Assessing Justice and Articulating Diverse Pathways to Climate Change Adaptation: The Case of Iloilo, Philippines

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Abstract

Coastal communities are vulnerable to climate hazards and are often subject to several interventions designed to mitigate climate change. However, scholars warn adaptation projects often benefit the more privileged members of target communities whilst leaving behind the most marginalised. Consequently, adaptation interventions may exacerbate local inequalities in power and wealth and fail to assist the most vulnerable. Drawing on the literatures of just adaptation, capabilities approach, and post-development, this research explores the issue of climate justice through two case studies of adaptation projects carried out by international NGOs in Iloilo, Philippines. The case studies provide examples of different types of adaptation interventions – for example, planned resettlement and in situ adaptation − and are widely considered examples of best practice in the field. Data were collected through surveys, interviews and participant observation. The thesis is presented in two parts. The first analyses the rationale, objectives, implementation processes and distributional impacts of the projects. It finds that while the implementing agencies placed great importance on participatory planning, local power dynamics and political processes distorted these good intentions, resulting in an unequal distribution of project benefits. Consequently, the projects failed to improve the climate resiliency of the most vulnerable members of the target communities. The second part of the thesis articulates possible alternatives to mainstream conceptions of 'best practice' and 'just adaptation' that take into account how communities can exploit openings in political, economic and knowledge systems to advance their needs and aspirations. Rather than relying on a codified set of tools supported by mainstream development, the examples presented demonstrate the potential for multiple, diverse and grounded pathways towards just adaptation. The major contribution of this thesis is that it critiques and adds to the existing critical adaptation literature and presents new ways of thinking about how to achieve just adaptation.

Key words: climate change, climate change adaptation, resettlement, capabilities approach, postdevelopment, Philippines

Statement of Authorship

This thesis includes work by the author that has been published or accepted for publication as described in the text. Except where reference is made in the text of the thesis, this thesis contains no other material published elsewhere or extracted in whole or in part from a thesis accepted for the award of any other degree or diploma.

No other person's work has been used without due acknowledgement in the main text of the thesis.

This thesis has not been submitted for the award of any degree or diploma in any other tertiary institution.

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Abbreviations

ADB	Asian Development Bank
ANOVA	Analysis of Variance
BPO	Business Process Outsourcing
CBARAD	Community-Based Adaptation and Resilience Against Disasters
CFE-DM	Centre for Excellence in Disaster Management
DFID	Department for International Development
DILG	Department of Interior and Local Government
DPWH	Department of Public Works and Highways
CCA	Climate Change Adaptation
COMSCA	Community-Managed Savings and Credit Association
DRR	Disaster Risk Reduction
FGD	Focus Group Discussion
HAP	Humanitarian Accountability Partnership
HNGO	Highlands Non-Governmental Organisation
HUDCC	Housing and Urban Development Coordinating Council
ICEB	Interlocking Compressed Earth Blocks
ICUPAO	Iloilo City Urban Poor Affairs Office
IFCP	Iloilo Flood Control Project
IPCC	Intergovernmental Panel for Climate Change
JICA	Japan International Cooperation Agency
LGU	Local Government Unit
KABALAKA	Kapisanan ng Bayanihan Laban sa Kahirapan (Savings Group)
MPA	Marine Protected Area
NAPA	National Adaptation Plans of Action
NDRRMC	National Disaster Risk Reduction Management Council
NGO	Non-Governmental Organisations
NPA	New People's Army
OCD	Office of Civil Defense
OIC	Officer-in-charge
PDAF	Priority Development Assistance Fund
PHP	Philippine Peso
PO	People's Organisation
RA	Republic Act
RAP	Resettlement Action Plan
RwD	Resettlement with Dbevelopment
SIDA	Swedish International Development Cooperation Agency

SGLG	Seal of Good Local Governance
SPSS	Statistical Package for the Social Sciences
TAMPEI	Technical Assistance Movement for People and the Environment Inc.
TASFA	Tambaliza Fisherfolks Association
UDHA	Urban Development and Housing Act of 1992
UN	United Nations
UNDP	United Nations Development Programme
UNDRR	United Nations Office for Disaster Reduction
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
VSLA	Village Savings and Loans Associations
WB	World Bank

Chapter 1: Introduction

1.1 Introduction

This research interrogates climate change adaptation as a complex field of development practice. The Intergovernmental Panel for Climate Change (IPCC), the world's leading body for assessing the science related to climate change, defines adaptation as "…the process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities" (IPCC, 2014, p. 118). It is widely acknowledged climate change will intensify over the coming years, and adaptation interventions are currently being planned and implemented all around the world. These developments are especially relevant to a developing and disaster-prone country like the Philippines. The 2018 World Risk Report ranks the Philippines as the third most vulnerable country in the world to natural disasters (Heintze et al., 2018). Significant research and interventions have consequently been undertaken by academic institutions, non-governmental organisations (NGOs), civil societies, and private corporations to help Filipinos adapt to a changing climate.

Climate change adaptation is now high on the development agenda, and significant financial resources are being made available for adaptation projects and interventions. These widespread efforts to bolster adaptive capacity warrant further attention, in particular, to ensure they are addressing the needs of the most vulnerable. The literature is already replete with examples of how adaptation programmes have displaced, marginalised, and negatively impacted people and communities around the world (Nagoda & Nightingale, 2017; Nightingale, 2017; Sovacool & Linnér, 2016). Scholars warn that adaptation investments may build the adaptive capacity of some but undermine that of others and may ultimately produce winners and losers (O'Brien & Leichenko, 2003; Thomas & Twyman, 2005). As a consequence, all adaptation interventions are imbued with a range of thorny justice and equity issues.

One important yet controversial example of an adaptation intervention is planned resettlement. The IPCC considers the resettlement of at-risk communities living on low lying islands and coasts a logical response to rising sea levels (Oppenheimer et al., 2019). Its authors argue that "well designed and carefully implemented programmes … can improve housing standards and reduce vulnerability" (Ibid, p. 102). However, recent history has shown that those who have been resettled in the name of climate change have often been rendered worse off and more vulnerable to climate and other livelihoods risks as a result (Rogers & Wilmsen, 2019; Scudder, 2011; Wilmsen & Adjartey, 2020; Wilmsen & Webber, 2015). Resettlement is one of the many strategies for responding to climate change that has been incorporated into the development lexicon; a self-evident set of concepts and practices that seems resistant to being questioned. The growing

deployment of resettlement as an adaptation strategy means there is a pressing need to study the processes and outcomes of completed resettlement projects – a gap in the literature this research seeks to address. A resettlement project in the Philippines that is highly acclaimed will be carefully examined to see how people's lives have been affected after being relocated.

Because of its potential to be maladaptive, resettlement scholars argue that resettlement should only ever be considered as a last resort (Miller, 2019; Wilmsen & Rogers, 2019; Wilmsen & Webber, 2015). But research on how in-situ adaptation works, especially at the local scale, is limited. According to Sovacool (2018, p. 184), the majority of research on adaptation "centres on providing credible estimates of adaptation costs, or conducting vulnerability assessments, or trying to guide future adaptation strategies at the sectoral or national level". This thesis heeds the call of critical scholars who argue more research is needed on how power and politics shapes the composition and distribution adaptation interventions and influences the ability of local communities in the Global South to respond to climate change (Eriksen et al., 2015; Mikulewicz, 2018; Taylor, 2014). To this end, a second study site in the Philippines was chosen where a number of in-situ adaptation interventions were delivered by international NGOs whose aim was to bolster climate resilience of the target communities. The study, therefore, analyses and compares to important modalities for adaptation intervention: resettlement and in-situ adaption.

Drawing upon three important sets of literature − just adaptation, capabilities, and postdevelopment − this research analyses the various adaptation interventions implemented by local governments and NGOs in communities that are frequently affected by typhoons. It analyses how these adaptation projects were implemented, who was involved and how the benefits and costs were distributed. The thesis is composed of two main parts. Through two case studies, the first part provides a critical examination of adaptation practices to uncover how political and power dynamics shape people's lived experiences of adaptation interventions. The second part explores alternative adaptation pathways, highlighting how the diversity of knowledges, skills, and relationships possessed by communities can be used to supplement mainstream norms pertaining to adaptation interventions. This research contributes to the field of adaptation studies by deepening our empirical understanding of the social, economic and political dimensions of contemporary adaptation practices and their consequences for the most vulnerable members of the targeted communities, and then imagining what a more just approach to adaptation might look like in the future.

1.2 The Emergence of Climate Change Adaptation

Climate change became an issue of global concern in the 1980s. This led to a proliferation of studies attempting to understand and address its impacts. The IPCC defines climate change as the "change in the state of the climate that can be identified by changes in the mean of its properties and that

persists for an extended period, typically decades or longer" (IPCC, 2014, p. 120). Its Fifth Assessment Report identifies three significant observed changes in the climate system: (1) the atmosphere and the ocean have warmed; (2) the amount of ice and snow have diminished; and (3) the sea level has risen. The possible consequences of climate change include: global warming, melting of glaciers and ice caps, more frequent and severe precipitation, and increasing ocean temperature and acidification (IPCC, 2014). The IPCC claims the observed increase in the Earth's temperature has reached rates unseen in previous decades. As such, failure to address the impacts of climate change will likely cause substantial damage to livelihoods, settlements, and infrastructures (UNDP, 2019).

Climate change scholars identify two major pillars for climate action: mitigation and adaptation (Ayers & Huq, 2009; Smit & Pilifosova, 2001; Tol, 2005). Since climate change entered the international policy arena several decades ago, the main focus of action has been mitigation (Hasson et al., 2010). When the United Nations Framework Convention on Climate Change (UNFCCC) was formed in 1992, it stated the goal of mitigation was to "stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous interference with the climate system" (United Nations, 1992, p. 4). For a long time, adaptation was regarded as a 'last resort' if mitigation did not work, and was often referred to as mitigation's 'poor cousin' (Roger et al., 2007). While adaptation was included as a response to climate change in the UNFCCC document, very limited attention was given to it. Moreover, the Kyoto Protocol adopted in 1997 also focused primarily on mitigation, obligating industrialised countries to reduce their greenhouse gas emissions (UNFCCC, 2010a).

Scholars have attempted to explain why adaptation was initially sidelined in global climate change discussions. Grasso (2010a) argues that mitigation seemingly provides a straightforward *solution* to climate change, while adaptation can be perceived as a way of co-existing with climate change. Furthermore, while mitigation was seen as capable of addressing climate change on a global scale, adaptation was generally seen either as a 'defeatist' option or as a localised solution that could undermine global mitigation efforts (Ayers & Forsyth, 2009) and therefore might demonstrate a country's lack of commitment to mitigation objectives (Burton, 1994).

From 2000 onwards, more attention was paid to the idea of adaptation (Huq et al., 2018). The IPCC's Third Assessment Report in 2001 provided the impetus for an increase in focus on adaptation, establishing the fact that some impacts of climate change can no longer be avoided (Houghton et al., 2001). Its Fourth Assessment Report brought adaptation onto equal or even higher footing with mitigation, highlighting that "adaptation will be necessary to address impacts resulting from the warming… [and that] more extensive adaptation than is currently occurring is required to reduce vulnerability to future climate change" (Parry et al., 2007, p. 19). The UNFCCC (2010a),

through its 2007 Bali Action Plan, identified adaptation as one of four independent pillars of a comprehensive climate change response (together with technology development, financial support, and mitigation). This increasing emphasis on adaptation culminated in calls to "strengthen the global response to the threat of climate change… by increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience" in the 2015 Paris Agreement (UNFCCC, 2015, p. 3). As evidence of accelerating climate change has accumulated in recent years, conversations in academic and government circles have shifted from discussions about whether adaptation is necessary to *how* best to adapt (Biagini et al., 2014; Huq et al., 2018).

The growing interest in adaptation has translated to a range of proposals and interventions by governments and NGOs. According to the UNFCCC, governments of developed countries have set a goal to mobilise 100 billion USD per year by 2020 to support adaptation projects in developing countries (UNFCCC, 2010b). Facilitating adaptation is now a key policy objective of the major international development institutions (Mikulewicz, 2018). The World Bank, for example, requires the issue of adaptation to be considered during the design and operation of all its development projects to ensure they are climate resilient (World Bank, 2011). Since 2001, developing countries have also been urged by the UNFCCC to develop National Adaptation Plans of Action (NAPAs) – a document that lists their adaptation priorities. Countries are asked to identify who is at risk from climate change and to design technical and institutional measures to respond to these risks. Adaptation has thus been mainstreamed into the development strategies of national governments across the world. Taylor (2014, p. 51) summarises the logic of requiring all development programmes to take account of the issue by saying, "without climate change adaptation, the gains of development could be lost."

According to Nightingale (2017, p. 11), climate adaptation is underpinned by two assumptions: "one, biophysical change combined with marginalisation creates vulnerability to climate change, and two, the best way to adapt is through a variety of technical and institution building measures". Under the first assumption, vulnerability to climate change is primarily conceptualised in terms of exposure to natural hazards or as a socio-economic issue. Emphasis is placed on proximate causes of climate risk, such as differing geographical exposure to extreme weather events, rather than the structural or political drivers of the distribution of these risks (Bassett & Fogelman, 2013; Mikulewicz, 2018). As a result, local contexts, alternative forms of knowledge and worldviews, and the role of politics and power relations in the production of vulnerability have been neglected. With regard to the second assumption, adaptation is assumed to be most effectively achieved through technical and institution-building measures (Nightingale, 2017). Informed by the hazards approach, proponents recommend corrective and top-down solutions to help people adjust to climate change. Examples include infrastructure development such as the construction of seawalls and dikes, introduction of new seed varieties to protect against droughts, and resettling people in anticipation

of sea level rise or intense flooding (Ayers & Forsyth, 2009; Robbins, 2019; Sovacool, 2011). I hereafter refer to this techno-managerial approach to adaptation intervention as "mainstream adaptation".

Both assumptions are overly simplistic and ignore the wider socio-economic and political systems in which governments, NGOs, and communities are embedded. Research from the field of political ecology has already challenged the first assumption. It recognises that society is socially, geographically, and politically differentiated, making some people more vulnerable to climate change risk than others (Adger et al., 2004; Eriksen & Lind, 2009; Manuel-Navarrete, 2010). This research demonstrates that biophysical change is always shaped by socio-economic and political mechanisms (Ribot, 2014). The second assumption is also disputed by an increasing number of critical scholars who suggest that mainstream adaptation measures are actually less equitable and sustainable than expected (Juhola et al., 2016) and that politics and power relations interrupt the fair distribution of the benefits of adaptation interventions, both in terms of bolstering livelihoods and climate resilience (Mikulewicz, 2018; Nagoda & Nightingale, 2017; Ojha et al., 2016). Taylor (2014, p. 7) likewise contends the current adaptation literature is heavily technocratic, "full of claims about vulnerable peoples and stressed ecosystem… [but] short of analytically grounded analyses that shed light on socio-ecological relations that produce social vulnerability". Instead of categorising the vulnerable, scholars are calling for a 'radicalisation' of the concept of adaptation that places power and politics at the forefront of analysis in order to ensure that adaptation programmes are transformative, viable, and more attuned to the needs of the marginalised (Dow et al., 2013; O'Brien, 2012; Taylor, 2014).

This thesis responds to these calls to interrogate the underlying assumptions and agendas that shape the practice of climate change adaptation (Ireland & McKinnon, 2013; Miller & Bowen, 2013). There is a sense of urgency to this endeavour as adaptation is already being driven forward by governments, international agencies, NGOs and much academic literature. A number of scholars contend that carefully planned adaptation has the potential to reduce vulnerability and the negative effects of climate change (Moser & Boykoff, 2013; Osbahr et al., 2010; Smit & Pilifosova, 2001). The IPCC also asserts that "climate adaptation, if planned and integrated well, has the potential to create opportunities to foster sustainable development" (Denton et al., 2014, p. 1109). Yet, a number of recent studies demonstrate that adaptation interventions often lead to impoverishment and poverty (Barnett & O'Neill, 2012; Rogers & Xue, 2015; Wilmsen & Webber, 2015). What's more, the first principle of the resettlement policies of the large development institutions states that resettlement should be avoided wherever possible due to multitude of negative effects that result from involuntary displacement (Wilmsen & Webber, 2015). This thesis sits at the confluence of these ongoing debates. It explores the lived experience of climate adaptation and then seeks out possible alternatives to the predominant technocratic approach to adaptation interventions.

1.3 Dominant Approaches to the Study of Justice

Climate change adaptation interventions are unevenly distributed across communities and produce winners and losers within communities. Questions of justice are therefore embedded in all adaptative interventions. A central question of this thesis is: what constitutes 'just adaptation'? This section presents a brief overview of how the major theories of justice have been deployed in the adaptation literature to answer this question. The objective, here, is not to provide a detailed discussion of the expansive literature of justice theory (for such an exposition see (Kolm, 2002; Roemer, 1996), rather to lay out how new theories of justice have emerged over time and how these innovations have shaped our thinking about what constitutes ' just adaptation' (Schlosberg & Collins, 2014).

Table 1.1 summaries some of the most important theoretical approaches to the issue of justice. Rawls' definition of justice is seminal. He defines justice as the fair allocation of material and social benefits among people over space and time (Rawls, 1971). For Rawls, just outcomes depend upon the fair distribution of social, economic, and political 'goods' and 'bads' (McDermott et al., 2013). The metric of Rawls' theory of justice are "primary goods" which he defines as "things citizens need as free and equal persons living a complete life" (Rawls, 2001, p. 57). In a Rawlsian sense, justice is only achieved if resources are distributed in such a way that the greatest benefit accrues to the least advantaged in society (Cohen, 1989).

Table 1. 1: A summary of the different approaches to justice in the literature

Scholar	Topic	Conceptualisation of Justice
John Rawls	Justice as Fairness	Fair allocation of material and social benefits over space and time.
Iris Young	Justice as Recognition	Justice requires acknowledging and attending to group differences.
Charles Taylor	Two types of recognition	Justice involves equal dignity of all and the politics of difference
Axel Honneth	Three spheres of recognition	Justice requires freedom from physical threats, political rights and recognition of cultural traditions
Nancy Fraser	Justice as Participation and Recognition	Justice involves parity of participation
David Schlosberg	Distribution, recognition, and procedure	Justice as interdependence of distribution, recognition, and procedure
Amartya Sen, Martha Nussbaum, and David Schlosberg	Capabilities-based approach to Justice	Justice entails equality in the space of capabilities

The Rawlsian framework's focus on distributive outcomes has been critiqued by succeeding scholars who lament the lack of attention given to the processes that bring about injustice in the first place. Scholars like Young, Taylor and Honneth emphasise the importance of *recognition* as a key component of justice. Young (1990, p. 3) argues that justice "requires explicitly acknowledging and attending to group differences in order to undermine oppressions". She also stresses the importance of norms, symbols, languages, and practices in any examination of justice. Similarly, Taylor (1994) calls for both a 'politics of dignity' which recognises people's rights and immunities equally, and a 'politics of difference' which recognises the unique identity of any individual or group. Honneth (1995) contends that recognition comprises of three components: freedom from physical threats, political rights and a respect of people's cultural traditions. All three scholars also recognise a lack of recognition of the rights of individuals and communities – let alone their very existence − as a form of injustice (Schlosberg, 2007).

Other theorists argue that we need not just a bivalent conceptualisation of justice − encompassing both distribution and recognition − but a trivalent one. Fraser (1998) argues that distributive injustice and misrecognition can hamper people's participation in political institutions. She stresses that "when patterns of disrespect and disesteem are institutionalised… they impede the parity of participation, just as surely as do distributive inequities" (Ibid., p. 26). Similarly, Schlosberg's conception of justice focuses not only on the distribution of 'goods' and 'bads' but also on the processes that produce unjust outcomes, stating "justice… must be integrated into a thorough, comprehensive and pluralist political understanding of the term" (Schlosberg, 2007, p. 40). He integrates concerns about distribution, procedure and recognition into a broad theory of justice, proposing that "rather than examine recognition, distribution, and process as three different conceptions of justice, all of these should be understood as necessary components of a more broad set of factors necessary for our lives to function" (Ibid., p. 49).

