrated in Table 7.1 below, alongside overall recovery rankings based on the MDRI. As illustrated in Table 7.1, the analysis of resettlement patterns and recovery outcomes, pointed to mixed findings on the nature of the relationships between them. For example, both the highest ranked community in terms of recovery (Panteriek

Compound) and lowest ranked community (Neheun Compound) had similar participation and resettlement rankings (both were moved and non-participatory). Participation and moving alone were insufficient variables to explain relative recovery outcomes

	Recovery Ranking	Participation Ranking	Resettlement Ranking
High	Pantereik Compound	Gampong Baro	Bitai
↑ ↓	Lampulo	Lampulo	Lampulo
	Gampong Baru	Bitai	Gampong Baro
↓ ↑	Bitai	Neheun Compound	Panteriek Compound
	Low	Neheun Compound	Panteriek Compound

Table 7.1. Overall case rankings

The qualitative analysis supported and provided evidence for the hypothesis that in order for long-term community disaster recovery to be successful, resettlement must address several core attributes of place. In particular, resettlement success in the five cases was influenced by location, which shaped livelihood, connectivity and safety, and built environment, which shaped sociability, identity and belonging. Comparisons across the cases highlighted that these influences impacted recovery through numerous mechanisms, including access to traditional livelihood activities, the availability of gathering places, and commemorative reminders. Some mechanisms were identified to be of more importance for recovery than others. For example, while access to livelihood was of paramount importance, sense of safety was found to be less so. The analysis also demonstrated that the influence of many of these mechanisms are mediated by factors such as leadership, proximity and/or community composition. For example, in some instances proximity was taken advantage of and/or distance was overcome in order to better enable recovery.

This study started with a broad operational working definition of the concept of holistic community disaster recovery as: "the restoration and improvement of living conditions of disaster affected communities". It emphasizes the role of placeness as a strong component of living conditions, such that recovery occurs within an enabling environment. Furthermore, this study has uncovered insights into what recovery actually means from the point of view of disaster survivors and affected populations. A strong component of this perspective includes the importance of recreating community through belonging, identity and sociability. Therefore, findings point to a redefinition of holistic community disaster recovery that elaborates on the

working definition and defines holistic community disaster recovery as: “the restoration and improvement of living conditions (i.e. intangible and tangible wellbeing outcomes) and place attributes (i.e. locational and built environment) among disaster affected communities.”

7.2. Contributions to existing bodies of literatures

The findings of this study add to three major bodies of literature: 1) the growing body of research on disaster recovery within the natural hazards and disaster scholarship; 2) the emerging literature on the planning and management of post-disaster recovery processes; and 3) the expansive literature on community development. The interdisciplinary nature of all of these fields of study leads to substantive overlap in regards to major contributions that are discussed below.

7.2.1. Understandings of community scale disaster recovery

This research develops a new way of conceptualizing disaster recovery by providing evidence to support recovery as a place-based concept. While the role of place in existing recovery literature focuses mostly on location (i.e., in relation to hazard), findings demonstrate that in reality, it is much more than that. For example, belonging and identity surface as being of greater importance than geographical location and safety from hazard. This study contributes to the limited number of detailed studies of recovery that have incorporated perspectives of place beyond location (for example, Cox & Perry, 2011; El-Masri & Kellett, 2001). Findings of this study demonstrate that the (re)creation of 'placeness' is an important component, if not the most important component, of pervasive themes of recovery as a return to some level of normalcy or functionality. While findings are specific to the environment of post-tsunami Aceh and within the context of Acehnese culture and society, the findings point to the importance of 'placeness' within the broader context of disaster recovery that includes multiple actors, local and international (i.e. international aid agencies). This study proposes a new definition of community disaster recovery in Section 7.1. based on a placeness analysis.

Findings support our understandings of holistic recovery (for example, in Wisner et al., 2004) as a way to truly encompass what recovery means to survivors. The process of probing relevant capabilities in order to develop a final list for this study displays an assessment of recovery that is based on the validation of dimensions of wellbeing important in a particular context. For example, mental well-being (i.e., being able to be mentally healthy) is incorporated

as important for communities in the five cases. Notions of recovery as a moment of opportunity (i.e., to implement development strategies and/or improve resilience) are furthered by observations in some of the cases. Access to governance structures and relationships with actors and agencies play a vital role in ensuring that opportunity is realized. Findings indicate that “building back stronger” in Aceh has certainly been achieved from the perspective of infrastructure. However, evidence suggests that the influence of international aid agencies has created new challenges, which may set back long-term community development in Aceh; for example, shifts of attitude in communities of no longer engaging in the upkeep of their surrounding land (due to monetary expectations created by Cash for Work programmes) and financial demands that exceed employment supply (i.e., due to higher wages having been offered by NGOs).

The findings support conceptual understanding of disaster recovery as a dynamic process (for example, Vale & Campanella, 2005; Reddy, 2000), especially when the process involves the displacement of communities and/or the influence of international aid agencies. For example, even though over six years had passed since the disaster, the movement of communities was still observed in Neheun Compound, and recovery still remained a distant reality to community members in the compound. In Gampong Baro and Bitai, dimensions of recovery outcomes were dependent on the continuation or termination of livelihood programmes (i.e., local aid conditions) directed at the community. Discussion on internal systems of dependencies and exchange and various types of access in each of the cases support systems approach thinking at the community scale (Olshansky and Chang, 2009).

7.2.2. Place-related factors that influence community scale disaster recovery

This study adds to the growing body of research on social dimensions that are important for successful disaster recovery (for example, Nakagawa & Shaw, 2004; Mileti, 1999; Berke et al., 1993; Aldrich, 2012). Findings emphasize place-related factors, including location-related and built environment-related factors for community scale disaster recovery. The important role of placeness on positive community outcomes across the cases argues that recovery is very much a social process that is enabled through physical, economic, political and other factors. Findings contribute to research on place-related factors influencing disaster recovery, including elements of livelihood, connectivity, safety, sociability, identity and belonging. Similarly to other studies on enabling rapid and successful recovery outcomes, local leadership emerges as being of key

importance (for example, in Rubin et al., 1985). In each of the cases, the presence or absence of strong leadership played an essential role in recovery success via mechanisms of place. For example, village leaders were able to attract government funds and NGO loan schemes for alternative livelihood activities when traditional sources of livelihood were not accessible (e.g., in Gampong Baro). Similarly, leadership played a key role in actively reinforcing a strong community identity (e.g., in Lampulo) and encouraging community gathering (e.g., in Panteriek) in order to enable positive recovery outcomes.