In summary, theories of justice have become nuanced over time, moving beyond the distributional focus of the early Rawlsian framework. Schlosberg (2007) notes that the point is not to replace distributive theories of justice but to explore the possibility of combining numerous concerns into a multifaceted understanding of justice. He demonstrates how this can be done by proposing a capabilities-based conception of justice. It is to this framework that I turn to next.

1.4 A Capabilities Approach to Justice

The previous section described how 'justice' has traditionally been framed in terms of assessing distributional outcomes, and that scholars have attempted to move beyond this approach to incorporate notions such as respect, recognition, inclusion and participation. Schlosberg (2007) argues the capabilities approach can incorporate all these concerns under a comprehensive and

broad framework. He states "rather than an alternative to other theories of justice… we can understand a capabilities approach as more broadly encompassing many concerns of justice theorists" (Schlosberg, 2012b, p. 168).

The idea of the capabilities approach was initially introduced by Sen in his 1979 Tanner Lecture as "an intellectual discipline that gives a central role to the evaluation of a person's achievements and freedoms in terms of his or her actual ability to do the different things a person has reason to value doing or being" (Sen, 2009, p. 16). Sen attempted to expand the notion of justice beyond a distributive focus to emphasise the importance of people's functioning, agency, and well-being (Pressman & Summerfield, 2002). The central question of justice for Sen is "the promotion and expansion of valuable capabilities" (Sen, 1999b, p. 1). Sen defines capabilities in terms of freedom, a set of opportunities to choose and to act. Aside from Sen, another significant scholar who developed the capabilities approach into a partial theory of social justice is Martha Nussbaum. She is likewise interested in "not just about the resources that are sitting around, but about how those do or do not go to work" (Nussbaum, 2000, p. 71) . Both Sen and Nussbaum contend that a person with an expanded capability set has more opportunities to lead a life he or she values. On the other hand, limiting a person's capabilities is tantamount to committing injustice (Schlosberg, 2012a). The central argument of a capabilities approach is justice should not be measured simply in terms of distributive outcomes but also in how these distributions affect the functioning and well-being of people. This shifts the analytical focus from *who gets what* (and through what mechanisms) to assessing what people are able to be and do (Nussbaum, 2000).

Sen and Nussbaum's conception of justice incorporates the distributional, recognition and participation issues that have been central to contemporary discussions of justice in the adaptation literature (Schlosberg, 2012b). For instance, Nussbaum (2000) argues that people need to be recognised and treated equally with dignity and respect, concurring with those who see recognition as a critical component of adaptation justice (Scholsberg, 2007). Similarly, calls for participation are echoed in Sen's (1999b, p. 10) call for "public deliberation" and Nussbaum's (2000, p. 71) call for "control over one's environment". A key strength of the capabilities approach is that it combines distributive, recognitional, and participatory justice issues under one rubric whilst elucidating the causal connections these distinct concepts. As such, it can also accommodate several other important issues such as income inequality and democratic rights (Schlosberg & Carruthers, 2010).

Several scholars have argued explicitly in favour of using the capabilities approach to frame and understand the link between adaptation and justice (Grasso, 2007; Holland, 2017; Schlosberg, 2012a). For instance, Grasso (2007, p. 240) sees the capabilities approach as particularly useful in allocating adaptation resources, arguing the effectiveness of any adaptation response should not just be based on goods alone but "in the possibility of gaining effective protection against climate

impacts". Holland (2017) proposes that just adaptation should be conceived in terms of the political capabilities of vulnerable groups to shape and influence adaptation decisions. Schlosberg (2012a) contends that a capabilities approach can be used to frame adaptation policies because it places concerns of justice at its core. Schlosberg and Collins (2014) similarly argue that the capabilities approach mirrors and addresses the demands and principles of the climate justice political movement.

For these reasons, the capabilities approach is deemed to be an appropriate theoretical framework to use in this study of climate adaptation. The capabilities approach will be used as an evaluative framework within which to assess the adaptation interventions implemented by governments and NGOs in the Philippines. The term *'evaluative'* refers to the analyses where particular values are used to evaluate a state of affairs (Robeyns, 2017) which, in this case, are the adaptation interventions (or projects). More specifically, the evaluative exercise includes an assessment of whether the interventions are doing what they claim to do and whether people's levels of adaptive capacity have increased or decreased as a result. In addition to evaluating real-world adaptation interventions, this study also seeks to uncover the socio-political conditions that hinder the capabilities of some groups whilst enhancing those of others.

This research does not only seek to explore the injustices and expose the socio-political conditions that create people's vulnerability; it also attempts to chart ways forward to achieve just adaptation. Thus, instead of just asking "what is", it also endeavours to explicate "what could be" when pursuing adaptation justice. In this regard, the capabilities approach provides a normative framework for assessing the strengths and weaknesses of alternative ways of doing things. The point is not to dismiss planned adaptation but to bring to the fore innovative and unrecognised ways of adapting to climate change. In doing so, this research also engages with the postdevelopment literature, which is discussed in the next section.

1.5 Postdevelopment as a Tool to Re-imagine Alternatives to Mainstream Adaptation

This research engages with postdevelopment theory to answer the following important question: how are local communities responding to the impacts of climate change in their own diverse ways? A majority of scholarship on adaptation is focused on top-down assessments of the distribution of climate risks, such as exposure to extreme weather events, as well as top-down interventions to reduce these risks. According to Bassett and Fogelman (2013), approximately 70% of published articles in climate change journals subscribe to the hazards school, which frames people's vulnerability as a function of a range of proximate causes such as unsafe locations, strong hazards, and lack of technology (Smit et al., 2000; Smit & Pilifosova, 2001; White et al., 1978). The objectives of adaptation interventions are, therefore, pragmatic: to make people more "climate

resilient" (Pelling, 2011) through universalising, top-down, and technocratic interventions (Mikulewicz, 2018; Tanner & Allouche, 2011; Tschakert & Machado, 2012; White et al., 1978). However critical scholars have shown that a number of adaptation programmes can themselves reinforce and contribute to the vulnerability of the marginalised (Eriksen et al., 2015; Ford et al., 2011; Nagoda & Nightingale, 2017). To address this, there is a need to uncover multiple pathways to adaptation. Rather than being grounded in a one-size-fits-all model to adaptation, alternatives to mainstream adaptation should build on locally-based knowledges, skills, and resources. In general, efforts to re-imagine development is a key tenet of postdevelopment theory, with the goal of doing development differently (Gibson-Graham, 2005; McKinnon, 2011). This thesis is hence also informed by postdevelopment principles to uncover possible alternatives to techno-managerial forms of adaptation. It seeks to uncover the diverse adaptation practices that exist in local communities that often occluded − or simply ignored − by mainstream approaches.

Postdevelopment theory became prominent in the development studies in the 1990s through the works of Ferguson (1994), Escobar (1995), and others (Esteva & Prakash, 1997, 1998; Rahnema & Bawtree, 1997; Sachs, 1992). These scholars agree that the promises made by Western countries and international development institutions to bring prosperity and an improved quality of life to the developing world had not been fulfilled. Issues such as poverty and inequality persist despite several decades spent by the development sector to address them. Drawing from postcolonial and poststructural perspectives, postdevelopment scholars stress that colonial relations of oppression have re-emerged through the language and practice of development (Sidaway, 2007; Ziai, 2004). According to Sachs (1992, p. 1), "delusion and disappointment, failures and crimes have been the steady companions of development and they tell a common story: it did not work". Postdevelopment scholars highlight the need to be more self-reflexive about the way development is done (Kippler, 2010).

A number of postdevelopment principles have shaped and influenced the development sector in the past four decades. Three key principles are particularly relevant in this research project. The first is the need to question Western notions of development and to validate and valorise non-Western and locally based knowledges and resources. The second is the need to appreciate diversity and difference; that people can choose from multiple pathways in their pursuit of justice and well-being. The third is the need to go beyond critique to articulate innovative solutions to the problem of injustice. Each is now explored in turn.

First, postdevelopment scholars question development perspectives that privilege Western knowledge, technology and capitalist growth as the only solution to poverty (Escobar, 1995; Esteva & Prakash, 1997). According to De Sousa Santos (2004, p. 239), this kind of thinking has produced " the ignorant, the residual, the inferior, the local, and the non-productive that need development by the scientific, the advanced, superior, global, or productive realities". Postdevelopment scholars

argue that by casting development professionals as experts, and local residents as compliant subjects, mainstream development programmes have largely been framed as legitimate and necessary. Drawing from the principles of poststructuralism, postdevelopment deconstructs mainstream development by unhinging it "from the European experience of industrial growth and capitalist expansion" (Gibson-Graham, 2011, p. 226). Rather than looking for a codified and universal set of approaches and tools, postdevelopment scholars argue that the focus should be on the 'local', 'grassroots', and 'on the ground' (Esteva & Prakash, 1997, 1998). In a similar manner, Escobar (1995, p. 222) contends that "there are no grand alternatives that can be applied to all places or all situations". In line with these arguments, this research project will highlight the local forms of knowledge and traditions that provide alternative pathways for adaptation. It shows that a postdevelopment approach can open up new ways to see and value adaptation efforts that are already taking place in local communities.

Second, postdevelopment scholars emphasise the importance of difference and diversity, which is being undermined by mainstream development practices with its modernist certainties. They believe that postdevelopment approaches uncover the diverse ways that people act to shape and influence development outcomes (McKinnon, 2011). Rendering the many and varied ways of being in the world as legitimate and valuable allows for the possibility of coming up with innovative and equitable solutions to poverty and injustice (De Sousa Santos, 2014; Gibson-Graham, 2006). According to Ireland and McKinnon (2013, p. 158), a postdevelopment approach to adaptation "helps us to see nascent possibilities for adaptation that are already unfolding in diverse localities". This research project, therefore, draws from postdevelopment theory to uncover the multiple and diverse initiatives of local communities in adapting to climate change --- strategies that are quite distinct from mainstream approaches to adaptation.

Finally, postdevelopment scholars also move beyond critique to re-imagine and re-shape ways of doing development (Gibson-Graham, 2005; McGregor, 2009). While it draws from a postcolonial lens to uncover relationships of oppression and domination, it does not simply stop there. A postdevelopment lens also helps envision new possibilities. Following an understanding of power as diffuse, ever-present, and involving diverse modalities (Allen, 2003; Foucault, 2000), scholars have increasingly focused on a more hopeful project, moving beyond critique to proposing solutions that empower alternative voices, practices, and worldviews (Gibson-Graham, 2008; McGregor, 2007; McKinnon, 2008). McGregor (2009, p. 1692) further argues that by articulating alternatives, recent postdevelopment scholars are avoiding "ironically reifying the power and influence of development". They are doing 'hopeful geography' (Gibson-Graham, 2008) by recasting the 'underdeveloped' as mines of possibilities and by making credible what was once dismissed as non-existent (De Sousa Santos, 2014). Gibson-Graham (2011) also clarifies that the postdevelopment agenda is not anti-development. She argues that the challenge of development is not to give up on development entirely but to imagine and implement development differently. In a similar fashion,

this research project does not call for a complete rejection of the very idea of adaptation. Instead, it seeks to imagine new ways of practicing adaptation.

In summary, Gibson-Graham's (2005, p. 6) account of postdevelopment is particularly relevant for this thesis: "a mode of thinking and practice that is generative, experimental, uncertain, hopeful, and yet fully grounded in an understanding of the material and discursive violences and promises of the long history of development interventions". The unjust and inequitable processes and outcomes of climate adaptation interventions are thus detailed in the initial results chapters. But there is more to the story than the monolithic accounts of inequality. Chapter seven also charts a hopeful path forward, believing that the concept and practice of just adaptation is possible.

This thesis draws upon a variety of literatures – just adaptation, capabilities and postdevelopment – and so a few words on the conceptual tension that exists between them is in order. The first two traditions define and categorise justice in adaptation by imposing a specific lens on how adaptation interventions should be; for instance, that projects should be assessed in terms of distributive, procedural and recognitional justice (Bulkeley et al., 2013; Schlosberg, 2012a). Similarly, the metric of justice from a capabilities perspective is the enhancement and development of people's capabilities. For example, Robeyns (2003a, p. 24) contends that Nussbaum's capabilities approach is universalistic, as she "argues for a well-defined but general list of central human capabilities… and believes that all governments should endorse these capabilities". Thus, Nussbaum argues that *all* items on the list are valuable in themselves and should not be traded off against each other. However, these prescriptive and deterministic theoretical models do not sit well with the poststructuralist foundations of a postdevelopment approach. A postdevelopment lens eschews universalistic or absolutist claims about justice (Ireland & McKinnon, 2013). The conception of justice in adaptation, from a postdevelopment perspective, shifts depending on where one is and from which position he or she is speaking from. Consequently, it recognises the multiple, locally-specific ways in which adaptation can be conceived and pursued. Finding a resolution to this epistemological tension, however, is not an objective of this study.

1.6 Research Questions and Aims

This research project attempts to address the following questions:

1. *How are the impacts of climate change adaptation interventions distributed?* This question addresses the issue of distributive justice. The differential impacts of the adaptation programmes carried out by the international NGOs on peoples' lives will be discussed and analysed in Chapter 5. It examines who has the power to assert their rights, interest and

dignity and, thereby, ensure their capabilities (and interests) are enhanced by adaption interventions, and who does not.

2. *Who is targeted for the climate change adaptation interventions and what factors play a role in their selection?* This question covers issues of procedural justice and recognitional justice and will be tackled in Chapter 6. People's degree of participation in the adaptation interventions and the role that politics played in the selection of sites and communities will be thoroughly explored.

3. *What are diverse and locally-based ways that communities are responding to the pressures of climate change?* This question will be addressed using a postdevelopment lens. The multiple and creative ways that local residents are engaging and working with the institutions in charge of adaptation to advance their own interests are detailed in Chapter 7.

By addressing these questions, this thesis re-thinks the concept and practice of climate change adaptation. It pushes beyond traditional frameworks of justice when assessing whether a set of real-world adaptation projects in the Philippines were (un)just. In doing so, it provides concrete examples of how the three main ways of conceptualising justice are causally linked; in particular, how procedural (or participatory) and recognitional justice underpins distributive justice. Moreover, this research does not frame distributive, procedural, and recognitional justice solely in terms of the (re)distribution of resources, income and climate risk. Instead, following Sen (2009) and Nussbaum (2000), it assesses justice in terms of the development and fulfillment of people's capabilities. Proposals to use the capabilities approach have been increasing, but the existing research is highly theoretical in nature and empirical studies remain scant. Finally, this study explores how postdevelopment principles can be used to imagine new approaches to pursuing climate adaptation as well as recognise the innovation already taking place at the local level in the developing world. With the exception of Ireland and McKinnon (2013), postdevelopment scholars have little to say explicitly about climate adaptation. This study, therefore, adds to the small but promising literature that seeks to re-imagine what just adaptation intervention can and should entail.

1.7 Structure of the Thesis

This thesis is organised into eight chapters. A visual map of the chapters is provided in Figure 1.1.

Figure 1. 1: A visual map of the chapters of this thesis
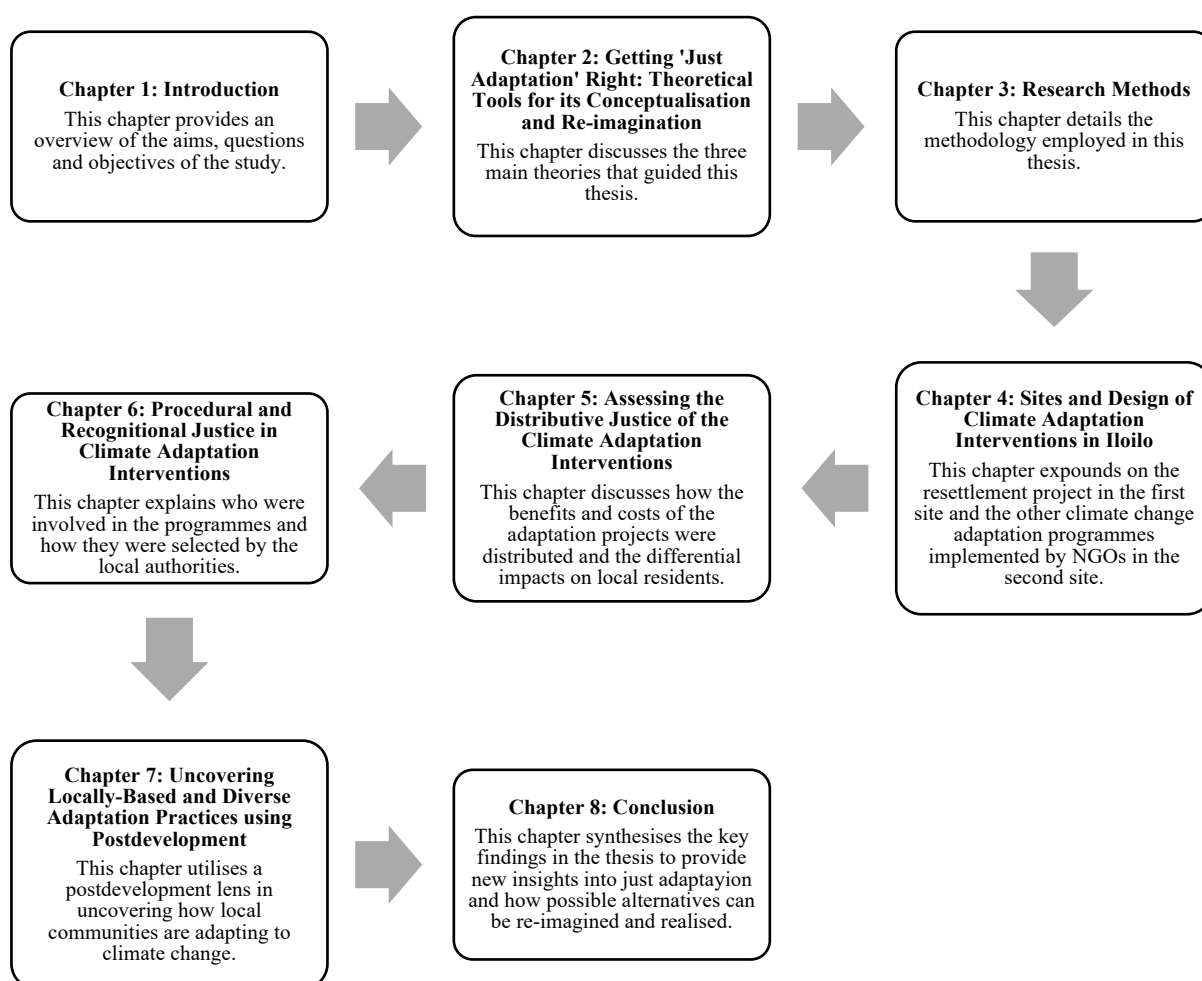
Following this introduction, Chapter 2 positions this dissertation in relation to the relevant literatures in three ways. First, it locates this research in the wider climate adaptation literature, highlighting justice as a critical component of any adaptation project. Recent studies reveal that adaptation programmes can benefit some groups while marginalising others. This study contributes to the exciting new literature that is concerned with adaptation justice and the political processes that drive (un)just outcomes. Second, the chapter describes the capabilities approach and argues in favour of moving beyond the mainstream approach of framing justice solely in terms of distributive outcomes and focusing, instead, on helping people develop the capabilities needed to adapt to climate change on their own terms. In the third section, the chapter brings postdevelopment theory to the fore. It argues that such an approach enables a framing of adaptation that moves beyond critique and makes space for local and community-based efforts to be recognised and supported so that more just outcomes can be achieved.

Chapter 3 describes the research methodology employed in the study. It justifies the use of a mixed methods research design and explains why Iloilo (Philippines) was chosen as a study area; in short, because it is a province exposed to a range of extreme weather events and was the location of a

number of adaptation interventions. The region is also widely regarded as a successful example of climate adaptation, winning numerous awards for disaster risk reduction and management (Cruz, 2019). These claims of success warrant closer inspection, especially in terms of who has benefitted and who has not. The chapter also describes the various techniques employed to analyse the qualitative and quantitative data collected in the field. Finally, it details the difficulties encountered in the field and the limitations of the research, more broadly.