Community composition played a prominent role in recovery outcome by mediating the influence of mechanisms, such as unity and acceptance, which ultimately contributed to the success of a resettlement. For example, the role of newcomers in traditional villages, like Bitai and Lampulo, led to challenges in re-establishing social norms and behaviour that could benefit the community, as was observed in Panteriek Compound. While the social cohesion of the community of Gampong Baro provided impetus to direct opportunity (i.e., livelihood schemes) toward the benefit of the community, it also created group momentum to find a way to return to their previous land on the coast.

7.2.3. Participation and citizen involvement in a post-disaster context

The cases in this dissertation add to studies on the role of participation through citizen involvement in the disaster recovery process (for example, Ganapati & Ganapati, 2009; Berke et al., 2008; Olshansky, 2005; Kweit & Kweit, 2004). Observations contribute to writings on the complexities and challenges associated with accomplishing participation in the unique context and ground realities of a post-disaster environment (for example, Edgington, 2010; Chandrasekhar, 2010; Davidson et al., 2007). For example, the research points to discrepancies in interpretations of participation. Lampulo and Gampong Baro were initially described by key players and community members as following a participatory resettlement process. However, in reality, and as displayed in the participation rankings, neither were true cases of participation in practice. This supports other studies that find that participation, in the sense that beneficiaries have the capacity to make meaningful choices, is rarely obtained in a post-disaster project (Davidson et al., 2007). Furthermore, findings point to Panteriek Compound, very much a non-participation case, as having the highest recovery ranking. This challenges the relative prioritizing and suitability of participatory principles over other important elements (i.e., 'placeness' mechanisms) in a resettlement situation. However, negative impacts on the

surrounding village of Panteriek show the important role of participatory consultations as a potential means to better enable integration within broader communities that may be indirectly impacted by a disaster and/or resettlement.

7.2.4. Relative disaster recovery across cases

The findings contribute to methods of measuring disaster recovery (for example, Chang, 2010; Tatsuki, 2007; Bolin and Stanford, 1998; Bates and Peacock, 1993). In particular, it adds to the limited research on assessing community scale disaster recovery (for example, Brown et al. 2010; Rubin et al., 1985; Peacock et al., 2006). This study illustrates that the capabilities approach can provide an accurate theoretical underpinning for the analysis of holistic disaster recovery. While many have referred to a capabilities-based approach to understanding recovery (for example, Wisner et al., 2004), few have tried to systematically implement such an approach to develop a measurable tool (for example, Gardoni & Murphy, 2008). This study has demonstrated, through the development of the MDRI, how the capabilities approach can be implemented and operationalized for the purposes of measuring community recovery outcomes. Existing measures of community recovery focus on tangible elements and outcomes (i.e., physical, transport, economic). The MDRI provides an illustration of how intangible dimensions of recovery (i.e., social) can be captured in a systematic way through context specific indicators. The process of creating the MDRI also has applications for broader development literatures focused on operationalizing the capabilities approach (for example, Alkire, 2002; Robeyns, 2006).

7.2.5. Resettlement

Findings support studies that illustrate long-term socio-economic consequences and impacts of post-disaster resettlement (for example, Badri et al., 2006; Ingram et al., 2006; Abe et al., 2012). However, impacts of resettlement in these studies have been addressed from a relocation perspective. This study expands resettlement thinking to include resettlement that does not necessarily involve movement, yet carries features of what a relocation would have. For example, the impact of housing on social structures in both Lampulo and Bitai - both resettlement in previous location - demonstrate large shifts from pre- to post-disaster socio-economic conditions. In Bitai, housing masked true conditions of poverty from community members, while in Lampulo housing created more equality across the village. This study finds

that in some ways, resettlement strategy induced and/or deepened existing vulnerabilities, especially in relation to gender. For example, with the loss of traditional livelihood options, traditional female roles (i.e., limited to the household) were exacerbated in the cases of relocation. As such, the results support studies demonstrating that females are more vulnerable to disasters than males (for example, Enarson & Morrow, 1998; Enarson, 2000), but also that females are more vulnerable to resettlement schemes such as relocation after disaster and into the long-run. In addition, with Panteriek Compound displaying the highest recovery ranking, findings support the few other studies that show that post-disaster relocation may not necessarily bring as many adverse effects as expected (for example, Iuchi, 2010).

This research broadens the understanding of resettlement beyond human rights and refugee literature (for example, McDowell 1996; Oliver-Smith 2009). As such, the cases presented in this study are a contribution to narrowing the gap between the largely divided literatures of resettlement after disaster and development-forced displacement (Button, 2009). While this study does not make any theoretical claims to existing resettlement models (for example, Scudder, 1985; Cernea, 2000), it points to 'place' as a lens to understand reasons for success at the different stages of resettlement.

7.2.6. From recovery to development

A focus on a period of transition from 'recovery' to 'development' in Aceh provides insights for disasters and development literature that explores linkages between the two phases (for example, Anderson & Woodrow, 1998; Pantelic, 1991). Insights also contribute to broader regional studies on development and cultural change in Aceh (for example, Reid, 2006). The process of transitioning from recovery to development in Aceh highlights the complexities associated with how transitions are used in disaster studies (for example, the phases of the disaster cycle), questions the most appropriate time of transition from recovery to development, and displays the implications this has for long-term development. For example, Section 4.1.1 raises challenges associated with the closure of BRR before the handover of roles and responsibilities to specific government agencies was complete. The cases from this study also demonstrate that accessibility rather than availability plays a prominent role in maintaining uphill progress of communities past the departure of aid agencies and through a period of transition. For example, Lampulo and Gampong Baro had maintained prosperity through access to numerous livelihood schemes (whether traditional or not) enabled by location and/or through the Village

Office. Bitai and Neheun Compound, on the other hand were facing challenges due to unfavourable location and/or lack of impetus from the Village Office.

7.3. Policy and practice

Outside of contributions to the literatures, this study has policy and practice implications for ‘key actors’ (i.e., NGOs, donor agencies, government agencies, planners, designers, and architects) in disaster recovery and risk reduction. This section outlines some of the principal implications of the empirical findings illustrated through this dissertation. Implications presented in this section are relevant to local actors (i.e., in Aceh) and those within the broader aid system (i.e., INGOs).