Chapter 4 describes the climate change adaptation programmes that were implemented in the two field sites. At the first site, the research focussed on project that resettled 3,500 families at risk of severe weather events. The second field site is a small island with a population of 3,000 people on which three international NGOs, in collaboration with the local government, implemented a range of adaptation projects. The chapter presents the rationale, key objectives and targets of the adaptation programmes implemented at both sites. The empirical data were obtained from project documents and interviews with the implementing agencies.

Chapters 5 to 7 present the empirical findings of the thesis. Chapter 5 deploys the distributive conception of adaptative justice to assess whether the adaptation interventions implement in Iloilo, The Philippines, were just in terms of their distribution of resources and alleviation of climate risk. Utilising the capabilities approach, it also explores the impacts of the adaptation interventions on people's capabilities. Chapter 6 explores the concept of procedural justice and recognitional justice in more detail. It asks who is involved in the adaptation programmes and how they are selected. Chapter 7 explores how a postdevelopment approach can help uncover possible alternatives to mainstream adaptation practices that rely largely on technical expertise and top-down solutions. It illustrates how some communities in Iloilo are already engaged in diverse and community-based adaptation practices.

Finally, Chapter 8 presents the conclusion of the study. It synthesises the key findings to provide new insights into the concept of climate change adaptation. It also details a number of recommendations for further research that would help improve decision-making and policymaking pertaining to adaptation interventions in the future.

Chapter 2: Getting 'Just Adaptation' Right: Theoretical Tools for its Conceptualisation and Re-Imagination

2.1 Introduction

The onset of climate change has had significant environmental impacts around the world, including increased extreme weather events and rising sea levels (Goodess, 2013). While climate change affects every country, its devastating effects can be felt most acutely in developing countries. Climate change has the potential to reverse the significant development gains made in these countries and hamper further progress (Pachauri et al., 2014). Consequently, adaptation has been embraced not only by the climate change and disasters community but also by the development industry (Harrold et al., 2002). Interventions are being carried out around the world to help vulnerable communities respond to climate change. According to Ayers and Forsyth (2009), the majority of the adaptation plans follow the template proposed by the UNFCCC. The process begins with vulnerability assessments that identify at-risk communities and is followed by technical measures and institutional design.

However, just like any development intervention, adaptation projects have the potential to cause harm. Scholars have argued that adaptation interventions can be highly selective and reinforce existing inequalities (Eriksen et al., 2015; Nagoda & Nightingale, 2017). For example, Sovacool and Linnér (2016) identifies four different processes through which adaptation projects can be co-opted: (1) the enclosure of public assets into private hands; (2) the exclusion of the vulnerable from adaptation programmes; (3) the encroachment of ecosystems; and (4) the entrenchment of pre-existing disadvantages and vulnerabilities. Consequently, adaptation interventions can create winners and losers such that some groups can steer their lives towards a "climate proof" future while others cannot (Mikulewicz, 2018; Thomas & Twyman, 2005).

Despite the potential for injustice, the current adaptation literature does not shed much light on who participates in the projects, who benefits from them, and who lives with the consequences. Instead, the field is replete with claims about stressed ecosystems and vulnerable populations and beset by a reluctance to conceptualise how power and politics shape adaptation processes and outcomes (Nightingale, 2017). Critical scholars have argued that mainstream adaptation frameworks lack a thorough analysis of the political, social, and cultural forces at work (Peet et al., 2010; Taylor, 2014). Aside from addressing the manifestations of vulnerability, Ribot (2014) contends that it is also critical to interrogate the *sources* of vulnerability --- something that the current adaptation literature has also given insufficient attention to. Moreover, three core concepts – vulnerability, adaptive capacity, and resilience (IPCC, 2014) – have become *the* standard and legitimate way of conceptualising adaptation, its processes and impacts (Taylor, 2014). These concepts have worked

as "plug and play concepts that can be imported into any given setting to rationalise standardised policy planning across diverse socio-ecological contexts" (Taylor, 2014, p. 54). Because of their tendency to utilise familiar tools and set predetermined targets, "relying on the diverse and often spontaneous innovations of specific communities is not something that the development industry does well" (Ireland & McKinnon, 2013, p. 165). Small-scale adaptation efforts are rarely acknowledged as having significant impacts, especially if they are at odds with the mainstream approach.

The tendency of the adaptation industry to delegitimise adaptation initiatives that are not aligned with the mainstream conception of adaptation has curtailed the creativity needed to imagine alternative ways of adapting to climate change. Adaptation is increasingly conceptualised as merely a technical problem that demands top-down, and technocratic solutions as well as advances in applied sciences, new technologies and infrastructure. Furthermore, a limited conception of adaptation can lead to *maladaptation* − defined as "any changes in natural or human systems that inadvertently increase vulnerability to climatic stimuli" (IPCC, 2014, p. 80). Barnett and O'Neill (2010, p. 212) identify five types of maladaptation: (1) increase in emissions of greenhouse gases, (2) disproportionately burdening the most vulnerable, (3) high opportunity (environmental, social, or economic) costs, (4) reduction in incentives to adapt and (5) paths that limit choices available to future generations.

In recent decades, a critical body of literature has emerged that recognises the limitations of the mainstream conception of adaptation and its potential to generate maladaptation. Mikulewicz (2018) argues that recent framings of adaptation have started to give more attention to political processes and pre-existing socio-economic conditions. Instead of considering only biophysical risks, researchers are now starting to emphasise social relations and the dynamics of the broader political economy as contributors to people's vulnerability to climate change (Sovacool, 2018; Taylor, 2014). Also, they are paying more attention to how power and politics shape the processes and outcomes of adaptation programmes (Nightingale, 2015). This thesis seeks to contribute to this burgeoning literature. It engages with the politics of adaptation directly, uncovering how political power operates at the local level, determining who benefits from adaptation interventions and who does not.

This chapter positions the thesis within established research traditions, drawing upon the following theories: just adaptation, the capabilities approach, and postdevelopment theory. The chapter is presented in three parts. The first part discusses what just adaptation means and what it entails. The second part presents the capabilities approach as an evaluative framework for assessing whether adaptation is just. The third section engages with the literature on postdevelopment, which can help us imagine new and innovate ways of pursuing adaptation. These three conceptual frameworks,

combined, can help us more towards the goal of getting 'just adaptation' right both in theory and in practice.

2.2 Just Adaptation to Climate Change

It has become clear that adaptation interventions can increase the vulnerability of people who are already poor, marginalised, and the most exposed to climate risk. To make matters worse, these groups tend to contribute least to global emissions (Shi et al., 2016). Some scholars, therefore, argue that climate adaptation raises a range of questions about justice (Adger, 2006a; Moss, 2009; Paavola & Adger, 2006), and warn that the continued failure to address these questions will perpetuate patterns of development that exacerbate income and wealth disparities and force the most vulnerable members of societies to bear the greatest burden of climate risk (Malloy & Ashcraft, 2020).

The literature on 'climate justice' and 'just adaptation' has significantly grown over the last several years (Adger et al., 2006; Schlosberg, 2012a; Svarstad & Benjaminsen, 2020; Wilmsen & Rogers, 2019). In their review of this literature, Graham et al. (2018, p. 332) identify three main themes: (1) elaborating what just adaptation is; (2) identifying the challenges local governments face in developing and implementing local adaptation plans; and (3) ensuring local values are incorporated into the adaptation plans. This thesis seeks to contribute to this literature by advancing a more nuanced understanding of what just adaptation means and entails.

2.2.1 Distributive Approaches to Climate Justice

According to Schlosberg (2007), the first four decades of scholarship on climate justice was framed primarily using distributive theories of justice . Distributive theories of justice are concerned with "how, and to what end, a just society should distribute the various benefits (resources, opportunities, and freedoms) it produces, and the burdens (costs, risks, and unfreedoms) required to maintain it" (Brighouse, 2004, p. 2). The distributive theory of justice is heavily influenced by the work of John Rawls. In his classic book "A Theory of Justice", Rawls (1971) offers two principles of justice: first, that everyone should have the same political rights, and, secondly, that the resources should be allocated to ensure the most disadvantage people received the greatest benefits. These key principles inform many of the other theories developed to describe how the costs and benefits of climate change and adaptation interventions are distributed.

One of the most widely cited distributive approaches to climate justice is the 'causal' or 'historical responsibility' approach. It contends that some countries and people bear greater historical responsibility for greenhouse gas emissions than others and should contribute the most resources to

address climate change. Therefore, the burden of funding mitigation and adaptation efforts falls disproportionately on industrialised countries (Shue, 1999; Singer, 2004). However, the historical responsibility approach to justice has not escaped challenge. For instance, Caney (2005) wonders whether one's obligations stem from the actions of one's ancestors, and insists that it is difficult to hold someone morally accountable for the actions of others. Another critique is that even if non-industrialised countries did not directly cause climate change, they have nonetheless benefitted from industrialisation in different ways (Grubb, 1995).

Another distributive approach is the concept of 'equal per capita emission allotment' or 'carbon egalitarianism' (Jamieson, 2001; Traxler, 2002). Instead of focusing on past responsibility for emissions, proponents of this approach seek to give everyone equal entitlements to property rights over atmospheric space. They call for setting an 'equal emissions allowance' for each person on the planet. Singer (2004) proposes a cap-and-trade system whereby nations with higher emissions buy allowances from those with lower emissions, thereby providing compensation to nations that use less than their per capita allowance. However, Schlosberg (2007) criticises the per capita approach because it does not take into account the variation in the needs of people living in different places. Bell (2011) dismisses this approach for being overly simplistic, arguing, for example, that people living in mild climates have different needs compared to those living in harsher climates.

Yet another approach to climate justice that has gained traction over the years are rights-based frameworks. Caney (2006) claims that climate change violates the human right to life, health, and subsistence. Other theorists, such as those from the think tank EcoEquity, push this conception of justice even further, proposing that justice should focus on the "right of all people to reach a dignified level of sustainable human development free of the privations of poverty" (EcoEquity, 2008). In expanding its focus beyond equity to incorporate developmental concerns, Schlosberg (2007, p. 449) argues that rights-based frameworks are promising because they have begun the shift "from ideal notions of justice and equity to how the reality of climate change makes human lives more vulnerable in specific ways". But, similar to the per capita approach, rights-based frameworks do not pay explicit attention to differences across place in terms of need, and they remain vague as to what it takes to 'develop'. In fact, Schlosberg (2012b) maintains that the rights-based approach continues to frame justice in terms of income and resources.

Given the limitations of these perspectives, some scholars have challenged the theories of distributive justice on which they are premised. One of the earliest critiques came from Young. In her book "Justice and the Politics of Difference", Young (1990) denounces the theories of justice that ignore the social context in which unjust distributions exist. She calls for careful examination of the social, cultural and institutional conditions that bring about the unjust distributions in the first place. She argues that focussing solely on distribution is inadequate, and stresses the need to focus

on institutionalised forms of oppression and domination, especially among people who are under- or un-recognised in society (Schlosberg, 2007).

Another direct challenge to the distributive theory of justice comes from Fraser. She advocates for a bivalent conception of justice that pays attention to both distribution and recognition (Fraser, 2000). Her focus is both on maldistribution and on institutional inequities brought about by misrecognition. Participation is also seen as important in achieving just adaptation. Schlosberg (2007) argues that procedural justice and participation are necessary tools to achieve both distributive justice and political recognition. In a similar vein, Wood et al. (2016) argues that injustice results when opportunities for local people to participate in adaptation projects are constrained. This increasing focus on recognition and participation paved the way for the addition of two more components to the climate justice literature: procedural justice and recognitional justice.

2.2.2 A Procedural and Recognitional Lens to Climate Justice

The distributive theory of justice has been challenged in recent decades. Scholars have argued that adaptation justice is influenced not only by the distribution of burdens and benefits but also by the procedures that shape adaptation outcomes (Bulkeley et al., 2014; Fraser, 2010; Schlosberg, 2007). Procedural justice refers to how decisions are made and who is (and isn't) included in decision-making processes (Martin et al., 2015; Martin et al., 2014). Procedural justice focusses the analytic gaze on the institutional processes, rules and regulations, divisions of labour, and social structures that limit meaningful participation in decision-making fora and produce maldistribution (Schlosberg (2012a).

While there is consensus in the literature that participation is one of the core elements of procedural justice (Albin, 2003; Bäckstrand, 2011; Young, 1990), participation alone is insufficient in giving vulnerable people the power to shape adaptation decisions (Holland, 2017; Tomlinson, 2015). Critical scholars have shown that even if the vulnerable are officially included, they are rarely able to assert their interests (Eriksen et al., 2015; Nagoda & Nightingale, 2017; Ojha et al., 2016). Procedural justice, therefore, requires that all stakeholders have the opportunity to influence decision-making in ways that give them some meaningful control over the interventions carried out (Moser, 2013). Malloy and Ashcraft (2020, p. 5) explains that achieving just adaptation entails a shift from "procedurally inclusive adaptation to procedurally just processes that give vulnerable citizens agency and the political power to shape adaptation decisions".

While the early literature on just adaptation has focused on either distributive or procedural notions of justice, Schlosberg expanded the notion of justice by incorporating issues of recognition. He

argues that justice must be conceived of in a more pluralist manner because inequitable distribution, lack of recognition, and limited participation interact to produce injustice (Schlosberg, 2012b). Schlosberg, echoing Fraser (2010), argues that individual and cultural recognition is a key element of justice. Fraser (2010) argues that a lack of recognition in the social and political spheres, which can take the form of degradation, insult, or non-recognition, can affect participation and serve as a foundation for distributive injustice. She calls for the need to examine the socio-economic and political factors that hinder the full recognition of people as equals in society. Fraser (2010, p. 36) argues that the marginalised and excluded should gain *participatory parity*, which she defines as "social arrangements that permit all to participate as peers in social life". Recognition is thus closely linked to participatory parity and the eventual fulfilment of distributive justice.

Climate change is a "wicked" problem that spans different temporal and spatial scales and involves diverse actors and institutions (Head & Alford, 2015). As such, Kronlid (2014, p. 19) maintains that a "promiscuous" approach to climate justice is needed, emphasising the urgency for "scholars to search attentively for a combination of theories, methodologies, and models". In this thesis, I concur with his multi-pronged approach, arguing that to assess whether an adaptation intervention is just or not, one has to move beyond the distributive perspective that dominated the early literature on climate and adaptation justice. A framework that captures asymmetries in recognition and participation is needed to arrive at a more nuanced understanding of what constitutes just (and unjust) adaptation.

2.3 The Capabilities Approach as an Evaluative Framework for Just Adaptation

How do we evaluate justice in the design and implementation of adaptation interventions? This thesis turns to the capabilities approach to accomplish this objective. According to Robeyns (2003a), the capabilities approach can be used to evaluate various aspects of people's well-being as well as the policies and programmes of government, NGOs and other institutions involved in development. This approach, developed by Sen and Nussbaum, proposes that the notion of *capabilities* is a good lens through which to evaluate social justice and well-being (Nussbaum, 2000; Sen, 1999a, 1999b). Their main argument is that justice of social arrangements should be assessed not simply in distributive terms based on wealth, but also in terms of how these distributions affect people's functioning. Sen (1999b, p. 74) contends that the emphasis should be placed on the "freedoms generated by commodities rather than on the commodities on their own". Following this logic, this thesis evaluates justice in adaptation interventions not only through the availability of resources or goods. It also assesses justice in terms of the opportunities that interventions provide to individuals to gain effective protection against climate-related risks. Consequently, changes in human capabilities are used as one metric to evaluate whether adaptation interventions may be considered (un)just.

For more than two decades, the capability approach has been recognised and utilised in development and social welfare programmes. For example, it has been used as the theoretical basis of the United Nations Development Programme's (UNDP) Human Development Report since the 1990s. It also appears in a number of social welfare agendas such as mental health, youth unemployment, and early childhood interventions (Evans, 2017). Despite its wide application in poverty and development studies, it is important to note that the capabilities approach is a theoretical framework with a specific and limited utility in evaluating justice in adaptation interventions. For instance, capabilities scholars have been largely concerned with developing philosophical underpinnings for a universal list of capabilities. In doing so, it proposes a very specific list of capabilities necessary for human flourishing. While Sen recognises that important capabilities can be spatially and inter-personally variable (Alkire & Black, 1997), Nussbaum criticises his approach for taking "a stand, indeed an increasingly specific stand, on what functions of human beings are most worth the care and attention of public planning, the world over…" (Nussbaum, 1995, p. 5).

Some scholars criticise the universalist and non-relativistic logic of the mainstream capabilities approach. Clark (2005, p. 7) argues that it is "paternalistic for a middle class North American philosopher (i.e. Nussbaum) to determine capabilities for other cultures and societies". Similarly, Stewart (2001, p. 1191) contends that any imposed list of capabilities cannot claim to have arrived at some universal values since "it would not be accepted by large numbers in modern Western societies, and are not the prevailing values of many, probably the majority, in many developing countries". Nonetheless, for reasons discussed in the next section, the capabilities approach is a useful framework for assessing justice in adaptation programmes.

2.3.1 Why the Capabilities Approach?

In this thesis, the capabilities approach is used to evaluate the advantages and deprivations people experience as a result of the adaptation interventions they have been subjected to. Using changes in *capabilities* as one metric of justice (in addition to assessing the distribution of resources and risk) is useful for several reasons. First, focusing on capabilities helps paint a clearer picture of the nature and potential sources of capability deprivation and inequity that arises from the adaptation interventions. Schlosberg (2007) argues that the capabilities approach focuses attention on the social, political, and institutional conditions that create and sustain vulnerability. The capabilities approach is thus able to bridge the gap between the abstract notions of climate justice theory on the one hand and the reality of adaptation interventions on the other. Malloy and Ashcraft (2020, p. 4) argue that the capabilities approach "brings new focus to the processes that recognise the needs of vulnerable populations and fosters agency within vulnerable populations to shape adaptation decisions". By bringing the experiences of the marginalised and the ways in which their status is

socially, politically, and economically constructed to the fore, the capabilities approach can help illuminate what hinders or facilitates just adaptation to climate change.

Second, the capabilities approach makes it possible to frame the 'recognition space' − something that scholars argue is a critical component for achieving climate justice (Bulkeley et al., 2013; Bulkeley et al., 2014; Schlosberg, 2012a). For instance, Schlosberg's capabilities framework incorporates 'recognition' as a central feature of climate justice. He contends that securing the capabilities necessary for people to flourish requires recognising those most vulnerable to climate impacts. He also argues that a capabilities approach makes it possible to analyse the ways that "institutional processes and contexts, decision-making structures, divisions of labour, and the reality of social status determine distributions" (Schlosberg, 2012a, p. 450). According to Holland (2017), Schlosberg's capabilities approach paved the way for the conceptualisation of a 'trivalent view' of adaptation justice that includes issues of distribution, participation and recognition. A capabilities approach helps to expose the institutions, processes and practices that render some groups invisible or marginalised. In doing so, it opens the way for a more comprehensive conceptualisation of adaptation justice.

The third reason why the capabilities approach is used in this thesis is for practicality: it is clear about its objectives and it allows researchers to employ plural techniques which can aid in data triangulation. Alkire (2005, p. 117) argues that one of the fundamental strengths of the capability approach is the clarity about its objectives, namely, "the objective of poverty reduction should be to expand the freedom that deprived people have to enjoy valuable beings and doings". A capabilities approach, therefore, provides a way of making inter-personal comparisons and evaluations of adaptation justice. In addition, Alkire (2007) maintains that the capabilities approach can draw on quantitative, qualitative, participatory and subjective data. This research utilises a variety of techniques (e.g. descriptive statistics, chi-square tests, thematic analysis etc.) to measure capabilities and analyse justice in adaptation interventions.

Furthermore, the capabilities approach has been widely applied in different settings. According to Robeyns (2003c, p. 68), the application of the capabilities approach can be "academic, activist or policy-oriented. They can be abstract and philosophical or applied and down-to-earth." Alkire (2005, p. 119) explains that the "capabilities approach… could appreciate *all* changes in a person's quality of life: from knowledge to relationships to employment opportunities and inner peace, to self-confidence and various valued activities…". This breadth of perspective has allowed the approach to be applied to the study of a wide range of complex social phenomena. It has been used to analyse poverty and well-being (Balestrino, 1996), explore the deprivation of disabled people (Zaidi & Burchardt, 2005), assess gender inequalities (Robeyns, 2003c), and evaluate poverty reduction projects (Alkire, 2002). This large body of literature provides practical guidance on how the approach can be fruitfully applied to new fields of inquiry, such as assessing the justice

implications of adaptation interventions. However, the capabilities approach has gained little interest in the field of climate justice (Kronlid, 2014). Climate justice scholars have tackled the capabilities framework on a theoretical level (Grasso, 2007; Schlosberg, 2012a), but only a few have studied real-world examples of adaptive (in)justice (Katyaini et al., 2016; Wood & Roelich, 2019). This thesis attempts to fill this gap in the literature.

2.3.2 Key Concepts: Capabilities, Functionings and Conversion Factors

The capabilities approach is based on three key concepts: resources, capabilities, and functionings (Figure 2.1). Resources refer to any goods or services that enable a specific functioning. For example, a bicycle is a resource that enables the functioning of mobility (Robeyns, 2005a). Capability refers to what people are able to be and to do. A person with an expanded capability set has more opportunities to lead a life he or she values. The aim of justice is seen as creating equality in the space of resources, capabilities and functionings. On the other hand, limiting a person's capabilities is tantamount to committing injustice (Schlosberg, 2012a). If adaptation programmes hinder the enhancement of a person's capabilities, then it will have a severe impact on his or her well-being.

Figure 2. 1: A conceptual framework of the Capabilities Approach
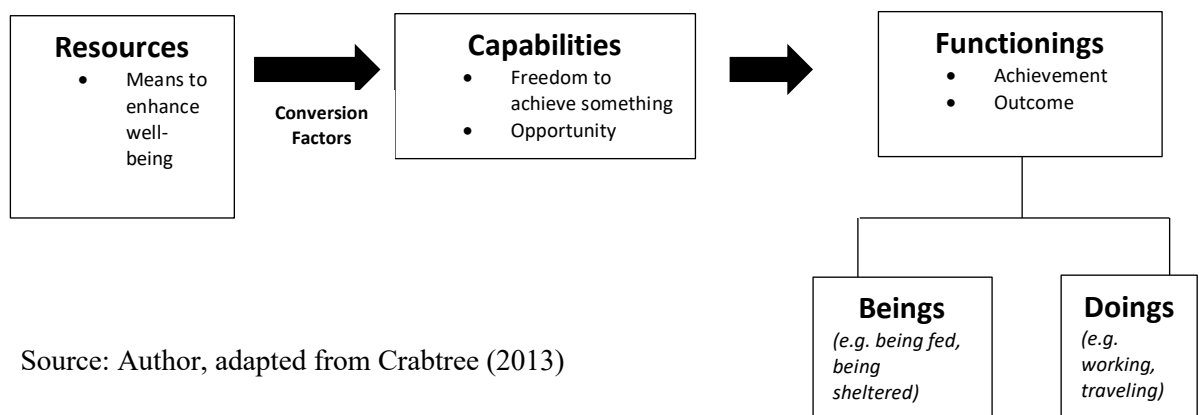
Source: Author, adapted from Crabtree (2013)

'Functionings' refer to a person's achieved beings and doings such as being well nourished, having access to clean water, having shelter, etc. The difference between capability and functioning is akin to the difference between opportunity and outcome, or between achievements on the one hand and freedoms on the other (Robeyns, 2003c). Sen (1999a) provides an example: a person fasting has the same functioning as a person starving, but they do not have the same capability. The person fasting has the option *not* to fast, but the person starving has no other choice. The capabilities approach can help evaluate policies and programmes according to their impact on people's capabilities. Resources − financial, political, or institutional − are the inputs that enhance one's well-being. In offering an evaluative space for adaptation justice, the capabilities approach highlights one's ability to convert resources into capabilities and, eventually, functionings (Grasso, 2007).

Finally, the utility of any resource is dependent on a number of conversion factors. Robeyns (2005a) identifies three factors that affect how a person converts characteristics of a commodity into a functioning. The first is personal, referring to the characteristics of the person such as physical health, sex, intelligence, etc. If a person is disabled, then a resource such as a bicycle will not help in enabling the functioning of mobility. The second is social, referring to policies, social norms, gender roles, and societal hierarchies. If there is a societal norm that prohibits women from cycling, then it becomes impossible to use the resource to achieve mobility. The third is environmental, referring to climate and geographical factors. If there are no paved roads, then it also becomes difficult to enable the same functioning. Robeyns (2005a, p. 99) claims that "knowing the goods a person owns or can use is not sufficient… We need to know much more about the person and the circumstances in which he/she is living".

2.3.3 The List of Capabilities

Sen (1980) argues that to analyse justice, one must pose the question "equality of what?" Kronlid proposes a tentative list of capabilities relevant to climate change, with a special focus on adaptation. This list, which draws upon the work of other capabilities scholars (Alkire & Black, 1997; Nussbaum, 2000; Robeyns, 2003c), is used as a framework in this thesis. Kronlid's essential capabilities for just adaptation are presented in Table 2.1. The loss of any of these capabilities affects people's resilience and limits adaptation efficiency. The adaptation interventions analysed in this thesis relates to four elements in his list of capabilities: life, knowledge, work and friendship. The four capabilities were chosen based on a review of the adaptation interventions of the NGOs; these capabilities were what the NGOs in both study areas claim to be trying to enhance. Their adaptation projects did not cater to the non-humans (other species), people's inner peace (self-integration), choices and conscience (self-determination), spirituality (transcendence) or mobility.

Table 2. 1: Kronlid's list of capabilities for adaptation

Capability	Definition
Life	Life itself, its maintenance and transition, health, and safety
Knowledge and appreciation of beauty	Being rational and having a capacity to "know reality and appreciate beauty"
Work and play	Some degree of excellence in work and play.
Friendship	Coherence between and among individuals and groups of persons, living at peace with others
Self-integration	Coherence among the different dimensions of the person; inner peace
Coherent self-determination	Peace of conscience; coherence among one's judgments, choices and performances
Transcendence	Religion, spirituality; coherence with some more than- human source of meaning and value
Other Species	Relating to the life of animals, plants, and nature
Mobility	Ability to move in geographical space

Source: (Kronlid, 2014, p. 37)

The question 'equality of what?' is answered as 'equality of capabilities'. The capabilities approach advocates that evaluative assessments of justice should focus on the above capabilities instead of goods or commodities provided by donors. It has become a serious contender to the income-based and utilitarian evaluations of justice which has dominated the literature (Robeyns, 2003c). In the field of climate adaptation, the key issue is how to increase the capabilities of the local residents so that they can be resilient to the impacts of a changing climate. While an adaptation program may supply material resources, this is not necessarily just unless the residents' capability sets are expanded.

2.3.4 Other Critical Interpretations of the Capabilities Approach

While the capabilities approach appeals to many scholars, it has also garnered criticism. I discuss two other major critiques in this section: its applicability and its individualism.

First, some scholars have questioned the practical significance and application of the capabilities approach to empirical assessment and policymaking. For instance, Sugden (1993) wonders how far the framework can be operationalised given disagreements about what constitutes a 'good life'. He asks: "is it a realistic alternative to the methods on which economists typically rely?" (Sugden, 1993, p. 1953). Comim (2001) indicates that even the followers of the capabilities approach have acknowledged that its operationalisation is a challenge. Because of its underspecified nature, the capabilities approach is open to interpretation; different scholars have distinct interpretations and applications of the framework. How one utilises the framework depends on one's theoretical priors and research objectives. Consequently, according to Robeyns (2003b, p. 371), "too many of Sen's readers seem to have forced the capability approach into a too narrow and single-paradigmatic interpretation."

Another major critique is that the capabilities approach is too individualistic; that is does not consider individuals as part of their social environment and as socially embedded and connected to others (Murphy, 2014; Stewart & Deneulin, 2002). Critics argue that the capabilities approach only works with the notion of 'atomised' individuals. According to Stewart (2005), since individuals belong to a community, the contribution of the community to an individual's well-being (and vice versa) should be taken into consideration. In addition, Deneulin (2008) argues that the interaction and linking of the individual with the broader collective is missing from the capabilities approach. Commentators contend that the capabilities approach is insufficiently critical of the social and institutional constraints on people's actions. For instance, Koggel (2003) explains that the capabilities approach pays insufficient attention to power and to the influence of societal structures on people's agency. In defense of the capabilities approach, Robeyns (2005a) argues that it does

account for societal structures and institutions through the conversion factors. She argues that social and environmental factors shape and influence the conversion of commodities into functionings.

Despite the critiques, this thesis argues that it is a worthwhile and fruitful endeavour to explore how the capabilities approach can be applied to an analysis of justice in adaptation interventions. A number of climate justice scholars have talked about the potential benefits of adopting the capabilities approach as a conceptual framework for analysing climate adaptation policies. While these scholars argue that the capabilities approach can be used as a normative guideline for policy-making, offering concrete standards by which to measure justice, this thesis does not use it in this way. Rather, it uses the capabilities approach solely for *evaluation*; it does *not* prescribe what adaptation ought to be or suggest which adaptation strategy is better or worse.

The next section describes the final framework used in this research – postdevelopment theory – whose key strength is its ability to engage critically with such normative issues; in particular, its ability to move beyond prevailing (Western) normative frameworks and recognise the diverse adaptation practices already underway in communities.

2.4 Postdevelopment Theory

As discussed in previous sections, conventional approaches to climate change have been critiqued for having the potential to increase inequalities while undermining agency and creativity. However, the threat from accelerating climate change is real and has only served to heighten the need for more adaptation interventions (Adger & Jordan, 2009; Leary et al., 2008). Given this complex entanglement between the necessity to adapt on the one hand and the limitations of existing approaches to adaptation on the other, it is important to ask: are there other possible ways to move forward? McKinnon (2007, p. 783) refers to the tension between the failures of development on the one hand and the hope for a better world on the other as "the postdevelopment problem".

Postdevelopment theory seeks to expose the adverse impacts of mainstream development practices and, at the same time, find new solutions by empowering alternative voices and worldviews that have been rendered silent within the development industry (McGregor, 2005). Because of its open, experimental and generative approach, postdevelopment theory does not sit neatly alongside the two other theoretical frameworks used this thesis (i.e. the justice and capabilities approaches). Nonetheless, its sensitivity to – and encouragement of – new forms of bottom-up development make it a useful tool for studying and imagining innovative forms of adaptation that move beyond current mainstream practices.

Postdevelopment came to the fore in the early 1990s, driven by a number of texts that were highly critical of traditional development approaches and that called for a change within the development industry (McGregor, 2009). The criticisms emerged from the observation that several decades of aid and intervention have done little to improve quality of life in much of the developing world (Klein & Morreo, 2019). Many of these critical assessments portray development as a form of neo-imperialism that reinforces the power of Western political, economic and knowledge systems. For example, Esteva (1992, p. 23) claims that "crutches… are not necessary when it is possible to walk on one's own feet, on one's own path, to dream one's own dreams. Not the borrowed ones of development." Rahnema (1997, p. 384) similarly argue that "development, as it imposed itself on its target populations was basically the wrong answer to their needs and aspirations. It was an ideology that was born and refined in the North, mainly to meet the needs of the dominant power in search of more appropriate tools for their economic and geopolitical expansion." In doing so, these critical perspectives reframed development as being dominating and oppressive rather than liberating and desirable.

Postdevelopment authors have also taken issue with the way "development is portrayed as a one-way process, where the visions of development in the self-identified 'developed world' are imposed through various mechanisms of power on 'undeveloped' peoples and places" (Dombroski, 2015, p. 323). Postdevelopment scholars use a poststructural lens to recast development as a homogenising process that legitimises and normalises particular worldviews and languages. For instance, Escobar (1995) highlights the power of development in creating particular places. He cites the example of President Truman's speech which separated the world into 'developed' and 'underdeveloped' spaces for the very first time. Truman said "more than half the people of the world are living in conditions approaching misery. Their food is inadequate, they are victims of disease. Their economic life is primitive and stagnant" (Truman, 1949, cited in Escobar 1995, p. 1). These stereotypes provide a rationale for 'developed' countries to transfer knowledges and resources to the 'underdeveloped' ones. This vision has also created and legitimised a development industry whose goal is to transform 'deficient' nations into more desirable 'developed' ones. Truman remarked "I believe that we should make available to peace-loving peoples the benefits of our store of technical knowledge in order to help them realise their aspirations for a better life… Greater production is the key to prosperity and peace. And the key to greater production is a wider and more vigorous application of modern scientific and technical knowledge." (Truman, 1949, cited in Escobar 1995, p. 1).

According to McGregor (2007, p. 156), the common argument of postdevelopment scholars is that "development has artificially naturalised an ideal state, modelled upon the developed West, and promoted this state as universally desirable and achievable for all peoples and cultures." Escobar (1995, p. 4) contends that such a linear vision of development is arrogant because it assumes that 'developed' countries know what is best for other people. Other postdevelopment scholars are

critical of such linear conceptions of development as they "stunt diversity and fail to entertain or fully appreciate other ways of being" (McGregor, 2009, p. 1691). They suggest that development has rendered invisible and illegitimate the diverse range of social, political, economic and knowledge systems in many parts of the world. For these reasons, the prognosis for development, from a postdevelopment lens, is poor. For instance, Thomas (2000, p. 3) claims that "development has failed or at worst was always a hoax, designed to cover up violent damage being done to the so-called developing world." Sachs (1992, p. 1) similarly referred to development as a "ruin in the intellectual landscape."

Western development institutions, like the World Bank, and mainstream economic analyses often blame developing countries for their own lack of development, pointing often to their poor governance standards and inability to channel scarce capital resources into productivity enhancing investments. In contrast, postdevelopment scholars point the blame at the idea of development itself, and the way this idea has been translated into practice (Rahnema & Bawtree, 1997; Ziai, 2007). The cause of development problems, argues McGregor (2009, p. 1695), "lie in the colonising discourses, languages, and world views of development itself." Similarly, from a postdevelopment perspective, appropriate action focuses upon "liberating oppressed imaginaries and alternative futures by delegitimising development, marginalising traditional development institutions and creating new spaces where unconventional pathways can be explored and enabled" (Ibid.). This is what makes postdevelopment different from the community-based alternative development movement of the 1980s. While they also champion local action and empower marginal voices, alternative development sees the problems associated with development as mainly methodological. Consequently, they seek to improve development processes and approaches by encouraging more participatory and effective grassroots methods (McGregor, 2009). This universalising conception of justice runs counter to the poststructuralist orientation of postdevelopment, which does not subscribe to any absolutist claims about the trajectory of development.

While recognising the damages caused by development, recent postdevelopment scholarship does not merely point out the problem but also theorise possible solutions by empowering the alternative worldviews that are often silenced within the mainstream development discourse. Postdevelopment scholars, in exploring the horizons of concrete possibilities, are therefore interested in 'alternatives-to-development' (Escobar, 1992). In contrast to universalising and top-down approaches of mainstream development, postdevelopment scholars focus their attention on the "immediate place-based concerns of local communities and the ways to respond to these concerns in creative locally relevant ways" (McGregor, 2007, p. 157).

The postdevelopment perspective favours a world of difference and diversity, which Escobar (2018) refers to as a 'pluriverse'. Within such a world, the knowledge, assets, and aspirations of local groups and communities are respected and valued. Kothari et al. (2019, p. 106) further explains that

"while pluriversal articulations synergise with each other… they cannot be reduced to an overarching policy for administration by a UN [United Nations] or some other global governance regime, nor by regional or state regimes. We envision a world confluence of alternatives… including small everyday actions, towards a great transformation". As such, there is no room for universalism, no blueprint valid for all times and places, and therefore no single formula for success. A postdevelopment approach eschews the use of generic development tools in favour of a set of context-specific and locally-based development practices.

Scholars identify three broad topics of discussion in the postdevelopment literature − politics, knowledge, and economy (Escobar, 1995; Ziai, 2004). The following sub-sections review some of the common themes and debates in each of these three areas. While this review is not exhaustive[1], reviewing these themes and debates is important as they inform the analysis undertaken later in this thesis.

2.4.1 Diverse Conceptions of Politics

Postdevelopment scholars stress the importance of the local and the grassroots. They argue that universal solutions ignore the particularities that make a specific development program work in one community but not elsewhere. Believing that global thinking is impossible (because problems and solutions differ from place to place), Esteva and Prakash (1997) emphasise the value of local thinking and acting. Escobar (1995, p. 222) also maintains that one should resist the desire to formulate alternatives at a macro level because "there are no grand alternatives that can be applied to all places or all situations." Similarly, McKinnon (2011, p. 177) contends that "no mode of intervention can be a neutral formula for success, no single method can work unfailingly in every context."

Postdevelopment thinkers support small organisations and local movements. These 'new social movements' are often characterised by autonomy and self-reliance, where decision-making occurs at the smallest unit of settlement (Kothari et al., 2019). According to Escobar (2007), postdevelopment likewise focuses on the various forms of subversions that local community members are engaged in. It also enables social movements to highlight the alternative strategies they employ as they encounter development projects. Diverse conceptions of politics are possible because postdevelopment scholars embrace a complex understanding of power. They see power not only as something negative (i.e. exercise control over others) but also as something positive that can be used for productive action (Cornwall, 2004a; Gaventa, 2004).

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[1] For more details on the other ideas and principles of postdevelopment theory, see the following works: The Development Dictionary (Sachs, 1992); Encountering Development (Escobar, 1995); Post-development Reader (Rahnema and Bawtree, 1997); Grassroots Post-modernism (Esteva and Prakash, 1998); Exploring Post-Development (Ziai, 2007)

It is important to note that postdevelopment scholars are not calling for radical localism and the rejection of all state-based and global solutions. McGregor (2009) explains that completely removing the state is problematic because this can expose the local communities to the vagaries of global capitalism. Pattnaik and Balaton-Chrimes (2019, p. 156) likewise asks the question: "the… state is more committed to foreign capital than citizen welfare, but if not the state, then who will protect the villagers from the very same capital?". Indeed, the degree to which the state should be involved in development remains an issue of ongoing debate within the postdevelopment literature. However, there remains an overarching tendency to favour local, rather than universal, initiatives (Matthews, 2017).

2.4.2 Diverse Conceptions of Knowledge

A postdevelopment perspective regards the mainstream approach to development as being based on Western models that render the knowledges and traditions of some groups of people as 'less developed' (Ziai, 2016). The mainstream approach overlooks 'pluriversality' and devalorises the ontologies and ecologies of many communities living in 'developing countries' (De Sousa Santos, 2014). Nowhere is this epistemology of the "North" more deeply ingrained than in the Philippines, where "nation-hood is inseparable from a project of Christianisation and colonial occupation that dates from the mid-sixteenth century" (Gibson-Graham, 2005, p. 20). Postdevelopment scholars look for alternatives to Western-centric models, arguing that there are diverse forms of knowledge apart from modern science. They contend that Western knowledge is just one of the many other forms of knowledges and that it cannot relegate or subsume all the others.

Postdevelopment scholars have instead called for enabling a world in which many other worlds can be embraced (Esteva & Escobar, 2017; Mignolo, 2018). This diversity, for postdevelopment thinkers, is an asset (Matthews, 2017). It allows for an appreciation of the different forms of "understanding, creating, and coping that the human species has managed to generate" (Apffel-Marglin & Marglin, 1996, p. 17). In order to suppress the on-going privileging of epistemologies of the North, De Sousa Santos (2014) calls for the construction of 'epistemologies of the South' in order to achieve global cognitive justice. He argues that there should be equity between different ways of knowing and different kinds of knowledge. For postdevelopment scholars, this entails attending to alternative forms of knowledge that have been excluded from the mainstream development processes. In other words, they posit that local and non-Western forms of knowledge should not be denigrated outright as they could serve as alternatives to the current hegemonic models.