7.3.1. Transferability

Many of the international aid agencies deployed in Aceh after the tsunami have played a significant role in shaping shelter, resettlement and recovery strategies in other major disasters since (i.e., the 2010 Haiti earthquake and 2010 Pakistan floods). Furthermore, there is a strong likelihood that these same agencies will be engaged in future disaster recovery efforts in developing countries and least developed countries. While each recovery effort is context specific, key actors involved in a recovery effort will carry similar roles and face similar challenges to those discussed in this study. For example, like in Aceh, many of the disasters will lead to the displacement of communities. In some instances, impacts of the disaster will jeopardize the viability and habitability of land, resulting in the need for government agencies to pursue relocation strategy. For these reasons, although the 2004 Indian Ocean tsunami was a distinct event of catastrophic measure, it can be argued that findings from this study are relevant for recovery and risk reduction in other regions of the developing world. This study has recognized the unique political economic context influencing the findings, but has not gone into significant depth on the complexities associated with this context. Similarly, when applying findings to any other disaster event, the role of context-specific influences will need to be taken into consideration.

7.3.2. Implications for post-disaster resettlement and recovery

7.3.2.1. Broader understanding of what recovery means

This study calls for broader understandings of what recovery means to communities that have faced natural disaster. Current disaster recovery strategies are most strongly driven by tangible outcomes, such as physical infrastructure. Intangible elements, such as the re-establishment of social networks, can become secondary or tertiary priorities and it is possible that they do not receive adequate time or resources needed to facilitate a desired outcome. The findings of this study illustrate that tangible elements are only one element in the recovery process, and that intangible elements play a crucial role in determining the long-term recovery outcomes of communities. Therefore, intangible elements of a recovery process should be given equal and sufficient attention, as are tangible elements. For example, when disaster recovery goals are being determined, their objective should be to achieve a certain quality of community life instead of re-establishing a built environment. In addition, the process of re-establishing the built environment should be sensitive to recreating a ‘place’ rather than simply a ‘space’.

In order to accommodate intangible elements of community recovery, this study suggests that community rebuilding should start concurrently with physical rebuilding. These include efforts at re-establishing or creating a new community identity and social norms within a resettled community. This study of recovery in post-tsunami Aceh also illustrates that while the recovery of physical infrastructure can be managed through the availability of funding and resources, the toll due to the loss of life is a concern that is difficult to overcome. Therefore, a component of community building should include a strong emphasis on capacity building. For example, in Aceh, communities have one of the highest numbers of health facilities per capita but do not have adequate numbers of health service professionals to staff them. Similarly, during field visits, empty school buildings were observed due to lack of teachers.

This study points to some of the challenges attributed to the usage of transitions in understanding recovery (for example, early response, early recovery, long-term recovery and development). Although beneficial when focusing strategies and efforts, this method does not take into account the different paces of progress amongst indicators. This study finds that disaster recovery is unique to the environment in which a disaster occurs and does not proceed at a fixed rate across all indicators and cases. For this reason, it would be beneficial to allow for a more

flexible timetable in which organizational mandates can operate. It suggests that during the course of recovery, multidimensional indicators should be systematically assessed on an ongoing basis. Resources and efforts can then be efficiently allocated to areas requiring more assistance and removed from programs that have achieved critical mass and are self-sustaining.

7.3.2.2. Nuances of resettlement after disaster

The findings challenge notions that a ‘participatory’ approach is a preferred method for success. Rather they illustrate the different meanings of participation as they play out in a post-disaster situation. For example, findings suggest that none of the cases are truly participatory. This study points to a need to reassess the meaning of participation as it applies to a post-disaster situation and determine core elements of a participatory approach in the context of resettlement. The importance of participation in community affairs after a resettlement is highlighted as being crucial in long-term success. For example, Gampong Baro maintained community involvement in decisions that benefited the community as a whole. Bitai had minimal community involvement, which was exacerbating inequities in the community. In some of the cases, speed of resettling was compromised for participation and/or quality. For example, in Lampulo, community members decided to move back to their homes before they were completed because they were taking so long to finish. At the time of fieldwork some were still struggling to complete elements of their house (for example, installing a door or roof). Health concerns arising from housing material and water seeping through tiles in Panteriek Compound are examples of where speed jeopardized quality. The findings point to the need for actors to maintain a fine balance between speed, quality and participatory processes in the resettlement process.

All of the case studies indicate that it is important to engage local (i.e., village) leadership early on and throughout recovery and resettlement processes; this includes the strengthening of the capacity of local leadership. Leadership that is inclusive and composed of leaders having daily involvement with community members (for example, in Panteriek Compound and Gampong Baro) can be effective in nurturing place attributes that ultimately lead to positive recovery outcomes. Engaging local leadership to ensure that project outcomes meet the needs of beneficiaries, should be a necessary first step, as local leadership may be able to effectively articulate what an ideal recovery state should look like or how existing plans might not meet the needs of disaster victims. This is especially the case where international as well as local actors

can bring with them a preconceived notion of what a recovered state should look like and it is possible that these expectations are misaligned with actual needs. In addition, local leaders possess a wealth of knowledge and wisdom regarding the specific needs of beneficiaries, including their social, cultural and economic state prior to a disaster. For example, strong leadership from the onset of resettlement in Neheun Compound could have avoided some of the unfavourable design elements of the community (i.e., identified the need for shaded areas). When a relocation takes place through random lottery allocation after a site is built, as was the case of both Neheun Compound and Panteriek Compound, establishing leadership can be challenging. Panteriek Compound benefited from joining an Old village with a strong leader, although this also meant negative implications including tensions between the Old village and new compound, as discussed at various points in this paper.

Soon after early response following a natural disaster, there is strong pressure for recovery agencies to start the resettlement process as soon as possible. The limited timeframe in which decisions must be made can result in a strain on available resources and technical knowledge leading to ineffective decision-making. If appropriate information is not available during the decision making process, plans can be enacted that do not meet the long-term needs of the target populous or community objectives. For instance, BAPPEDA had created spatial plans detailing the level of risk by area. Although resettlement was only to occur in low and medium risk areas, today many communities remain along the high-risk shore areas of Banda Aceh. Due diligence must be carried out before the resettlement process can begin. This will allow for better long-term solutions, more reliable construction processes and efficient disbursement of funds. Due diligence should include strong community engagement as well as expert opinions in critical decision-making and follow-through. Furthermore, while coordination among actors is emphasized at a regional and national scale, it is equally important to do so at the community scale. For example, in Lampulo, the construction of houses came as a higher priority to roads and drainage. To follow generally accepted building codes requiring thicker footings, roads were built higher than the houses they serviced. This resulted in new hazards including rainwater draining from roads into houses.