2.4.3 Diverse Conceptions of Economy

Postdevelopment scholars are also interested in identifying and promoting diverse forms of economic activities. In finding alternatives to mainstream economic projects, they draw upon the work of (Gibson-Graham, 1996, 2006) who criticise the dominant 'capitalocentric' discourse in which "other forms of economy are understood primarily with reference to capitalism." Gibson-Graham warn that by assuming the hegemony of capitalism, or by treating it as the only form of the economy, alternative and non-capitalist forms of economic activities are rendered inferior or invisible. Mignolo (2002) likewise contends that although capitalism may have overpowered other economic practices, it has not completely erased them, so it is very important to emphasise the diversity of economies.

In order to de-centre this capitalocentric discourse, postdevelopment scholars promote several conceptions of the economy. De Sousa Santos (2004, p. 240) uses the term 'ecologies of productivity' to capture various economic practices "which have been hidden or discredited by the capitalist orthodoxy of productivity." Gibson-Graham et al. (2013) proposes the concept of the diverse economy, highlighting the fact that there are various types of labour, property, enterprises, transactions and finances which can be read as being alternative forms of capitalism or even non-capitalist. Through this framing, capitalism loses its dominating character and becomes "just one particular set of economic relations situated in a vast sea of economic activity" (Gibson-Graham, 2006, p. 70). Healy (2009, p. 340) explains that "economies are heterogenous spaces composed of multiple class processes, mechanisms of exchange, forms of labour and renumeration, finance and ownership". Gibson-Graham (2006) utilises the 'iceberg metaphor' to argue that capitalist relations are a small, but highly visible, part of economic life and that a wide range of economic activities are hidden from view. These 'hidden' economic activities include unpaid labour, non-profit enterprises, fair trade movements, producer and worker cooperatives, local currencies, voluntary organisations, and the like (Gibson-Graham, 2008).

Postdevelopment scholars also reject the idea, which underpins most mainstream economic thought, that economic activity is motivated primarily by human self-interest. Rather, they endeavour to enlarge the economy by taking into account practices of sharing, reciprocity, and alternative forms of capital within a community. Gibson-Graham et al. (2013) explains that diverse economies are comprised of values such as generosity, cooperation, mutuality, altruism, and solidarity. Klein and Morreo (2019) contend that while the resiliency of capitalism is real, there are still people around the world who are living through the confines of traditional economy. Chakrabarti et al. (2012) cite the example of the 'world of the third', where people are neither capitalist nor pre-capitalist but are non-capitalist. They are living proof that diverse economic activities exist and are legitimate and capable of being conduits of social transformation.

2.4.4 Critiques of Postdevelopment

The postdevelopment school has attracted a significant amount of criticism from Marxist, neo-Marxists, or post-Marxists alike. First, critics argue that postdevelopment theory homogenises development. They argue that postdevelopment fails to recognise that development has changed over time and not all development projects are the same. Kiely (1999, p. 47) describes postdevelopment as "reverse Orientalism that turns all people from non-Western cultures into a generalised subaltern that is then used to flog an equally generalised West". Corbridge (1995) maintains that postdevelopment scholars also undermine the significant achievements of development programmes. Critics maintain that a more nuanced view of the merits and flaws of development projects is needed.

Another criticism levelled at postdevelopment theory is that it invokes an uncritical and romantic celebration of 'the local' and 'the grassroots.' Critics like Schuurman (2001) remain suspicious of whether local groups and initiatives can really offer a solution. Other critics have also urged caution that grassroots movements may not necessarily act in the interests of the marginalised. For instance, Kiely (1999) contends that some local groups may actually have racist, sexist, and ethnocentric objectives that are not necessarily pro-poor. For these critics, the postdevelopment stance seems to indicate an indifference to such concerns, and may ignore the basic needs of the poor, such as their desire for safe drinking water and proper housing (Simon, 1997).

Despite these accusations of romanticism, postdevelopment scholars stress the importance of recognising local knowledges and actions because "it is here that alternative imaginaries and counter-hegemonic beliefs reside" (McGregor, 2009, p. 1697). In fact, Ireland and McKinnon (2013, p. 162) stress that postdevelopment does not suggest that everything that happens locally is positive per se, but rather that local initiatives, such as what is presented in Chapter 7, "reflect nascent possibilities for communities to begin a process of adaptation to climate change". Place-based and locally-sourced initiatives can therefore provide useful examples of innovative forms of climate adaptation that are too often overlooked by the mainstream approach.

In spite of the criticisms, Demaria and Kothari (2017) argue that postdevelopment is nevertheless becoming more prominent in the academic sphere and within civil society groups, in particular, within indigenous communities and the women's rights movement. There are also a range of activities around the world informed by postdevelopment principles; for example, *swaraj* in India, which focuses on self-governance and self-reliance (Kothari et al., 2014), *buen vivir* in Ecuador, which refers to a way of doing things that is ecologically-balanced and community-centric (Guardiola & García-Quero, 2014); and *ubuntu*, which embodies the African idea of personhood in

which people depend on others to be (Müller et al., 2018). These practices of deconstructing development have led to a decolonisation of mainstream knowledge systems, an increased appreciation of traditional and indigenous worldviews, and heightened dedication to human and environmental well-being. Gudynas and Acosta (2011) explain that the current mood in development studies is one that is searching for alternatives in a deeper way. They explain that it is only by detaching oneself from the ideological and cultural assumptions of mainstream development that people are able to bring forth alternative imaginaries and practices.

Postdevelopment theory is used in this thesis to confront the persistence of mainstream approaches to adaptation, which scholars have shown to have the tendency to be less just and sustainable (Adger & Barnett, 2009; Barnett & O'Neill, 2010). This thesis argues that on-going adaptation practices often follow business-as-usual development trajectories (Ireland & McKinnon, 2013) and often have little to do with climate change (Cannon & Muller-Mahn, 2010). Postdevelopment is thus used as a framework to address this narrow understanding of adaptation, which frames the issue as a techno-managerial problem requiring the usual technocratic solutions. A postdevelopment perspective helps uncovers new and diverse ways of adapting that are easily overlooked and suppressed by the mainstream approach. Chapter 7 discusses how new forms of adaption are revealed by seeing things differently. By paying attention to the role of local actors, economies, and knowledges, a postdevelopment approach enables us to move beyond mere critique and to reimagine how adaptation can be done in diverse and multiple ways.

2.5 Summary

To help conceptualise 'just adaptation', this chapter critically reviewed the justice, capabilities and postdevelopment literatures. The first section revealed that adaptation interventions have the potential to exacerbate, rather than alleviate, vulnerability and, thereby, generate unjust outcomes. Early research exploring the justice implications of adaptation interventions adopted a distributive (or Rawlsian) conception of justice. This approach was challenged by those arguing that just adaptation requires a conception of justice that also incorporates notions of procedural justice, referring to how decisions are made and who is included in the decision-making, and recognitional justice, which captures the extent to which people are granted respect and legitimacy, especially in decision-making. Embracing these two extra of dimensions of justice allows the analyst to uncover the role that power and politics play in shaping adaptation processes and outcomes.

Something as complex as climate adaptation requires a comprehensive and multifaceted conception of justice which encompasses issues of distribution, procedure and recognition. But how should real-world examples of adaptation (in)justice be assessed? The thesis evaluates the processes and outcomes of adaptation interventions using the 'capabilities' approach, first articulated by Sen

(1999) and Nussbaum (2000). Justice is seen as equality in the space of people's capabilities, while injustice is found in the limitation of those capabilities necessary for basic functioning. By highlighting the socio-economic and political factors that give some people the opportunity to do and to be what they consider to be valuable, the capabilities approach provides an ethically sound basis for the assessment of adaptation interventions.

Given the potential for mainstream approaches to adaptation to generate inequitable outcomes and inflict harm on already vulnerable populations, the question becomes: is there another way forward? Rather than dismiss adaptation altogether, this thesis draws on the postdevelopment literature to imagine a more hopeful roadmap for the future. The postdevelopment literature criticises the universalistic and patronising logic of mainstream development discourse and practice, and advocates for a more pluralistic conception of politics, knowledge, and the economy. This thesis finds inspiration in the latest turn within the postdevelopment literature, namely, its move beyond critique and statements about domination and oppression towards uncovering and promoting new and diverse approaches to development of the kind of already being undertaken by grassroots movements, local communities and the informal sector throughout the developing world. By 'thinking differently', the postdevelopment approach uncovers innovative local initiatives that are sensitive to and incorporate the needs and aspirations of local communities. By studying several examples of local adaptation practices from the Philippines, this thesis contributes to the emerging body of literature searching for new ways of doing and thinking about just adaptation.

Chapter 3: Research Methodology

3.1 Introduction

This chapter describes the research methodology and design of the thesis. As detailed in the preceding chapters, this thesis attempts to explore justice in climate adaptation interventions and articulate alternatives to mainstream adaptation. In order to achieve these two objectives, this thesis adopts a transformative worldview which "places importance on the study of lives and experiences of diverse groups that have been marginalised… seeking to provide a voice for them" (Creswell, 2014, p. 39). It specifically focuses on inequities in people's experiences of adaptation programmes as a result of asymmetric power relationships. In terms of research design, the thesis uses mixed methods due to its use of both positivist and constructivist epistemologies. It presents two case studies that provide examples of two different types of adaptation interventions, namely planned resettlement and in situ adaptation. The thesis collects multiple forms of data through questionnaire surveys, interviews, observations and field walks as well as content analysis of existing documents and policies. SPSS was used to conduct quantitative analysis to explore differences between respondents' experiences of climate adaptation programmes. Thematic analysis through the NVivo software was then used to analyse the qualitative data. The multiple methods helped contribute towards data triangulation.

This chapter is organised into eight sections. The next section describes the epistemological and ontological guidelines that underpin this research and their implications for the choice of mixed methods as an appropriate research design. The third section provides a discussion of the mixed methods approach. The fourth section presents the different research methods used in collecting data. It begins with a discussion of the case study design and outlines the rationale behind the selection of the two case study areas in the thesis. It then elaborates on how the questionnaire surveys, interviews, observations and content analysis of adaptation plans and policy documents were conducted. The fifth section explains some of the difficulties that I encountered in the field. The sixth section presents the limitations of the study while the seventh section discusses the ethical issues encountered in the field. The last section provides a summary of the chapter.

3.2 Epistemological Perspectives

According to Gray (2004, p. 16), "the choice of methods will be influenced by the research methodology chosen. This methodology, in turn, will be influenced by the theoretical perspectives adopted by the researcher, and in turn, by the researcher's epistemological stance." Evans et al. (2011) make a distinction between methodology and method. While method refers to the tools or

techniques used to answer the research questions, methodology refers to the branch of knowledge used to describe the general stance a particular researcher is taking.

Methodology is also referred to as *paradigms* (Lincoln et al., 2011*), worldviews* (Creswell, 2014), or *epistemological perspectives* (Crotty, 1998). It refers to the general philosophical orientation about the world and the nature of research a particular researcher brings to a study. Creswell (2014) has identified four major philosophical research positions: postpositivist, constructivist, pragmatic and transformative. Postpositivism is a philosophical position which argues that there is an independent reality that can be approximated and known (Crotty, 1998). Postpositivists develop numerical measures of observation and people's behaviours. Social constructivism assumes that individuals develop subjective meanings of their experiences. These meanings are not only co-constructed but are also diverse, multiplistic and highly contextual (Meixner & Hathcoat, 2019). Pragmatism is a philosophical view which is concerned with applications and solutions to particular problems. While pragmatists do not commit to any ontological or epistemological positioning, they have a strong focus on the consequences of their research (Creswell & Plano Clark, 2018). Finally, a transformative approach highlights the needs of specific groups or individuals that may be marginalised or disenfranchised. Researchers who hold to the philosophical assumptions of this approach are critical theorists who feel the need to address issues of power and social justice in society (Mertens, 2009). Mackenzie and Knipe (2006, p. 195) identify the keywords and languages associated with each of the four major philosophical positions (Table 3.1).

Table 3. 1: Major Philosophical Positions

Postpositivist	Constructivist	Pragmatic	Transformative
Experimental Quasi-experimental Correlational Reductionism Theory verification Causal comparative Determination	Naturalistic Phenomenological Hermeneutic Interpretivist Ethnographic Meanings Social and historical construction Theory generation Symbolic interaction	Consequences of actions Problem-centred Pluralistic Real-world practice oriented	Critical theory Feminist Critical Race Freirean Participatory Emancipatory Empowerment Change-oriented Interventionist Queer theory Race specific

Source: Mackenzie and Knipe (2006)

In Chapters 1 and 2, I have outlined how the thesis responds to the calls of critical adaptation scholars for the need to carefully interrogate the underlying agendas and impacts of adaptation interventions. While the IPCC asserts that adaptation programmes have the potential to reduce vulnerability and damages, recent examples from the literature suggest that adaptation has the potential to exacerbate inequalities and hinder inclusive development (Eriksen et al., 2015; Nagoda & Nightingale, 2017; Sovacool, 2018). These details have important ontological and epistemological implications for shaping how this thesis is undertaken. In highlighting the potential

of adaptation interventions to be maladaptive, the thesis aligns with the *transformative* worldview, one that issues a call for reform that seeks for change "in the lives of the participants and in the institutions in which individuals work and live" (Creswell, 2014, p. 38). This thesis is characteristic of the work of transformative scholars who do not only seek to address issues such as inequality, oppression and domination but also serve as a voice for reform and change.

The transformative lens is used to advance the needs and aspirations of the marginalised groups in society through the use of a theoretical framework (Mertens, 2012). The ontological assumption of a transformative lens is that certain groups in society are more likely to experience exclusion or oppression than others. Within the climate change literature, critical scholars argue that the poor and the marginalised are more likely to be disadvantaged by adaptation interventions (Marino & Ribot, 2012; Mikulewicz, 2018). In addressing the aim of critically interrogating and re-imagining alternatives to mainstream adaptation, I draw upon three theoretical perspective: just adaptation, capabilities framework and postdevelopment. These three perspectives resonate with the transformative lens in that they can be used to explore issues of power and social justice. The just adaptation framework explores the equity of distribution, recognition and participation of adaptation interventions. The capabilities framework critically interrogates the socio-political structures that determine people's ability to benefit from adaptation projects. A postdevelopment lens helps identify practical alternatives to mainstream adaptation. The three theoretical perspectives are applied to frame and analyse the research results and evoke possible changes to promote more just and equitable adaptation practices. They integrate well with a transformative lens which calls for a "research inquiry… (that is) intertwined with politics to confront social oppression at whatever level it occurs… and contains an action agenda for reform that may change lives of the participants" (Creswell, 2014, p. 38).

3.3 Research Design: The Case for Mixed Methods

Having outlined the philosophical paradigm that informs this thesis, I now discuss the issue of research design. For centuries, purist advocates of quantitative and qualitative research have been engaged in dispute. Quantitative purists or positivists contend that research should follow the norms of the natural sciences. Knowledge exists "out there" in the world and objectivity is a prerequisite for any research inquiry (Willis, 2007). Positivists reduce ideas into small and discrete sets in order to explore the statistical relationships between them (Creswell, 2014). On the other hand, qualitative purists or social constructivists oppose the ontological realism of the quantitative purists, arguing that "knowledge is a collection of local and specific realities which are constructed and interpreted through interactions and experiences in everyday life" (Crotty, 1998, p. 42). Social constructivists treat the emic perspective, most especially how actors interpret the complex world of their lived experience, with utmost importance (Schwandt, 1994). They believe that humans develop varied

and multiple meanings of their experiences and they look for "complexity of views rather than narrowing meanings into a few categories or ideas" (Creswell, 2014, p. 37). Both research traditions have their own inherent strengths and weaknesses, so combining the two makes sense in that "the collection of both quantitative and qualitative data neutralises the weaknesses of each form of data" (Creswell, 2014, p. 43).

Through a transformative lens, the vulnerable members of a community are seen as "having their own individual and community strengths and legitimate knowledge systems" (Jewiss, 2018, p. 1710). Consequently, transformative researchers acknowledge the need to learn from their participants and attempt to give voice to their knowledges and experiences. The transformative paradigm is also characterised as primarily using qualitative methods such as individual interviews and focus groups, given "the need to engage in dialogue with a cross section of participants to develop in-depth understanding of the range of perspectives within the community" (Jewiss, 2018, p. 1711). Moreover, within the field of development, Mosse (2005, p. 238) advocates for an ethnographic approach to understand the ways in which "managerialist policy discourse is far from politically neutral, and can produce social and political effects which fall outside the policy frameworks and the knowledge of agency staff". Lyons et al. (2013, p. 11) also argue that "qualitative approaches can provide a vehicle by which social justice practice can be enacted".

Other scholars, however, argue that a transformative lens does not necessarily only follow a strict qualitative research design (McBride et al., 2018; Mertens, 2009). For instance, Mertens (2009) emphasises that what is specific about the transformative paradigm is that it can involve either qualitative, quantitative or mixed methods. She clarifies further that "mixed methods design… can be used in any paradigm; however, the underlying assumptions [that researchers are bringing to bear] determine which paradigm is operationalised" (Mertens, 2009, p. 5). In addition, Creswell (2014, p. 44) identifies 'transformative mixed methods' as a type of mixed methods design "that uses a theoretical lens drawn from social justice or power as an overarching perspective within a design that contains both quantitative and qualitative data". These arguments indicate that a transformative paradigm is not exclusive to either a qualitative approach or a quantitative approach. What matters is that the methods should be able to explicitly address and recognise issues of power, discrimination, and oppression (Mertens, 2007).

Johnson et al. (2007) explain that the choice of research methods is determined by the types of questions asked. One of the aims of this thesis is to explore people's perceptions of justice with regards to the adaptation interventions they have been subjected to. To assess perceptions, attitudes, responses, and grievances within these communities, quantitative research tools were deployed. Carrasco and Lucas (2015, p. 166) argue that while perceptions "can be broadly described as qualitative in nature, it does not mean that it necessarily demands the utilisation of qualitative instruments". The authors also contend that surveys are designed with the explicit intention of

providing quantitative measures of perceptions and attitudes (which, in turn, can help uncover the extent of the justice issues within the community). In this study for example, questionnaire surveys enable me to state what percentage of the populations of different communities consider the adaptation interventions to be (un)just. Moreover, the investigation of people's perceptions is conducted at the level of groups. Quantitative research tools enable the research to establish *statistical significance* (Holton & Burnett, 2005). A research finding is statistically significant "if the likelihood of observing the statistical significance equates to $p < 0.05$. In other words, the result could be attributed to luck less than 1 in 20 times" (Heston & King, 2017, p. 112). This indicates that the researcher can confidently claim that the difference in perceptions between groups under investigation is not due to chance, "luck" of the sampling, or other factors external to the population.

Knowing the percentage of the population that deem the adaptation interventions to be just and establishing statistical significance are inadequate to meet the demands of a transformative research paradigm. Mertens (2007, p. 216) argues that the ontological assumption of the transformative paradigm poses the following questions:

> "How is reality defined? By whom? Whose reality is given privilege?
> What are the social justice implications of accepting reality that has not
> been subjected to a critical analyses on the basis of power differentials?"

Qualitative tools are particularly helpful in uncovering people's diverse experiences and perspectives to capture a richer and more complex story (Atkinson et al., 2001). Patton (2002) contends that qualitative methods such as interviews can help better understand people's feelings, experiences, opinions and expectations. Moreover, Bryman and Burgess (1994) argue that qualitative research enables the participants to discuss sensitive issues, such as injustice, while allowing the researcher to appreciate the wider social context of people's thoughts and actions. A qualitative approach can supplement the quantitative approach by providing detailed and in-depth perspectives from the participants.

Mixed methods were therefore deemed appropriate in this thesis for three reasons. First, it can provide both breadth and depth of information needed to represent a more nuanced picture of (in)justice in adaptation interventions. The thesis uses a broad questionnaire survey to generalise results to a specific population (breadth) and employs qualitative methods such as interviews and observations to collect detailed views from the participants (depth). Both quantitative and qualitative approaches offer different insights into the investigation of the various dimensions of adaptation justice. Second, mixed methods can be used to avoid biases intrinsic to single-method approaches (Rocco et al., 2003). Mertens (2007, p. 214) warns that "the use of a single method to determine the need for social change can yield misleading results." Finally, the use of mixed methods enables triangulation (or 'convergent validation'). Triangulation refers to the process of

combining results of several methods in order to arrive at a more accurate finding (Campbell & Fiske, 1959). Greene and McClintock (1985, p. 259) further explain that "triangulation seeks convergence, corroboration, correspondence of results from different methods." It also provides a way to collect data that represents a variety of perspectives both in form and in content.

According to Castro et al. (2010), there are two major types of mixed methods design: sequential and concurrent. Sequential design is characterised by the collection of either qualitative or quantitative data first, followed by collection of data of a different type. On the other hand, concurrent design involves the collection of both quantitative and qualitative data at the same time. These two data collection approaches have contributed to the development of four major design types: convergent, explanatory, exploratory and embedded (Creswell & Plano Clark, 2018). This study uses a convergent parallel design. It seeks a thorough understanding of adaptation justice through the convergence of quantitative and qualitative data. The quantitative phase provides more generalised results that are representative of the views of residents, while the qualitative phase offers an in-depth understanding of people's perceptions and experiences with the adaptation interventions. Both quantitative and qualitative data are treated equally and separately for analyses, which are then integrated and triangulated during interpretation (Tashakkori & Creswell, 2007). By "obtaining different but complementary data on the same topic", a convergent parallel design allowed for the thesis to bring together the strengths and dilute the weakness of separate qualitative and quantitative measurements (Morse, 1991, p. 122).

In subscribing to a mixed methods approach to the critical analysis of adaptation projects, this thesis follows a number of research bodies and institutes applying mixed methods to analyse climate change impacts (Warner & Afifi, 2014; Warner et al., 2012). For instance, the United Nations University, one of the leading institutions researching climate change, undertakes mixed methods research to understand the impacts of climate-related weather events at the local scale (Warner et al., 2012). Their case studies often employ a combination of quantitative and qualitative research tools to understand people's perceptions of climate change impacts. It is therefore unsurprising that Bryman (2016) considers mixed methods as the new paradigm of social science research. By using a mixed method design, this thesis can harness the strengths of both qualitative and quantitative methods.

3.4 Research Methods

This section outlines the research methods that were used in the thesis. The fieldwork took place from April to August 2018, and data was generated through case studies, questionnaire surveys, interviews, observation and the review of secondary data. Each research method was designed to

address the major aims of the thesis. The succeeding sections detail each of these methods and explain how they fit with the overall thesis.

3.4.1 Case Study

The research utilised a case study design in investigating people's lived experiences of adaptation interventions in a coastal city in the Philippines. According to Creswell (2014, p. 43), through a case study "the researcher develops an in-depth analysis of a case, often a program, event, activity, process, or one or more individuals". This thesis is a case study of people's lived experiences of adaptation interventions in two coastal communities. A case study may be used to provide 'thick' descriptions of a specific set of events or to generate and test particular theories and hypotheses (Bloor & Wood, 2006). These two objectives are aligned with the aims of this thesis: to explore people's experiences of adaptation interventions and to verify the propositions made by critical scholars that adaptation has the potential to be maladaptive, especially for the most vulnerable members of communities.

Aside from providing in-depth descriptions and analysis, case studies are also preferred when two features are present: (1) *how* or *why* questions are posed by the researcher, and (2) when the focus is on a contemporary phenomenon within a real-life context (Yin, 2009). Both attributes are present in this thesis. This research asks both 'how' and 'why' questions: How are the impacts of adaptation interventions distributed? Why are certain groups adversely affected while others are not? And how are the communities engaging in diverse adaptation practices? In addition, adaptation is a contemporary phenomenon that tackles real-life ethical issues. Individuals and groups with a vast array of resources and networks can better protect themselves from climate risks compared to those who do not (Moss, 2009). Mertens (2007, p. 214) contends that a transformative mixed method study, such as this thesis, is very timely and important because "there are *real* lives at stake that are being determined by those in power. The voices of those who are disenfranchised… remind us of the issues of power that surround so much in the public sphere". The differential impacts of adaptation interventions on the local residents are real and concrete.

A case study design benefits from earlier development of theoretical propositions to guide data collection and analysis (Dul & Hak, 2008). It necessitates the presence of theory development prior to data collection and analysis. According to Yin (2009), the presence of theory prior to data collection is what makes a case study different from other qualitative methods such as grounded theory or ethnography. More specifically, the latter avoids any theoretical proposition at the outset of data collection. As mentioned above, the role of theory is critical in this thesis. I have explicitly identified just adaptation, capabilities and postdevelopment as the major theoretical perspectives in this study. These frameworks are then reflected in the type of data collection methods employed

and the types of data collected (for example, the questions asked in the surveys and interviews). Yin (2017) also explains that case studies involve the deployment of a variety of data collection methods over a sustained period of time. This thesis is designed to employ multiple techniques, such as surveys, interviews and observations, to uncover context-dependent knowledge of people's experiences of adapting to climate change.

3.4.2 Case Study Design and Selection of the Study Sites

The thesis utilises a multi-site case study design to investigate contemporary phenomenon in two or more real-world settings. Because the impacts of adaptation interventions can be differential, two case sites were analysed and compared. According to Stake (2013), when the design and conduct of a multi-site case study are sound, the findings may be more compelling than those from a study where the sample is taken from one cohort alone. Furthermore, Bishop (2012, p. 588) offers another justification for using a multi-site case study design: "by illuminating the experiences, implications or effects of a phenomenon in more than one setting, wider understandings about a phenomenon can emerge". Case depictions from each site can therefore yield richer and deeper understandings of (in)justice in adaptation and how we might strive towards more just processes and outcomes.

While each of the two areas in the thesis are treated as separate cases, the research design employed in both areas were nevertheless the same. This means that the same units of analysis were studied in light of similar research questions. Moreover, similar data collection techniques, analysis and reporting were utilised in both study sites. Consequently, Bishop (2012, p. 588) contends that a multi-site case study design can generate not only "site-specific findings… [but it also] has the potential to enable valid cross-site syntheses and replication claims".

Yin (2009) contends that a multi-site case study is most appropriate when comparing two unique cases that have contrasting conditions. As a result, this study also utilised two areas that have different conditions. The two study sites, San Isidro and Tambaliza, are in the province of Iloilo in the Philippines (Figure 3.1). San Isidro is a barangay[2] located in Jaro, a district situated in the middle of Iloilo City. Jaro, the biggest district in Iloilo City, is home to several business establishments and institutions such as schools and medical centres. It has a land area of 2,672 hectares, comprising 38% of the entire land area of Iloilo. Jaro's total population also accounts for 26.50% of the city's total population (DPWH, 2003). Being a highly urbanised city, Jaro has a large service-driven economy, and the city's several industrial establishments provide opportunities for employment and income (Iloilo City Government, 2015a). On the other hand, Tambaliza is a small island located in Concepcion – a coastal municipality located at the northeastern part of Iloilo. It is

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[2] A barangay is the smallest unit of government in the Philippines. It serves as the main planning and implementing unit of government policies and programmes in the community.

126 kilometres away from the city proper. Tambaliza has a total land area of approximately 775 square hectares and it has a total population of only 3,403 people (Philippine Statistics Authority, 2017). The main sources of income in the island are fishing and farming.

Figure 3. 1: The Two Study Sites located in Iloilo, Philippines
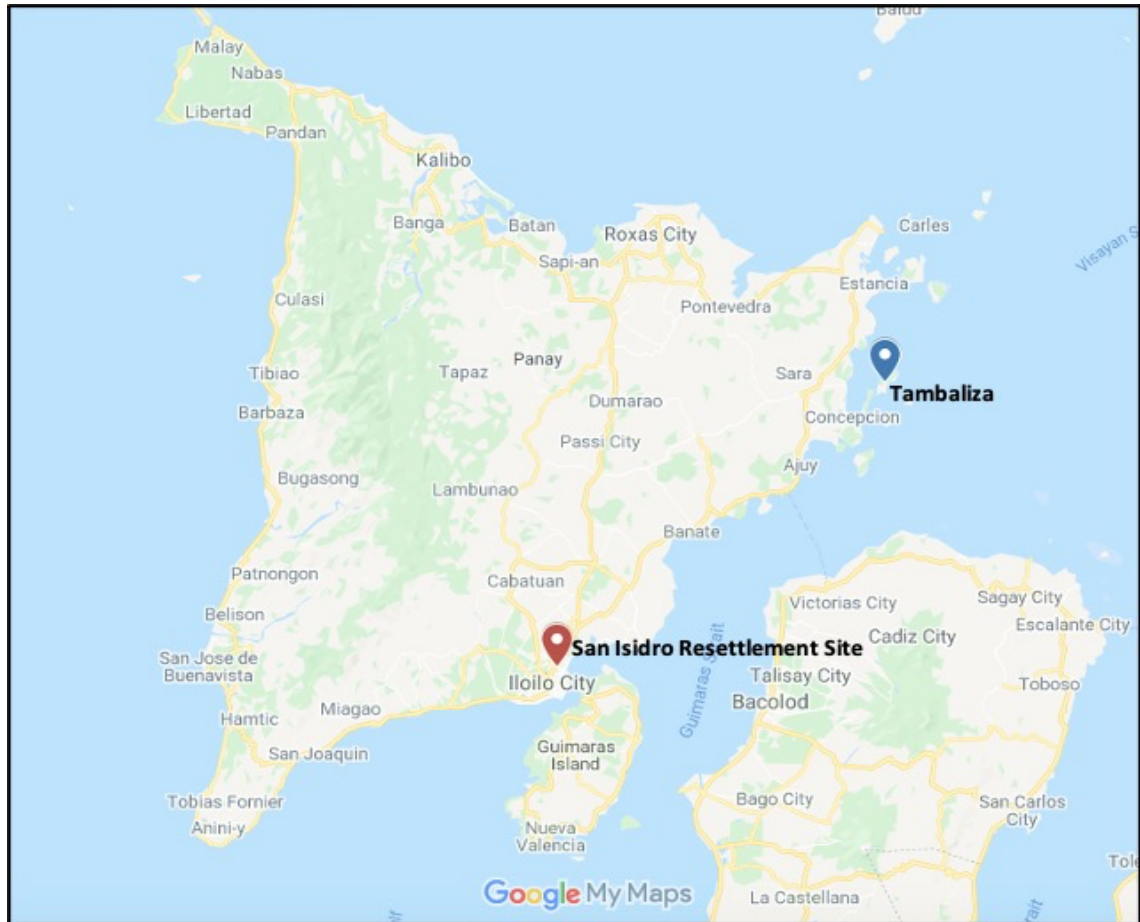
Source: Google Map

There are four main reasons for choosing San Isidro and Tambaliza as the field sites for this study. First, both sites regularly experience climate hazards such as typhoons. According to a report published by the United States Agency for International Development, Iloilo City (where San Isidro is located) "faces significant exposure and vulnerability to water… and these vulnerabilities can be affected by climate variability and expected to be made worse by climate change…" (USAID, 2013, p. 6). Meanwhile, in its disaster risk reduction and management plan, the municipality of Concepcion (where Tambaliza is located) reports that "it is a high risk municipality with a hazard severity rating of 100% based on the probability of occurrence of typhoons" (Municipality of Concepcion, 2017, p. 20). The fact that residents of both locales are exposed to and have been adapting to climate change make both areas suitable field sites for the study.

Second, both San Isidro and Tambaliza have been targeted for a series of adaptation programmes. The Iloilo Flood Control Project facilitated the displacement of 3,500 families from flood prone

areas of the city to San Isidro. Its resettlement program is one of the biggest in terms of investment and scale in the city's history (Subong, 2011). The local government, in partnership with several NGOs, were tasked with the planning and implementation of the resettlement project. Meanwhile, Tambaliza was adversely affected by Typhoon Haiyan in 2013. The municipal office estimated that a total of 2,662 boats were destroyed in addition to crops, produce, and farmlands, resulting in almost 2 million USD in damage (Municipality of Concepcion, 2017, p. 17). Numerous humanitarian and development organisations responded by providing emergency relief and recovery support to the affected households. Many have stayed in Tambaliza for years to implement longer-term adaptation programmes.

Third, both areas are recognised as 'success stories' in the country. The resettlement project in San Isidro has been lauded by development organisations (Japan International Cooperation Agency, 2013) and the Philippines authorities (Tayona, 2019) and is anticipated to inform the planning of future climate-related responses across the Philippine archipelago (Cruz, 2019). Moreover, in his speech at the 5th Asia-Pacific Housing Forum held in Manila, Motoo Konishi, the Country Director of East Asia and the Pacific at the World Bank, referred to Iloilo City's resettlement scheme as "an innovative initiative… that has succeeded in addressing this particular issue of informal settlements" (World Bank, 2015). Similarly, Tambaliza was hailed as one of the few islands in the country with no reported casualties during Typhoon Haiyan (Salas, 2014). This success was attributed to the barangay's unwavering efforts to widen the participation of its residents in local government programmes. In fact, Tambaliza's '*Hinun-anon sa Carangay*' program, which sought to expand the participation of its residents in all activities of the barangay, has been identified as an example of good governance and transparency by the national government (Local Government Academy, 2012, pp. 6-10). As there are concerns and risks associated with climate adaptation (Adger & Barnett, 2009), claims of success warrant closer inspection, particularly in terms of who has benefited and who has not.

Finally, access is another reason why San Isidro and Tambaliza were chosen for this thesis. I have developed networks with some of the NGOs in both study areas while I was working as a research assistant for a research project in the Ateneo de Manila University from 2012 to 2015. I contacted a number of NGO officials that I personally know and those who replied were from San Isidro and Tambaliza. NGO officials from the two study sites expressed their willingness to support my fieldwork. The fact that the two sites were outside military conflict zones was an added bonus as this meant that I could come and visit anytime without having to secure additional permit. According to International Committee of the Red Cross (1999, p. iv), armed conflict in the Philippines is highly contained only within the Mindanao region "and few respondents living outside the region have any real connection with it".

3.4.3 Questionnaire Survey

Questionnaire surveys provide "a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population" (Creswell, 2014, p. 201). In this study, surveys were used to collect data on the population's socio-economic characteristics and residents' perceptions of adaptation (in)justice. Respondents were asked to report directly on their thoughts and feelings about the adaptation interventions they were subjected to. Moreover, surveys were also utilised to document trends such as incomes and access to basic services as well as to indicate whether there are different experiences of justice in adaptation interventions between groups. Ultimately, the purpose of using a survey is to allow for some generalisation from a sample to a population (Fowler Jr, 2014). This generalisation is important in this study to make statistically significant inferences about people's perceptions of adaptation justice.

To make the survey instrument relevant to the context and experiences of the respondents, two types of questionnaires were constructed: one for San Isidro and another one for Tambaliza. The questionnaire for San Isidro had a section on respondents' socio-economic background and access to infrastructures services before and after being relocated. Meanwhile, the questionnaire for Tambaliza had a section on socio-economic background and access to infrastructure services before and after the implementation of adaptation interventions by the NGOs. Aside from these sections, the rest of the survey asked similar questions. One section asked for the demographic characteristics of the respondents, while another section gathered household information. A different section focused on people's experiences with climate change. The final section asked for people's perceptions of adaptation justice (see Appendix 1).

A careful review of the adaptation literature informed the design of the questionnaire. The questions drew upon various conceptual frameworks used in exploring and assessing adaptation justice. For instance, distributive, procedural, and recognitional justice were captured using a five-point Likert scale. Other survey questions explored whether and how the adaptation projects are contributing to or undermining people's capabilities and well-being. More details on how different concepts have been operationalised will be provided in the empirical chapters.

Because the questionnaire survey needed to be translated and conducted in the local language, it was necessary to employ assistants in the field. Four recent graduates of Iloilo City Community College were referred by a colleague who taught community development. They were hired based on their background in community development, familiarity with social research methods, such as surveys and interviews, and language skills. The students were involved in the translation of survey questionnaires from English to the local language, administration of the surveys in both areas, and transcription of interview minutes in Microsoft Word.

A pilot study, defined as a small version of a study done in preparation for the major study (Baker & Risley, 1994), was conducted in San Isidro for three days in May 2018 and in Tambaliza for a full day in June 2018. Respondents were asked for feedback on the survey which were then handwritten by the research assistants. The research team reconvened afterwards and took into consideration the suggestions of the participants to revise the questionnaires. There were two ways in which the pilot survey was helpful to the research. First, the initial survey questionnaire was constructed in English and was later on translated into the local language. Aside from the fact that the pilot helped improve the wording and structuring of the questionnaire, it also helped identify the questions that were too complicated, ambiguous or irrelevant to the respondents. One important lesson of the pilot study was that although some of the respondents were familiar with the term "climate change", they were not sure what it really meant. Consequently, the survey questionnaires had to be revised to give some of the participants more background information on climate change. Second, the pilot survey helped identify a few logistical problems. One of the biggest concerns was the length of the survey. Because it initially took the pilot respondents more than one hour to accomplish the surveys, they eventually lost interest as the survey progressed. Consequently, the questionnaires were condensed so they could be completed in 30 minutes.

The surveys were conducted from April to July 2018 in the two study areas. They were administered face-to-face to eliminate problems of missing data, illegible handwriting, or ambiguous marking (Doyle, 2006). The surveys were cross-sectional in nature; data was collected at only one point in time. At the start of every survey, the interviewer introduced himself or herself and informed the participants about the purpose of the study and that they could withdraw at any time. They were asked to sign a consent form before commencing with the survey. The surveys were then done during daytime either inside the respondent's home or outside on the street.

The population size of the NGOs in San Isidro vary considerably from one another. According to Table 3.2, the estimated population of Care Foundation and Dutch Hospitality are smaller than those of the population of Concern Italy and Houses4Humanity. Consequently, the sampling strategy employed in the resettlement site was stratified proportionate to size. In this way, the sample accounted for the smaller sizes of Dutch Hospitality and Care Foundation and did not over-represent Concern Italy and Houses4Humanity. The specific sample sizes of each NGO projects are also presented in Table 3.2. Each household was labelled with a number and every fifth household was randomly picked.

Table 3. 2: Sampling Frame for San Isidro Resettlement Site

NGO	Total Population Estimate	% Total	Sample Size
Dutch Hospitality	3,600	24%	46
Concern Italy	4,500	30%	61
Houses4Humanity	4,500	30%	60
Care Foundation	2,400	16%	33
Total	15,000	100%	200

In Tambaliza, the sample frame was obtained from a list of all the residents provided by the local government. Government records show that as of 2018, there were only 719 households or 3,403 people in the small island. Systematic random sampling was used so that there would be an equal chance for the entire population to be included in the sample. The target sample size was 100, calculated using National Statistical Service's sample size calculator with a 95% confidence interval, 5% standard error and a population size of 3,403. The sampling fraction was calculated to be 1/30, which meant that one in every 30 residents were selected from the list provided by the local government. This was done a hundred times to arrive at the sample sizes per sitio presented in Table 3.3.

Table 3. 3: Sampling Frame for Tambaliza

Sitio	Total Population	Sample Size
Proper	1,010	35
Banban	404	10
Bat-os	357	10
Botlog	273	10
Guinmisahan	322	10
Pasil	252	10
Punting	785	15
Total	3,403	100

Quantitative analysis was conducted using SPSS. The variables that were analysed, their definitions, and how they were operationalised in the survey questionnaire are presented in Table 3.4. Distributive justice of the adaptation interventions was assessed in terms of four capabilities (more details in Section 5.3): life and health, knowledge of climate change, work and friendships. Life and health were operationalised in terms of two components: access to basic services (electricity, water, toilet, and medicines) and current housing condition (housing materials of outer walls and roof). Knowledge of climate change was assessed by asking people whether they felt that they were provided with accurate, sufficient and useful information about climate change. Work was measured through monthly income and other questions about their spending power. Friendships were explored by asking respondents about their support networks and who they think they can rely for help to deal with climate change. Meanwhile, procedural and recognitional justice of the adaptation interventions were assessed in terms of three capabilities: voice, participation, and empowerment (more details in Section 6.3). Voice was assessed by asking respondents whether they felt recognised and involved in planning and implementation of adaptation projects.