7.3.2.3. Relocation as a post-disaster recovery planning strategy

This study finds that through careful attention and prioritization of mechanisms of place, relocation can be a viable alternative over rehabilitating existing infrastructure in vulnerable

areas. For example, the case of Panteriek Compound demonstrated how relocated communities can prosper just as well, if not better, than communities rebuilt on previous land. However, if a relocation site does not allow for the re-creation of ‘place’ via location and built environment mechanisms, there is a likelihood that the resettlement will struggle to maintain itself as a community. Furthermore, land use policies that are designed to reduce hazard exposure (for example, movement to a hilltop) and/or to enhance resilience (for example, widening roads), can in fact contribute to new vulnerabilities. For example, while Neheun Compound was away from the coast, the location had disconnected villagers from communication on what was going on in the broader community. Efforts to widen roads in Bitai had impacted socialization among neighbours and reduced social cohesion.

Long-term spatial planning in Banda Aceh focuses on movement to the South through incentives of better infrastructure systems (for example, roads, buildings, and drainage). However, the importance of infrastructure came up infrequently in community members across the cases studied. What this points to is that of greater value is the viability of the new developments in the South to enable location mechanisms, like access to livelihoods and access to broader governance structures, and built environment mechanisms, like creating gathering spaces and facilitating notions of permanence that may prove to be beneficial in the long run. Incorporating and promoting these elements may lead to a more favourable response.

All of the moved cases illustrated that females faced the brunt of negative impacts of relocation. For instance, females in both Neheun Compound and Gampong Baro were more likely to be isolated. Community design must pay close attention to the needs of females, as they are likely to be around the villages during the daytime more often than males. For example, the topographical incline and the lack of access to shaded meeting areas in Neheun Compound resulted in women being forced to stay in their homes for long periods of time. Smaller meeting areas could have been built in strategic areas instead of one large centre for the whole community. In addition, in cases of relocation, females are more likely to be excluded from livelihood schemes and males are more likely to pursue generic new livelihood schemes due to prevailing expectations of traditional roles. Therefore, the creation of livelihood activities directed specifically toward females are necessary in order for females to establish a sense of purpose within their new community and minimize negative domestic impacts. For example, in Gampong Baro, women who were previously engaged in livelihood activities on a daily basis

had become completely detached from the same since relocating. Men continued to travel to previous and/or new livelihood activities, returning home only at night, perpetuating feelings of isolation among women. On the contrary, females in Lampulo were actively engaged with new livelihood schemes such as small home businesses and expressed greater sense of belonging and stability as a consequence. Findings suggest that if relocation is pursued as a necessary option, it may be beneficial to stratify project beneficiaries into sub-groups (i.e., gender, age and occupation) through which their unique priorities and risks can be taken into consideration.

7.4. Limitations and possibilities

This study explored holistic community disaster recovery across five communities in Aceh. Both of the terms *holistic* and *community* by definition demanded a big picture understanding of recovery outcomes in each of the cases that were explored; data collection followed methodologies that would enable this. Consequently, the findings presented in this dissertation are based on a broad understanding of communities. However, there are invariably a number of subtleties that were missed by not delving deeply into all of the topics and factors that were raised by community members. For example, while the extent of inequities in each of the communities was discussed and is displayed through the MDRI, the causes and implications of these inequities were not studied in detail. Similarly, while relationships between place attributes and corresponding impacts on recovery have been examined, sophisticated details on the nature of these relationships has not been examined (for example, between commemorative symbols and grief). Several of these relationships point to opportunity for future in-depth inquiry. Gaining a better understanding of the relative importance of key mechanisms that have been identified is also an area of future research. The role of context would complement these understandings. The conceptual approach included the humanistic dimension of the idea of place within notions of location and built environment. Isolating this dimension remains an area for future research.

While the focus has been on community as a whole, various groups within the community were highlighted as having more profound impacts on the resettlement. For example, this study has demonstrated some key differences between men and women faced by relocation. Women in all three of the moved cases - Gampong Baro, Neheun Compound and Panteriek Compound - expressed reduced socialization and were faced with exacerbated

traditional gender roles. This study has also shown that elderly faced unique challenges when faced with relocation. For example, many of the elderly who were assigned housing in Neheun Compound chose to leave the community and find accommodation with a relative closer to the city. These finding point to the need to further develop understandings of specific population groups, including women and elderly and reasons why they face unique challenges during resettlement. Therefore, an important area of future research includes the exploration of impacts of resettlement on specific population groups within the premise of community recovery. Furthermore, each of the key findings could in fact be revisited using a gender and/or age lens. For example, the discussion could be supplemented with discussion that addresses gender and/or age and livelihoods, sociability, identity, belonging, and so on.

One of the great challenges in studying disaster recovery is that results may vary depending on the time of the research (Yasui, 2007: 329). This is especially the case when it comes to assessing recovery outcomes. Had the case studies been studied several years prior to the fieldwork (i.e., between 2005 – 2010), results may have pointed to very different recovery outcomes. Similarly, an exploration of recovery ten years after time of fieldwork (i.e., 2021) may point to substantially different recovery outcomes. For example, on the basis of understanding of some of the villagers of traditional Panteriek, Panteriek Compound may even cease to exist in ten to twenty years' time, and Gampong Baro may have moved back. Understandings of implications on the well-being of community members, were this to happen, would provide strong insights into topics of adaptation and resilience that were excluded from the scope of this dissertation. Returning to the communities over a period of time may contribute to evidence supporting the role of location and built environment influences in successful resettlement. Furthermore, this study has established a baseline for recovery levels of the five communities through the MDRI used. Revisiting the communities after a certain period of time to use the same tool to assess recovery outcomes would enable time-series analysis that may better inform understandings of longer-term community recovery.

All data records collected at the village level were lost in the 2004 disaster. Therefore, an understanding of pre-disaster conditions for the purposes of this study was entirely based on community stories and insights. While efforts were taken to control for similar pre-disaster conditions across the cases (see Section 3.4.1), at times it was hard to obtain a real sense of this, for community insights were almost always relative to their current conditions. Similarly, pre-

existing vulnerabilities were unclear to the researcher. The validity of case comparisons on the basis of recovery outcome may have been jeopardized for both of these reasons. However, again, the dataset established in this study could serve as a baseline for ongoing study of the same communities over time.