Participation was operationalised by asking respondents whether they felt they were able to meaningfully participate in the adaptation programmes. Finally, empowerment was explored by asking respondents whether they felt they were provided with information and were involved in trainings and capacity building sessions. The unit of analysis is the household.

Table 3. 4: Variables analysed in the survey and their operationalisation

Research Question	Capability	Definition employed in this study	Variables	Survey Question
How are the impacts of adaptation interventions distributed?	Life and Health	Ability to live to old age, possess good health, and have sufficient access to infrastructure services and shelter.	1. Access to basic services 2. Housing condition	1. On a scale of 1 (Very Inadequate) to 5 (Very Adequate), how would you rate the following? • Electricity • Water • Toilet • Medicine • Food 2. What is the construction material of your outer walls in your house? The roof?
	Knowledge of climate change	Ability to access information with regards to dealing with the risks associated with climate change.	1. Perceived accuracy of information 2. Perceived sufficiency of information 3. Perceived usefulness of information	To what extent do you agree or disagree with the following? (1 – Strongly Disagree, 5 – Strongly Agree) 1. I feel that I have been provided with accurate information on typhoons. 2. I feel that I have been provided with sufficient information on typhoons in a timely manner. 3. I feel that the information provided to me was useful and relevant.
	Work	Ability to generate some form of income in order to provide for themselves and their families.	1. Avg. Monthly Income 2. Perceived ability to feed household 3. Perceived earning & spending	*1.* How much approximately is the average monthly income of your household? *2.* Did this household have enough to eat before the adaptation interventions? *3.* Which of the following statements best describe your

				household income & expenses before and after the adaptation interventions?
	Social networks	Ability to have and tap into social support especially during disasters	1. Perceived social support during disasters	Who can you rely upon the most to help you deal with floods and other climate-related disasters?
Who is targeted for the adaptation interventions and what factors play a role in their selection?	Voice	Ability to raise one's concerns to authorities regarding adaptation programmes	1. Perceived ability to make their voices heard in adaptation programmes	Think about your experience of adaptation programmes in your community. To what extent do you agree or disagree with the following? (1 – Strongly Disagree, 5 – Strongly Agree) 1. The government asked for my opinion/ suggestion when planning adaptation projects 2. I have been invited to a meeting/forum where I could make suggestions about my relocation. 3. Do you think the authorities consider the views of ALL (women, children, elderly) before making decisions? 4. Do you think that the authorities give opportunities for citizens to express their views before making decisions? 5. I feel that the NGOs treat me with dignity and respect.
	Participation	Ability to participate and influence decision-making in adaptation programmes	1. Perceived ability to participate and influence decision-making	Think about your experience with the NGO's adaptation programmes. To what extent do you agree or disagree with the following? (1 – Strongly Disagree, 5 – Strongly Agree) 1. I feel that I was able to take part and participate in the

				adaptation programmes.
				2. I feel that the government listened to the people in my community before we were relocated.
				3. The government has made/ are going to make changes in their strategies because of the action taken by my community.
				4. Do you think the authorities take ENOUGH time to consider their decisions carefully?
				5. I feel that the NGOs listened to the people in our community as they craft climate adaptation projects.
	Empowerment	Ability to be informed and capacitated with knowledge and skills to adapt to climate change	1. Perceived ability to be imparted with skills and knowledge for climate adaptation	Think about your experience with NGO's adaptation programmes. To what extent do you agree or disagree with the following? 1. I have participated in activities that involved planning for adaptation programmes 2. I have participated in trainings and capacity-building sessions.

Univariate analysis in the form of frequency counts, descriptive statistics, as well as diagrams such as income box plots were employed to explore the social demographic profile of the survey respondents in both field sites (see Chapter 4). Several statistical tests were then used to test for significant differences between NGO housing projects in San Isidro and between *sitios* in Tambaliza. A Wilcoxon Signed-Rank Test was conducted to test for significant differences among the respondents' access to basic services, monthly income and household expenditures before and after the implementation of adaptation interventions (both resettlement and adaptation projects). Non-parametric Kruskal-Wallis tests were also used to test for significant differences between the respondents' perceptions of adaptation justice in both sites. Sometimes called "one-way ANOVA on ranks", this hypothesis test is applicable on: (1) ordinal level variables (the survey utilised the Likert scale), and (2) when the assumptions of a one-way ANOVA are not met (Gerber & Finn, 2013). The statistical significance in both hypothesis tests was assessed at the $\alpha = 0.05$ level.

3.4.4 Key Informant Interviews

Key informant interviews were used in the study to generate deeper insights into how the local residents experienced the processes and impacts of adaptation interventions. The interviews were useful in soliciting information pertaining to attitudes and experiences as well as other sensitive issues such as justice or inequality. They also provided room for the researcher to ask the *why* and *how* questions central to a case study methodology. The interviews involved in-depth dialogue with respondents to uncover their detailed perspectives on a particular program (Boyce & Neale, 2006). The interviews also enabled the researcher to ask follow-up questions when responses were unclear and required clarification. Arksey and Knight (1999, p. 32) explain that "interviewing is a powerful way of helping people… articulate their tacit perceptions, feelings and understandings".

Each interview guide was customised according to the role of the participants in the adaptation interventions. Three types of interview guides were created: one for community leaders/members, one for NGO staff, and another one for government officials (see Appendix 2). Each guide included an introduction to the research project, followed by a series of open-ended questions that focused on the following themes: (1) introductory questions, (2) impacts of climate change, (3) participants' experiences with adaptation interventions and how the programmes were allocated within their communities (research aim 1), (4) participants' experiences of being recognised, of participating, and of being empowered by the adaptation interventions (research aim 2), and (5) local and community-led adaptation strategies (research aim 3).

The interviews were conducted in a semi-structured manner. Despite the list of questions that needed to be covered, the interviewer did not necessarily ask all the questions in every interview. The interview guide served as a framework for the conversation. This provided the interviewer some flexibility in the sequencing of questions (Minichiello et al., 1992). Another strength of the semi-structured interview is it allows for the diversion of the interview into new pathways which, while not originally intended to be part of the interview, may nevertheless help towards meeting the aims of the research (Gray, 2004). These serendipitous diversions were encouraged by the interviewer.

Purposive sampling was employed to generate a list of interviewees. This refers to a non-probabilistic sampling method which uses the judgment of the researcher to select specific cases (Neuman & Kreuger, 2003). This was appropriate because the interviews sought a deeper understanding of the lived experience of climate adaptation, not population representativeness. Interviews were conducted with key informants who had different roles in the planning and

implementation of adaptation projects. The interviewees included residents and community members, government officials, and NGO staff (Table 3.5).

Table 3. 5: Interview Design for the Study

Key Informant Group	Who were Interviewed?	Number of Informants	Number of Informants	Total
		San Isidro	Tambaliza	
Residents and Community Leaders	Local residents who have personally experienced and took part in the adaptation interventions.	13	18	**31**
Government Officials	Local officials from the following offices: • Planning and Development • Disaster Risk Reduction and Management • Environment and Natural Resources • Economic Development and Investment • Barangay Officials	5	3	**8**
NGO Staff	NGO staff members who were responsible for planning and implementing the resettlement scheme (San Isidro) and adaptation projects (Tambaliza).	3	3	**6**

The interview respondents were selected based on their knowledge and experience of climate change impacts and adaptation interventions. In particular, community members were sampled "to the point of redundancy" until there was no new information forthcoming from the interviewees (Patton, 2002). The interviews were held in venues that were convenient for the participants. The NGO and government officials were interviewed in their offices, while community leaders and members were interviewed inside their homes or on the street. On average, the interviews lasted for about an hour. The community leaders and members were interviewed by the research assistants in the local language, while I interviewed NGO officials and government officials in English or Tagalog. With the consent of the participant, the interviews were recorded via voice recorder.

Interview data was analysed thematically using a hybrid approach (Fereday & Muir-Cochrane, 2006), which meant that analysis was both induced from the data itself and deduced from the relevant literature. While I have pre-determined issues of interest related to climate adaptation before the analysis, the particular themes to explore were unknown. I adopted two strategies in my analysis: close reading and open coding (Emerson et al., 2011). Close reading involved examining, line by line, all the interview transcripts alongside my fieldnotes and policy documents to identify patterns from the two case study sites. Open coding involved uncovering the thoughts, ideas, and meanings contained within the interview transcripts, allowing me to "identify concepts or labelled

phenomena" (Levy, 2006, p. 382). I used the qualitative data analysis software NVivo to manage coding and arrange the emerging themes from the interviews into nodes. Data presentation were then drawn from nodes with the highest prevalence and supplemented with participant quotes and photographs.

3.4.5 Observation and field walks

Participant observation provided opportunities for collecting data on people's behaviours and activities. It provided a better understanding of the dynamics of the community consultations and the planning processes of the adaptation interventions. The process involves observing things that happen, listening to what is being said, and questioning people over some period of time (Becker & Geer, 1957). In addition, Musante and DeWalt (2010) argue that observation helps researchers develop a more holistic understanding of the phenomena and increases the validity of the data collected from surveys and interviews through triangulation. Following Bogdan and Biklen (1998), an observation protocol was used in order to record information while the community meetings were observed. Two types of information were collected: "*descriptive notes* such as portraits of the participants, a reconstruction of dialogue, a description of physical setting, accounts of particular events, or activities and *reflective notes* such as the researcher's personal thoughts, speculations, feelings, problems, ideas, hunches, impressions and prejudices" (Creswell, 2014, p. 244).

I was able to secure approval to attend three community consultations (one in San Isidro and two in Tambaliza) which were organised by the NGOs. These public forums were facilitated by NGO staff members and attended by the local residents, other NGO staff, and some barangay officials. I collected the following data: attendance of the participants, frequency counts of the issues raised, the number of times each attendee spoke, and the flows of the conversation (who talked to who). Each meeting lasted for approximately two hours, and the observational data were collected using a voice recorder.

Field walks were also an important data collection method during my fieldwork. Field walks include any structured or unstructured walks for the purpose of observing and exploring different aspects of a built and natural environment (Ingold & Vergunst, 2008). Pink et al. (2010) also contend that walking is fundamental to fieldwork because it is an important means of creating a better understanding of places. Field walks were very instrumental in addressing Research aim 3, as it helped uncover the diverse and locally-based activities and practices that residents engaged in to adapt to climate change.

With limited time in the field, I took every opportunity to attend any activity or meeting that I was invited to. Consequently, I became familiar with the field sites, its infrastructures and facilities, and

its residents. I engaged in informal conversations with local residents, and I began to know them, their livelihoods, and their interactions with their neighbours. I spoke to them about my research project and gained insights into their perceptions of adaptation interventions within their communities. Casual remarks and comments were useful as residents were more comfortable and open to sharing their thoughts with me when I was not formally recording. All in all, observation and field walks allowed me to better understand the various perspectives of the communities that I studied because I joined them in common events and activities.

3.4.6 Content Analysis of Climate Adaptation Planning and Implementation Documents

In this thesis, content analysis was employed to better understand the rationales, objectives, and implementation schemes of the adaptation interventions. The data reviewed and analysed were the adaptation plans, project evaluation reports and policy documents of the NGOs and the local government. These documents were carefully reviewed to answer the research question '*who is targeted for climate change adaptation interventions and what factors play a role in their selection?'* (research aim 2). Ireland and McKinnon (2013, p. 158) argue that "one of the problems with adaptation… is that little work has been done to analyse the underlying assumptions of approaches to adaptation by the development sector". A careful review of the adaptation projects goes some way to fill this gap in the literature.

Secondary data sources play an important role in supplementing the literature review and primary data whilst also providing context to the study (White, 2010). In this thesis, the following secondary data were reviewed and analysed:

1. **Government documents** – pertaining to the San Isidro resettlement, relevant legislation on resettlement, and the socio-demographical data on Iloilo. Specific sources included:
    a. Iloilo Flood Control Project Resettlement Action Plan (DPWH, 2005)
    b. Socio-Economic Baseline Information on Project Affected Families (DPWH, 2003)
    c. 2013 – 2019 Iloilo City Comprehensive Development Plan (Iloilo City Government, 2013)
    d. Iloilo City Ecological Profile 2015 (Iloilo City Government, 2015b)
    e. Final Report on the Effects of Typhoon Frank (Fengshen) (National Disaster Coordinating Council, 2009)
    f. Final Report of the Effects of Typhoon Yolanda (Haiyan) (National Disaster Risk Reduction and Management Council, 2013)
    g. Republic Act 7279: Urban Development and Housing Act of 1992
    h. Republic Act 10121: Disaster Risk Reduction and Management Act
    i. Republic Act 9297: Climate Change Act of 2009

2. **Media / newspaper reports** – articles from various local and national online newspapers on the following topics were reviewed: "Iloilo Flood Control Project", "resettlement", "relocation", "disaster risk reduction", and "climate change adaptation".

3. **NGO project documents** – evaluation documents of the various NGOs' response to Typhoon Haiyan in Concepcion, Iloilo. These documents outline the details of their projects including the objectives, targets, and mechanisms for beneficiary selection.

4. **Development Agency documents** – other documents published by development agencies that were involved in climate-related projects in Iloilo. These include:
   a. United States Agency for International Development's (USAID) Assessment of Water Security, Development, and Climate Change in Iloilo City (USAID, 2013)
   b. Japan International Cooperation Agency (JICA) Evaluation of the Iloilo Flood Control Project (Japan International Cooperation Agency, 2013)
   c. Asian Coalition for Human Rights Thinking City-WIDE in Iloilo City (Asian Coalition for Human Rights, 2009)

These documents were analysed by close reading, open coding and memo writing using the NVivo software. Close reading provided me with detailed information on the adaptation interventions implemented in the study sites. Open coding helped me identify the key themes related to the adaptation interventions such as "project rationale", "objectives", "targets of interventions", and "success indicators". Memo writing helped me clarify ideas and elaborate on the emerging themes and relationships between them. Using a software like NVivo helped ensure the rigour and minimise errors in the analysis process (Maher et al., 2018).

The information gathered from the review of these documents was then used as a benchmark to assess whether the adaptation projects achieved what they intended to do in the two communities. It was also used to compare what groups were targeted by the interventions with the groups who were actually involved in (and benefited from) the final projects.

3.5 Research Challenges

This section presents a few of the challenges I encountered during the field work. First, survey implementation was delayed by two events that were beyond my control: (1) the barangay elections and (2) the anti-drug campaign of the Duterte administration. First, the timing of the field work in San Isidro coincided with the campaign period of the barangay elections in 2018. Because of election-related violence reported in Iloilo at that time, there were some security concerns amongst the members of the research team. Field work had to be delayed for a few weeks to allow the political tensions to diminish. Second, the anti-drug campaigns have brought about fear in many Philippine cities due to many outright shootings that have remained unsolved (Jensen & Hapal,

2018). This has affected the recruitment of survey interviewees, causing significant delays to the field work. The delays were nevertheless productive as the research team spent that time carefully reviewing and revising the questionnaires.

Second, some suspicions arose among the residents in both study areas, especially when the pilot surveys were conducted. Even as the survey information and consent form were read aloud to potential respondents, there was some resistance among the participants especially when they were asked to affix their signatures. According to some of the informants, the cause of suspicion was twofold. One, asking for signatures is similar to the modus operandi of the Priority Development Assistance Fund (PDAF) scam, in which funding is allocated to politicians for local projects and then diverted to corrupt ends (Mendoza et al., 2014). Residents were apprehensive of affixing their signatures as they did not want to be associated with such illegal activity. Second, the requirement for signing a form, coupled with the giving of goods as a token of appreciation, was similar to the recruitment strategy of the communist insurgent group called the New Peoples' Army (NPA). To overcome these difficulties, the research team obtained written approval first from the barangay captain, community leaders, and NGO officials. The research team also wore IDs with the attached signature of the barangay captain during the field work. The tokens of appreciation were also given after all the surveys had been conducted.

Third, my physical appearance also created some difficulties during the field work. I look like a foreigner because I am half Chinese. Some of the locals, especially the elderly, were hesitant to speak to me during the early stages of the fieldwork. When I approached a local's house, the resident would either pretend to be busy working on household chores or simply look the other way. I raised this issue with my host NGO and they told me that a number of the residents are shy to talk to strangers especially foreigners. They suggested that I go with them during their "rounds" so that they can introduce me properly. The local research assistants were also very helpful in building rapport with the residents by engaging with them in informal conversations. These helped break the ice and build familiarity.

Finally, my presence in the field generated some expectations among the residents. I was told several times that I looked like someone who had connections with the authorities, so they were requesting me to help direct their concerns to people above. They complained that they already raised their issues several times and that maybe an outsider will finally be able to convince the authorities to do something. I tried my best to temper these expectations by reminding them that I was an independent researcher without any solid connections to the officials. I assured them, however, that once some of my research is published, I will share it with them and forward it to the local authorities as well.

3.6 Research Limitations

To conduct and complete the research project with limited funding, time, and resources, a number of limitations were experienced. First, the data collection was restricted to only two barangays in Iloilo. Constrained funding and time limited the scope of data collection to the two sites. The sample sizes are therefore not necessarily representative of the whole city. Nevertheless, this lack of generality and universality of the research findings is not a large concern because the research is intentionally localised and it does not seek to scale up the findings on adaptation to universal models.

Second, another limitation of the study was that the data collection was conducted several years after Typhoon Frank (2008) in San Isidro and Typhoon Haiyan (2013) in Tambaliza. This meant that the project was reliant on memory recall. To address this concern, the respondents were provided with cues, such as asking them where they were, what they were doing during the typhoon, or who they were with. Some interview respondents even suggested and invited me to physically re-trace their steps during the typhoons to promote recall. I always obliged as a number of studies in psychology indicate that performed actions are better remembered than observed actions (Steffens et al., 2009; Steffens et al., 2015). I also allocated ample time for the interviews, allowing the respondents to adequately refresh their memory in their own time within a calm and supportive environment.

Third, the fieldwork was only conducted for five months. This is a very short amount of time to collect data. This meant that the project was unable to look at the different temporal and spatial components of climate change adaptation across multiple scales. This was nevertheless mitigated by the fact that I had some established relationships with a few NGO staff members who helped connect me to relevant stakeholders and community members. So, while the study was just a snapshot in time at the local level, the data obtained was rich and relevant.

The last limitation in this study is the translation of the respondents' answers from the local language to English. The meaning of some spoken words are changed slightly following translation. This meant that loss of meaning may occur as the translator may choose to interpret what the interviewee says without consulting either with the respondent or the researcher. To reduce the inaccuracy, some important local words used by the participants are presented in italics. Informal feedback on the interpretations were also sought from a colleague who working at a local college.

3.7 Research Ethics

La Trobe University's Human Ethics Committee (HEC18038) granted ethics approval for this study stating that it complies with the National Statement on Ethical Conduct in Human Research. The two ethical considerations for this study were informed consent and right to anonymity and confidentiality of participants and NGOs. This research was intended to be transparent and open, so the participants were fully informed about the research before they were asked for consent to participate. To avoid deception, I met several times with key parties such as the NGOs, the government officials and the community members before data collection. I disclosed the purpose of the study to them in plain language and asked for their approval. All participants were provided with a copy of the Participant Information Statement (Appendix 6) prior to the conduct of data collection. Individual consent forms were collected during the project.