One of the methodological weaknesses of key informant methodology in the context of the Acehese village became apparent soon into fieldwork. This was that the majority of key informants at the leadership level were male (i.e., village chief, block chiefs, *imam*). When this became apparent, efforts were made to incorporate greater female voice through various measures. For example, in some of the interviews, wives of the village chief or block chief would be present and would join in the conversation; the interview format would open up to incorporate her responses. Informal and formal women's group leaders were also added to the key informant list. Also worth noting is that more informal discussions were carried out with females in the villages than males.

The absence of the NGO voice in each of the cases (i.e., that of expatriate aid workers, since they were no longer in Aceh) may be considered a weakness. In particular, the lack of participation of NGOs limited the understanding of the actual participatory process carried out in each of the cases, making the findings entirely based on the impressions gained from beneficiaries. However, at the same time, the absence of the NGO voice enabled a perspective of community recovery that was entirely based on that of community members through a voice that is secondary in many of the reports produced by NGOs. In addition, in both of the participatory cases (Lampulo and Gampong Baro), key actors from the community who were directly engaged with the respective NGO in the participatory process were interviewed as key informants (for example, supervisors hired by the NGO). Even still, tracing some of the expatriate NGO voices could provide greater insights on the true nature of the participatory process. In addition, the expatriate NGO voice could allow for insights on how their experiences have shaped respective NGO resettlement strategy in other disasters that they have responded to since.

Other methodological constraints included that at times, language limited the scope of the investigation. When translation was necessary, nuances in responses were potentially missed. For example, some words of the Indonesian language cannot be easily translated or compared to an English equivalent and/or the depth of meaning symbolized by a particular word cannot be understood outside the language. In addition, the subjective nature of data collection,

interpretation, and analysis posed various challenges, which are characteristic of all qualitative research. Strategies to address these were discussed in Chapter Three.

Some of the larger context issues were not discussed in detail in this dissertation. These include the dollar amount and nature of funding that was made available to each of the village cases, as well as the detailed links with higher-level government agencies and NGOs. These data were shared with the researcher, but details were excluded from the analysis due to the inability to assess the NGO voice and discrepancies in information received. Addressing both of these issues would also point to a complex analysis and discussion on corruption and the politics of humanitarian aid delivery, which were beyond the scope of this study. While the cases explored in this study are uniquely Acehnese, the detailed cultural nuances of Aceh and its people were not a primary focus of the study.

For the most part, the role of the political conflict in Aceh and the impacts of the peace accord were excluded from discussions on recovery and resettlement in this dissertation. However, it is undeniable that both of these play a significant role in all realms of Acehnese society and it can be argued that repercussions of the political conflict impacted each of the communities studied in this dissertation in some shape or form. In reality, there is no clarity as to what constitutes as a post-conflict impact versus a post-disaster impact in Aceh. While the exclusion of in-depth attention on the repercussions of the conflict is perhaps one of the greatest weakness of this study, it was done for various reasons described in Chapter Three (for example, based on discussions with local scholars on research scope). Certain measures were taken to ensure that findings were not compromised by this decision. For example, in order to provide some level of control for conflict, the cases that were selected for study did not have a strong ex-combatant population (for example, one of the moved villages surveyed and removed from consideration was predominately composed of ex-combatants). Furthermore, Banda Aceh and Aceh Besar are both considered 'low conflict intensity sub-districts in Aceh' (MSR, 2009). The decision to exclude conflict from the village selection and during discussions with community members limits this study by neglecting to look at possible contextual influences (i.e. memory and impacts of the conflict), but at the same time it allows for an exploration of relationships that would otherwise be hard to explore in a systematic manner. However, the conceptual challenges of understanding recovery in situations of disaster and conflict, as was the case in Aceh, remains

an area for future research. Incorporating secondary data on the political economy of Aceh throughout the discussion would add some more texture to the analysis.

Lampulo, Bitai and Panteriek Compound were all cases in an urban area; Gampong Baro and Neheun Compound were described as cases in a rural area. However, in the wider context of the province of Aceh, the rural cases may not be indicative of a truly rural area due to the close proximity to Banda Aceh. Future research could make an important contribution toward understanding how urban and rural experiences in resettlement may vary from the lens of place. For example, some of the new resettlements (i.e., Thurbe described in Section 3.4.1.) that were surveyed for potential inclusion in this study were situated in quite remote areas with limited infrastructure. The opportunity to study these communities (and others further down the coast) may strengthen or contribute to findings of this study.

Finally, further research comparing resettlement patterns using the same lens of capabilities and place would give findings of this study more weight. This could include applications of the MDRI to other post-disaster contexts across different timescales. Opportunities to validate the index (both internally and externally), explore the weighting of indicators, and use other strategies to assess the robustness of the index may also be explored. The NRC (2006) has advocated for more cross-cultural and comparative research. Such studies would provide explanations for cross-societal variations in response and recovery processes and outcomes across different scales and different disaster events. Comparing the findings with another disaster event would provide valuable insights on what worked and what did not work as far as resettlement is concerned. Findings could also be used to develop concrete guidelines on disaster resettlement strategies for post-disaster recovery authorities.

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Appendix One: Semi-structured interview and focus group discussion templates

Semi-structured interview questions (sample template)

The following sets of questions were designed for semi-structured interviewees in Indonesia with key informants for the research. These included: village heads, neighbourhood chiefs, school principals, health clinic managers, and field staff of NGOs. The questions were tailored for specific informants. Questions were organized within four categories: community data and the three variables of inquiry - recovery, resettlement and place.

1. Community Data

What is your role in this community? How long have you held this position? How long have you been a part of this community?

How do you define this community? On this map, please indicate the approximate boundaries of these communities

How many households are in this community?

How familiar are you with pre-tsunami conditions of the community? How familiar are you with post-tsunami conditions?

2. Conditions of Community Recovery

Do you think recovery has been consistent across the community? Are there any distinct inequalities and/or divisions? What are the reasons for this?

Over the past two years, quality of life of community members has: improved, worsened, or stayed the same? Why?

What is the average age of deaths in the past two years? Have you seen a change over time? If so, can you describe this?

Is there a significant cause of recent deaths and illness in your community?

Do you feel that your community members are well fed? Are there an adequate number of vendors selling products to your community?

How many households in this community are homeowners? How many are renters?

How many homes are currently occupied? Where have members of abandoned homes gone? Why did they leave? Do you think they will return?

Is public transit available? How do people get around?

How many children attend primary and high school? What is the rate of university attendance?

Are most adult members of your community working? Why/why not? What is the main source of livelihood? Is there job security?

3. Resettlement Information

Is the community situated on a new site or previous site?

When did the village start to become occupied/reoccupied after the tsunami? Can you recall how this took place?

Was the resettlement site planned? Can you recall the planning process?

What was the level of community participation in the resettlement process?

4. Place Attributes

How far is village from where it was previously situated?

Where do most villagers work? Do most commute to work? How long does it take?

Are basic services accessible? (food, water, healthcare) Does everyone in village have equal access to services? Are they maintained and monitored? By who?

How many households have moved in and out of the community over the past two years?

Why do you think this is?

In past two years has the village population increased, decreased or stayed the same?

Why do you think this is?

What are the groups, organizations and associations that function in this village? How much of the village population is involved with these? Why do you think this is?

Focus group questions (sample template)

The following sets of questions were designed for focus group discussions in Aceh, Indonesia with village community members. The questions were merely guidelines and were tailored depending on the group that was present and the direction of discussion. Questions were organized within four categories: community data and the three variables of inquiry - recovery, resettlement and place.

1. Community Data

Would you like to introduce yourself? What is your role in this community? How long have you held this position? How long have you been a part of this community?

How do you define this community? How many households are in this community?

2. Conditions of Community Recovery

Do you think recovery has been consistent across your community? Are there any distinct inequalities and/or divisions? What are the reasons for this?

Over the past two years, quality of life of community members has: improved, worsened, or stayed the same? Why?

How many homes are currently occupied? Where have members of abandoned homes gone? Why did they leave? Do you think they will return?

How many children attend primary and high school? Are most adult members of your community working? Why/why not? What is the main source of livelihood? Is there job security?

3. Resettlement Information

When did the village start to become occupied/reoccupied after the tsunami? Can you recall how this took place? How do you feel about how this was done?
Was the resettlement site planned? Can you recall the planning process?
What was the level of community participation in the resettlement process?

4. Place Attributes

How far is village from where it was previously situated?
Where do most villagers work? Do most commute to work? How long does it take?
How does the location of this village impact the livelihoods of community members?
Are basic services accessible (food, water, healthcare)? Does everyone in village have equal access to services? Are they maintained and monitored? By who?
How do you feel about the way your community has been built and looks today?
How is the quality of homes built in this community? Are there differences?
How efficient is the road system? Is it easy to get around?
Is there a gathering space for the community? Where are village meetings held?
In past two years has village population increased, decreased, or stayed the same? Why do you think this is? What are the reasons for people staying? What are the reasons for them leaving?
What are the groups, organizations and associations that function in this village? How much of the village population is involved with these? Why do you think this is?
Are local community members engaged with local politics? Do most of the population vote?
How satisfied are you with your community (very, somewhat, slightly)? Why?
Do people in this community trust each other?
Do you feel that you belong in this community? Is there an overall sense of belonging here?
Do you associate any significance to the land on which this village is constructed?
Do you feel safe where you are located?
Is there any fear of crime or violence in your community? What is this caused by?
Do you have a village disaster preparedness plan? Have you been trained on it? Who is in charge?

Appendix Two: Relevance of indicators to community recovery

Capability	Indicator	Relevance
Life – being able to live to the end of human life	living conditions	Living conditions play a large role in a community's ability to function and conduct activities of daily living in their immediate environment. Interviewees were able to readily compare and discuss their living conditions before and after the natural disaster, whether it had since become more or less difficult, and how this was changing over time. While this is subjective in nature, it is an important insight into how communities perceive the change in their living standards and conditions.
	marriage rates	Natural disasters are synonymous with the loss of life, including the loss of loved ones. In assessing marriage rates, we are able to determine the propensity of community members moving from survival to living or, in other words, moving from worrying about ones self to planning for a future family and rebuilding or building up a new community.
	birth rates	The tendency toward starting new families generally indicates a level of emotional stability in the community. Being able to support another live demonstrates a need and intention to move ahead with life and possibly reestablish a new life following a disaster. This especially holds true for a society characterized by moderate to high birth rates prior to disaster.
	population change	Due to the nature of recovery efforts there is often a movement to areas which have been less damaged, have livelihood/employment opportunity and have the necessary resources to support their family. A decrease in population indicates insufficiencies in addressing the needs of its inhabitants. Conversely, if the size of the community is increasing, it could demonstrate that the standard of life being expressed inside the community is better than that of neighboring communities and/or there is significant incentive to stay.
Bodily health – being able to have good health and adequate nourishment	reported illness	The severity of documented health symptoms is indicative of the level of cleanliness and the effectiveness of basic adherence to health guidelines in the community. Having a healthy population facilitates their ability to go to work, school and take care of each other. This in turn maximizes recovery efforts as it enables community members to remain active and contributing to society.
	available health services	In the framework of recovery, a community cannot establish itself if it needs to seek outside resources to perform basic tasks specific to that community. Health services in the villages provided the function of delivering babies, distributing medicine and treating common ailments. Lower reliance on external health care providers assist in providing a level of health security for the community members and allows them to be self-sufficient in addressing its communities health needs.
	number of food vendors	While it is more economical to purchase products and produce at a large or central market, the emergence of smaller shops offering convenience for increased prices indicates an easing of financial strains on a community. The number of food vendors within a community also shows community members willingness to spend increasing amounts of time within the community as opposed to travelling to other communities to obtain better prices or selections.
	productive cropland	Since the growing of crops requires significant infrastructure, tools and time, communities that invest a significant portion of their land to agriculture demonstrate a long term commitment to the area. The creation of productive cropland shows an individual's attachment to that location whether it be new or ancestral land. The natural return of productive cropland can be accompanied by health benefits due to a reliance of yields from the land.
	available clean water	As water is a fundamental necessity of life, a community cannot be self-sustaining and established without a reliable, clean and cost-effective water source. Used for cooking, washing and farming, water is integral to facilitating the recovery process. Investments in digging fresh water wells and/or pipes can also be seen as an investment into the communities land and shifting it away from being a temporary space and closer to a permanent settlement.
Mental wellbeing – being able to be mentally healthy	expressions of grief	The flux of emotion that comes with a natural disaster can leave lasting impressions on those affected. A community is not able to move forward until they have come to terms with the affect of the disaster and their current situation. As feelings of grief subside, they can be replaced with those of hope and contentment. This sign of mental recovery can be the point where communities are able accept the past and purposefully move their lives forward.
	expressions of fear	Similar to expressions of grief, fear acts as a strong deterrent to those wishing to live a healthy live. Mental well-being can be impeded if fear is able to limit the abilities of the community to function.
	negative reminders of disaster (debris, destruction, etc)	Negative visual cues of the disaster can be a constant reminder of past damage and human loss. While recovery does not require all traces of the disaster be removed, it does require that the community feel they are in a safe space (physically and emotionally).
Education – being able to be educated	emphasis on continued education (high school +)	Levels of community members vying for higher education are a sign that the community is able to support children for longer periods of time. By exhibiting deferred gratification (students skills), communities exhibit increased recovery and priority in investing in their long-term future.
	school attendance levels	After a disaster, children are sometimes required to work to support their families or due to the unavailability to schools close enough, choose not to attend. After a natural disaster it is important to increase the quality of life to a point where education can again become a priority.
	supplies/equipment available	The physical location and or quality of schools can be a significant barrier to education standards. While attendance might be high, the tools required to provide a quality education might not be present such as chalk boards and books

Capability	Indicator	Relevance
Shelter – being able to be sheltered	quality of homes	The presence of housing is insufficient to indicate recovery; construction must be of adequate standards and livability. Examples of this could include leaky roofs, improper drainage and unstable walls. The level of quality homes built in a community is also indicative of the level of investment the community has made in remaining in that location.
	available land for new homes	A healthy community is one which is able to grow and remain cohesive in nature. This requires the need for vacant land on which to build. If family are only able to remain in a dwelling for one generation before the house is outgrown, it will require communities to have a large turnover of residents and impede the building of community bonds and networks.
	population in semi-permanent/wood houses (as %)	Temporary housing is only made to facilitate shelter in the short term. As the resources used for these structures are short lived, individuals who live in them will need to be need to be relocated in the near future. Permanent solutions are required to enable residents to develop roots to their community and signify the ability to afford sufficient housing.
Mobility – being able to be mobile and move freely	quality of roads	Quality roads are the essential arteries that enable access to livelihoods and services. Without the appropriate transportation infrastructure, the community's economy will have problems getting started due to difficulties in bringing goods in and delivering them to recipients. Access to schools and healthcare can also be affected as well as response times in emergency scenarios.
	public transit	The use of transit is a significant means for travel. If there is a lack of needed routes or resources, individuals might not have access to work, markets or schools. If public transit takes too long or is too expensive, it might not be a viable means of travel.
	population with motorbikes (as %)	As a primary vehicle for transport in the region, having a motorbike indicates having the means to move around and earn a living. Having a motorbike was consistently referred to as a sign of resuming daily living and a sign of having the financial means or opportunity to invest in one.
Social interaction – being able to engage in social interaction	number of community activities and/or events	The number of community activities and events can indicate how cohesive a community is. As a strong community can provide a robust support system to those recovering from a natural disaster, this indicator serves to demonstrate a community's ability to take initiative and take care of those around them.
	use of public space	While building public space is important, it is the use of these spaces that is required to best serve its purpose. After a disaster, families may become overly sensitive to their personal safety and be fearful in venturing outside their home or interacting with others. Public places serve as a communal area where seniors, adults and children can congregate to share stories, release tensions and pass down traditions and culture.
	community satisfaction	The satisfaction a community feels, while subjective, is important in determining how community members view their community as a whole. Positive feelings are able to create an environment that is conducive to community betterment. This indicator attempts to capture the intangible nature of satisfaction and its affect on community members ability to integrate with their neighbours.
	involvement in local village politics	The level of involvement by community members in local politics is a method of determining the level of ownership villagers have over their community. If involvement is low, members are apathetic about their community and surroundings.
Attachments – being able to have attachments to people and things	home ownership	The level of home ownership reflects the composition of the community members and provides an insight into the possible priorities of the individuals who live in that community. While renters want rent to remain low, owners could be motivated to ensure the infrastructure of the village remains in good condition.
	number of renovations	After a disaster houses are built by the hundreds following the same architectural plans. Efforts to renovate these dwellings shows an availability of funds as well as a desire to move beyond basic needs and become more comfortable in their current location. By investing in their dwelling, residents are demonstrating a desire to attach themselves to their location and invest in the betterment of their property.
	number of permanent plants	Investing in plants that signify an intention to stay in a particular location also show an availability of funds as well as a desire to move beyond basic needs and become more comfortable in their current location. By investing in what are considered permanent plants, residents are demonstrating a desire to attach themselves to their location by marking their territory and invest in the betterment of their property. Permanent plants here refer to dongdong plants. As explained by villagers, the investment and planting of dongdong plants signify an intention to stay a particular house.
	home occupancy rate	Occupancy rates provide a good measure of the value individuals see in the housing infrastructure given to them. If the construction is of high quality and provides access to those living attributes necessary for a good life, individuals will want to live or rent the space. If the construction has a serious failing, individuals will not want to live there and will have difficulty finding renters. Having a sufficiently high occupancy rate will also enable the community to obtain the critical mass needed to build synergies within the community in terms of social, political and other initiatives.

Capability	Indicator	Relevance
Environment – being able to live with concern for natural surroundings	Vegetation	As trees require many years of growth before they produce significant fruits, communities' investment in vegetation indicates a long-term investment in their future at that specific location.
	littering	Seeing the level of litter on community streets can be seen as the level of ownership citizens have over their community. Having a sense of community will discourage individuals from littering in their community and will instead encourage them to clean up litter and take pride in the cleanliness of their surroundings. Lower levels of litter allow for natural environmental processes.
	garbage disposal	A significant problem when infrastructure has been damaged by a natural disaster is the removal of garbage. As many resources are devoted to the removal of debris, areas that were once added to the positive natural identity of a region, such as parks, become sites of garbage accumulation and result in health and safety hazards. Having a means to dispose of garbage signifies a return to daily living and allow for positive benefits to the community
Livelihood – being able to seek employment and attain a living	unemployment rate	Having a sense of constructive purpose following a disaster can be a very important element in recovery. Without it, a community will encounter challenges associated with income disparity and inequality and more members living with a lower quality of life.
	traditional survival options (fishponds, livestock)	Post-disaster, having a source of survival can be the only source stability and is a primary component of returning to daily life. The presence of traditional livelihood options displays a community's desire to reestablish survival options that are familiar to the community and allow for self-sufficiency.
	home industries and small shops	The presence of home industries and shops signifies prosperity and economic growth within a community. It also indicates a desire to reestablish new livelihood options.
Safety – being able to be protected from forces of nature	preparedness planning and awareness	To ensure that community members feel safe and are able to continue living their lives, efforts must be made to increase their safety. By creating disaster preparedness plans and posting sufficient signage, community members will have a comfort level with their surroundings and be more willing to move ahead with their lives.
	hazards (flooding based on disaster event)	Areas where continued natural disasters occur will experience slower progress in livelihood betterment. Having to address damage from repeated hazards can take significant energy and funds which can stress communities physically and emotionally and delay recovery.
	disaster risk (based on TDMRC)	Within a framework of disaster risk reduction, recovery implies reduced risk to future hazard events. Risk can be calculated using various techniques, such as simulation maps highlighting the level of risk a particular region (in this case, village) carries. Lower levels of risk would indicate recovery that carries with it a strong element of risk reduction.
Respect – being able to live free of discrimination	level of tolerance (ethnic and religious)	Following a natural disaster, there is a general fear of the unknown. With a strong desire to return to how things were prior to the disaster, communities can be significantly resistant to change or new influences. If community members feel secure in their beliefs, cultures and environment, they will be less likely to feel threatened by new influences and instead help to integrate outsiders into their community toward a mutual beneficial environment.
	gender inequality	Females deaths are typically disproportionately higher than male deaths after a disaster. A return to more equal levels of males and females signifies a return to a more natural demographic. The return also points to community members moving from worrying about oneself to planning for a future family and rebuilding or building up new relationships.
	crime rate	Thefts and/or violence encounters are often the consequence of frustrations, desperation or tension. The increased frequency of these events would signify an increase in such conditions. The decrease of these encounters would point to greater acceptance of current conditions.
	disparity between young adults and elders	Elderly deaths were disproportionately higher than deaths of young adults across the region. Communities with a predominantly older or young populations point to challenges associated with loss of culture, traditions and other positive benefits of a diverse aged population

Appendix Three: Detailed breakdown of MDRI scoring

Indicator	Scoring		
	1 = Low	2 = Moderate	3 = High
living conditions (in this case, last two years)	over 75% expressed increased difficulty	over 75% expressed no change	over 75% expressed decreased difficulty
marriage rates	low marriage rates	moderate marriage rates	high marriage rates
birth rates	low birth rates	moderate birth rates	high birth rates
population change	population decreasing (people leaving)	steady population	population increasing (people coming)
reported illness	some serious illnesses (infectious, STDs)	some unusual symptoms (asthma, malnutrition)	common symptoms
available health services	parttime midwife in village	fulltime midwife in village	fulltime midwife and doctor in village
number of food vendors	very few visible food vendors	some visible food vendors	many visible food vendors
productive cropland	very little productive cropland	some productive cropland	a lot of productive cropland
available clean water	occasional well water	well water available most of the time	company water available most of the time
expressions of grief	many expressions by interviewees	some expressions by interviewees	few expressions by interviewees
expressions of fear	many expressions by interviewees	some expressions by interviewees	few expressions by interviewees
negative reminders of disaster (debris, destruction)	many visible reminders	few visible reminders	no visible reminders
emphasis on continued education (high school +)	low priority on education	average priority on education	high priority on education
school attendance levels	low attendance rate	moderate attendance rate	high attendance rate
supplies/equipment available	very poorly equipped	fairly well equipped	highly equipped
quality of homes	poor quality of homes	okay quality of homes	good quality of homes
available land for new homes	hardly any land available	some land available	a lot of land available
population in semipermanent/wood houses (as %)	approximately 10% or more	approximately 5%	approximately 2% or less
quality of roads	poor quality of roads	okay quality of roads	good quality of roads
public transit	far from public transit route	nearby public transit route	directly on public transit route
population with motorbikes (as %)	under 25% of population own motorbike	around 50% of population owns motorbike	over 75% of population owns motorbike

Indicator	Scoring		
	1 = Low	2 = Moderate	3 = High
number of community activities and/or events	none to few community activities and/or events	several community activities and/or events	many community activities and/or events
use of public space	very few visible gatherings on typical day	several visible gatherings on typical day	many visible gatherings on typical day
community satisfaction	few expressed satisfaction with community	many expressed satisfaction with community	majority expressed satisfaction with community
involvement in local village politics	most excluded, unable to access, or uninterested	some excluded, unable to access, or uninterested	few excluded, unable to access, or uninterested
home ownership	mostly renters	mixed renters and owners	mostly owners
number of renovations	small percentage of houses with renovations	moderate percentage of houses with renovations	high percentage of houses with renovations
number of 'permanent' plants	none to few 'permanent' plants	several 'permanent' plants	many 'permanent' plants
home occupancy rate	around 50% of houses occupied	around 75% of houses occupied	all or almost all houses occupied
vegetation	little vegetation visible	some vegetation visible	lots of vegetation visible
littering	lots of garbage visible	some garbage visible	minimal garbage visible
garbage disposal	no dumpster, burn all garbage	few dumpster, burn some garbage	few dumpsters, burn minimal garbage
unemployment rate	most community members without stable income	many community members without stable income	few community members without stable income
traditional survival options (fishponds, livestock)	few options available	some options available	many options available
home industries and small shops	few home industries and/or shops	some home industries and/or shops	many home industries and/or shops
preparedness planning and awareness	no visible signage	some visible signage	significant visible signage
hazards (flooding based on disaster event)	severe flooding	some flooding	no flooding
disaster risk (based on TDMRC)	high risk based on simulation	moderate risk based on simulation	low risk based on simulation
level of tolerance (ethnic and religious)	low tolerance displayed	moderate tolerance displayed	high tolerance displayed
gender inequality	predominantly male or female (~20:80)	somewhat more male or female (~40:60)	fairly mixed male and female (~50:50)
crime rate	several recent thefts or acts of violence	few recent thefts or acts of violence	no recent thefts or violence
disparity between young adults and elders	predominantly young adult or elderly (~20:80)	somewhat more young adult or elderly (~40:60)	fairly mixed youth and elderly (~50:50)

* 'permanent' plants here refer to dongdong plants. As explained by villagers in Aceh, the investment and planting of dongdong plants signify an intention to stay a particular house.

Note: Low, moderate and high scoring was conducted based on primary data (i.e. impressions gained through key informant interviews).