Another important ethical consideration for the project was the anonymity and confidentiality of the research participants and the NGOs. Walter (2019, p. 115) contends that participant protection should always be "supported by principles of … anonymity, confidentiality and protection from harm". Anonymity and confidentiality are critical to this study because of the consequent risk of harm to reputation for both the NGOs and the research participants themselves. I have attempted to treat all collected data with sensitivity and excluded data that I deemed would cause any personal harm to any participant. To ensure anonymity, the NGOs and individuals involved were not referred to by their names. Hence quotations were de-identified and names were replaced with pseudonym or general title throughout the findings chapters. For example, the NGOs were given fictitious names (e.g. Dutch Hospitality) and the names of the interview respondents were replaced with generic descriptors (e.g. Female, Sitio Proper, date of interview). Specific permission was also requested to use data that might be considered sensitive (e.g. photos, documents, contracts). The presentation of the photos of respondents' houses and community meetings were authorised by the research participants, while the names in the photos of documents with sensitive information have been redacted and censored. Finally, fieldwork data was stored in password-protected devices to protect the identity of the participants. Access to this data is only limited to the research team to ensure its confidentiality.

3.8 Summary

This chapter presented the research methodology and design of the thesis. Figure 3.2 provides a schematic of the progression from methodology to research methods. First, the chapter elaborated on the philosophical position the study took in response to the aim of critically interrogating and re-thinking climate change adaptation. A careful review of the adaptation literature highlights its potential to subvert justice and exacerbate intra-community inequalities. As a result, this thesis

situates itself within the transformative paradigm − a philosophical worldview that centralises the lives and experiences of vulnerable and marginalised groups, how they have been constrained by oppressors, and the strategies that they use to resist, challenge and subvert these constraints (Creswell, 2014, p. 39). The ontological position of a transformative paradigm is that reality is socially constructed and that certain groups occupy a position of greater power than others.

Figure 3. 2: Methodological Framework for the Thesis

Philosophical Worldviews	Theoretical Perspectives	Design	Methods

- Transformative
- Critical Inquiry
  1. Just Adaptation
  2. Capabilities Approach
  3. Postdevelopment
- Mixed Method
- Case Study
- Survey
- Interviews
- Observation
- Secondary Analysis
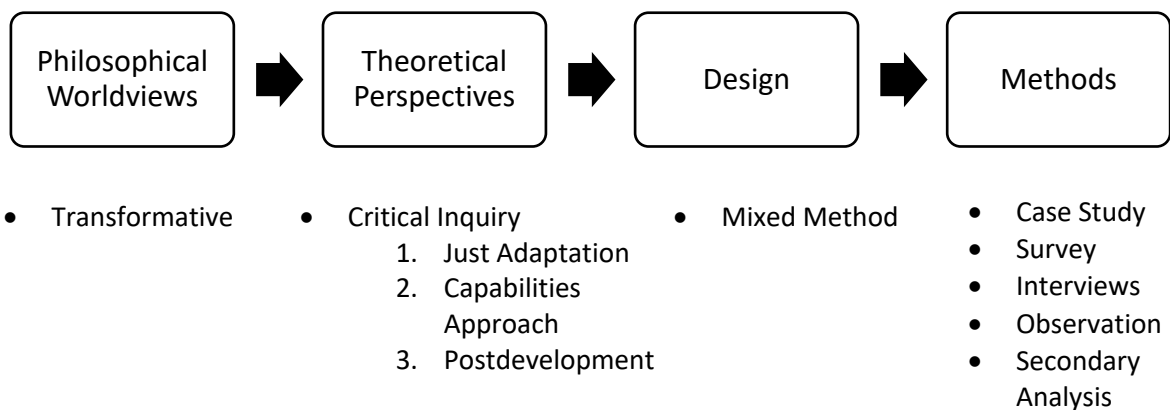
Adapted from: Gray (2004, p. 16)

Second, adopting a transformative paradigm requires the use of a theoretical framework. As such, the nature and order of data collection is theory-driven (McBride et al., 2018). In this thesis, I draw upon three distinct theoretical perspectives: just adaptation, capabilities and postdevelopment theory. These three theories have shaped and guided the choice of research design and methods for the study. The just adaptation literature interrogates the distributive, procedural and recognitional justice of the interventions. The capabilities approach explores the socio-political conditions that determine the distribution of benefits and burdens of the adaptation interventions. A postdevelopment lens helps illuminate the locally-based, diverse, and ethical pathways to adaptation. These complex and multifarious concepts cannot be captured and operationalised with the exclusive use of quantitative or qualitative tools alone. A thorough understanding of the socio-economic conditions, social structures, and power relations present within the communities necessitated the use of mixed methods.

Third, given the nature of the research questions, mixed methods were deemed appropriate for the purposes of the study. Multiple forms of data, such as questionnaire surveys, interviews, and observations, were collected and then analysed. The value of using mixed methods is its ability to neutralise the biases and weaknesses of each form of data. The convergence of quantitative and qualitative data eventually leads to triangulation. Hence the use of mixed methods adds "great strength to your arguments; how much more convincing it is to have many voices rather than one telling us the same thing" (Evans et al., 2011, p. 90). Aside from strengthening one's arguments, mixed methods also help create a more nuanced picture by combining information from multiple

types of sources. It can provide the breadth and depth necessary to provide a comprehensive analysis of the research problem.

Finally, case study design was deemed appropriate because it can generate a multi-faceted and in-depth understanding of a complex issue such as adaptation justice. Exploratory and explanatory in nature, a case study can also be used to gain a more comprehensive and holistic understanding of an issue in a real life setting (Denzin & Lincoln, 2005). It can also address the how and why questions (Stake, 2013) posed in the thesis. Two case studies were conducted which employed the use of four data collection methods: (1) surveys to understand people's perceptions of justice in adaptation projects; (2) interviews to elicit more detailed explanation of people's experiences; (3) observation and field walks to explore the dynamics of adaptation planning and community meetings; and (4) secondary data sources to evaluate plans vis-a-vis practices as well as supplement the literature review.

A summary of the research questions, types of data collected and the research methods employed are provided in Table 3.6.

Table 3. 6: Summary of the Research Design

Thesis chapter and Research Questions	Data sources	Research Methods
Chapter Five *How are the impacts of adaptation interventions distributed?*	Survey, interviews, government and NGO policies and documents	Survey, interviews and analysis of secondary data
Chapter Six *Who is targeted for the adaptation interventions and what factors play a role in their selection?*	Survey, interviews, observation notes, government and NGO policies and documents	Survey, interviews and analysis of secondary data
Chapter Seven *What are diverse and locally-based ways that communities are responding to the pressures of climate change?*	Observation notes, interview transcripts	Interviews, observation and field walks

The next chapter details the rationale, objectives and targets of the adaptation interventions in the two study areas.

Chapter 4: Sites and Design of the Climate Change Adaptation Interventions

4.1 Introduction

After discussing the relevant theory and methodology in the preceding chapters, this chapter provides an overview of the two study sites together with the socio-economic conditions of their residents. It identifies who were most vulnerable to climate impacts and in need of adaptation assistance. Furthermore, the chapter also outlines the adaptation interventions that have been implemented and explains their rationale and intended targets. The chapter attempts to answer the following: (1) why were the projects necessary? (2) what were their goals? And (3) who was deemed to require adaptation assistance?

This chapter is organised in four remaining sections. Section 4.2 introduces the province of Iloilo in the Philippines and describes in detail the two case study areas– San Isidro Resettlement Site and Tambaliza. Section 4.3 presents a socio-economic and demographic profile of the residents. Section 4.4 provides the rationale, objectives and the intended targets of the adaptation interventions. Section 4.5 provides a summary of the chapter.

4.2 The Study Sites

Climate change poses a significant threat to a disaster-prone country like the Philippines. Its geographic location coupled with its poor socio-economic status make the Philippines vulnerable to climate-induced disasters (Acosta-Michlik & Espaldon, 2008). According to the United Nations Office for Disaster Risk Reduction, "at least 60% of the country's total land area is exposed to multiple hazards, and 74% of the population is susceptible to their impact" (UNDRR, 2019, p. 6). Jha et al. (2018) estimates that over 80% of natural disasters that occurred during the last half-century were due to hydro-meteorological events such as typhoons and flooding. In the past decade, Porio (2014) claims that the frequency and magnitude of typhoons has increased. These natural hazards have increased the environmental risks faced by the residents.

The effects of these natural hazards are further compounded by the country's socio-economic conditions and policy-related responses. Home to 101 million people (Philippine Statistics Authority, 2017), the poverty incidence among Filipinos is around 21.0%. The country is also ranked 116 out of 188 countries on the Human Development Index, with an average life expectancy of 68 years (UNDP, 2019). Morin et al. (2016) estimates that one third of its inhabitants live in informal settlements with substandard housing and a lack of infrastructure. The lack of secure land

tenure has forced many residents to inhabit hazard-prone areas such as riverbanks and waterways, which heighten their vulnerability to natural hazards (Swiss NGO DRR Platform, 2014). Rapid urbanisation and demographic growth have also reduced the availability of basic services like water, electricity and healthcare. The Office of Civil Defence explains that the indiscriminate conversion of agricultural lands into urban areas has resulted in "the loss of topsoil and destruction of the natural ecosystem. This has resulted to flooding, with the ground's capacity to absorb water compromised, and further exacerbated by clogging of sewage and drainage systems" (OCD-NDRRMC, 2015, p. 41).

Meanwhile, the Local Government Code of 1991 has institutionalised a systematic decentralisation of the powers from the national government to the local governments (Guevara, 2004). Services such as health, education, housing, and social welfare have been devolved to the local government units (LGUs). This has occurred alongside privatisation policies that have also shifted the burden of delivering public services from the government to the private sector. Public-private partnerships have been utilised as a major strategy in mobilising capital for investment in infrastructure developments such as roads, utilities, and mining explorations (Porio, 2014). The underlying rationale behind the privatisation policies is that "they will lead to more efficient and effective functioning of governments and the expansion of economic growth" (Porio, 2012, p. 13). According to Porio (2016), the recurring flooding events coupled with large privatised infrastructure projects has widened the gap between the rich and the poor in terms of access to basic services, housing, employment, and other economic opportunities. The uneven access to services and opportunities helped "ensure the persistence of poverty… that the unequal structures of power remain strongly entrenched" (Ibid., p. 193 – 194).

One Philippine province that is frequently affected by climate-related hazards is Iloilo (Figure 4.1). It is the regional hub of Western Visayas, located on the southeast portion of the Panay Island. According to a report published by the United States Agency for International Development, "Iloilo faces significant exposure and vulnerability to water… and these vulnerabilities can be affected by climate variability and expected to be made worse by climate change…" (USAID, 2013, p. 6). Its city centre, Iloilo City, is not only traversed by four different bodies of water. It is also located on a flat alluvial plain where the amount of overflowing waters from rivers and tributaries upland create a "situation of extremely high exposure to floods" (Iloilo City Government, 2015a, p. 24). In 2008, Typhoon Frank devastated Iloilo City by unleashing 354 mm of within 24 hours. As a result, 152 of its 180 barangays were flooded. 52,271 families or 261,355 people were affected, and 105 people died. Furthermore, Php 525 million worth of damage was incurred in agriculture, infrastructure and businesses (National Disaster Coordinating Council, 2009).

Figure 4. 1: Iloilo, Philippines

Source: Iloilo City Government (2015b, p. 11)

Despite its vulnerability, Iloilo has shown a lot of promise in terms of climate governance and disaster risk reduction. Iloilo has invested heavily in climate adaptation planning and programmes over the last decade, making it an appropriate site to study. From 2015 to 2017, its provincial government was awarded with the Seal of Good Local Governance (SGLG) in the areas of disaster preparedness, social protection, and peace and order. In 2019, the city was awarded the *Gawad KALASAG* Award for excellence in disaster risk reduction and humanitarian assistance (Sunstar Iloilo, 2019). This award is conferred by the national government in recognition of the local government's contribution in rebuilding the resilience of communities to disasters (Republic of the Philippines, 2008). In terms of resettlement, the city's resettlements are regarded as some of the best in the country, well known for being participatory and non-violent (Lena, 2018). Buoyed by this positive reputation, the national government stated that it intends to use Iloilo's resettlement programme as a model for other adaptation projects in the Philippines (Cruz, 2019).

The combination of Iloilo's vulnerability to climate change and its lauded resettlement programme, which will serve as a template for future resettlement projects in the country, make it an interesting and important place to research the issue of "just adaptation". As the detrimental effects of adaptation have been well documented in other contexts, any claims to success warrant scrutiny. This thesis specifically investigates adaptation at two communities in Iloilo: San Isidro Resettlement and Tambaliza. Both are highly exposed to climatic stresses and have been the targets of adaptation interventions.

4.2.1 San Isidro Resettlement Site

San Isidro is one of 24 resettlement sites constructed as part of the Iloilo Flood Control Project (IFCP). The IFCP, which began in 2002, is large in terms of investment and scale – it is one of the biggest resettlement projects in the city's history (Subong, 2011). The IFCP required the resettlement of 3,500 households, the majority of whom lived below the poverty line, to a 16.2-

hectare resettlement site in San Isidro (Figure 4.2). The resettlers were drawn from several barangays located in the districts of Jaro, La Paz, Mandurriao, and Pavia. These areas are traversed by the Iloilo River, Tigum River, and Dungon Creek, and were therefore highly susceptible to flooding (USAID, 2013). The IFCP embodies the principle of "Resettlement with Development" – in addition to mitigating the risk of flooding, it aims to restore, improve and diversify livelihoods (DPWH, 2005). Some commentators have applauded the project as the backbone of progress (Santiagudo, 2019) that paves the way for development in the city (Tayona, 2019). As a result, it has been proposed as a model to guide the resettlement of another 10,000 households in the future (Philippine News Agency, 2017).

Figure 4. 2: San Isidro Resettlement Site in Jaro City
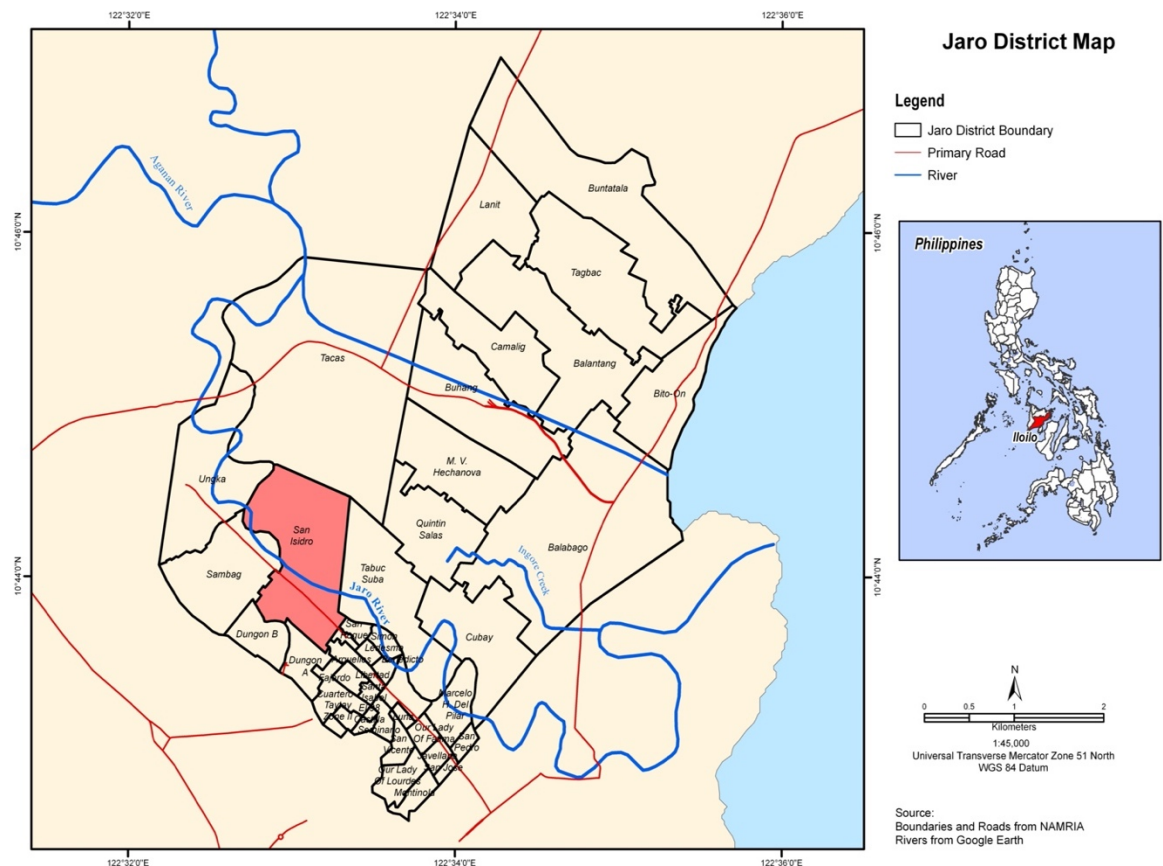
Source: Author

San Isidro Resettlement Site is in barangay San Isidro in the district of Jaro. Jaro is the biggest district in Iloilo City and its economy is driven by a wide range of industries including business process outsourcing (BPO), trading activities, agriculture as well as service-driven companies such as banks, educational institutions and hospitals (Remo, 2017). San Isidro has a land area of 166.24 hectares and is home to 13,819 people. According to the CBARAD Project (2015, p. 29), "San Isidro is high risk to flood given its location between Tigum River and Dungon Creek… The barangay is also prone to other hazards like fire and typhoon." Consequently, the city government identified San Isidro as a key priority in working to build the adaptive capacities of its residents.

The IFCP was guided by a Resettlement Action Plan (RAP), drafted by the Department of Public Works and Highways (DPWH) with the assistance of three engineering and consultancy companies, two based in the Philippines and one in Japan. The RAP complied with the social safeguard policies of the Asian Development Bank (ADB) and the World Bank, both considered international best practice in this area. The RAP also noted that the capabilities of the city government were not sufficient to meet the demands of the relocation. Thus, the local barangay officials and four external NGOs assisted the government with the resettlement process and construction of new housing. Project-affected families were resettled in one of four NGO housing projects.[3] The NGOs differed in their provisions (services and resources), funding sources, and relationship with the city.

The largest and most politically connected NGO is 'Dutch Hospitality'. It is funded by the UK and Swedish development agencies − DFID and SIDA, respectively. It is regularly involved in resettlement in the Philippines and is the city government's preferred provider of resettlement services. It also offered a superior resettlement programme compared to the other three NGOs. Households were referred to Dutch Hospitality based on an assessment of their household income and capacity to service low interest loans. Loan amounts ranged between Php 70,000 and 150,000 with interest rates ranging between 3 to 6 percent, and maturities of between 7 and 16 years. The relocatees supported by Dutch Hospitality, therefore, had to apply for a loan for the purchase of construction materials *and* build their own houses. They were supported through ongoing trainings to plan, design, procure materials and construct climate resilient houses. A community savings scheme was established to help resettled households build their financial capacity and fund livelihood development and housing improvements. The houses built by this NGO are 30 to 50 square metres and have two storeys, with sanitation, electricity and water (Figure 4.3a).

Figure 4. 3: Typical housing in the resettlement site

a. Typical house constructed by Dutch Hosp.   b. Typical house constructed by other NGOs

Source: Author's photos, 2018

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[3] The NGOs are not named to protect the anonymity of the NGOs and their officials.

The funding for Dutch Hospitality was sufficient for the construction of 172 housing units. However, because the IFCP necessitated the relocation of 3,500 families, the local government brought in other NGOs (designated Concern Italy, Houses4Humanity, and Care Foundation respectively) to accommodate the rest of the households. Unlike the arrangement with Dutch Hospitality that requires loans, these three NGOs offered the relocatees free prefabricated houses in exchange for 'sweat equity' in the construction of their homes. The houses were smaller than those provided by Dutch Hospitality (20 – 24 square metres) and only one storey high (Figure 4.3b). They were connected to electricity, water and sanitation, but as discussed in later chapters, the condition of these services was substandard. Thus, the material circumstances of the resettlement varied according to which NGO a household was referred to. A summary of the NGO partners and their arrangements with their respective project recipients are presented in Table 4.1.

Table 4. 1: Comparison of housing between the 4 NGOs in the resettlement site

	Dutch Hospitality	**Concern Italy**	**Houses4Humanity**	**Care Foundation**
Total No. of Housing Units	172	500	500	80
Floor Area	30 – 50 sq. m.	20 sq. m.	20 sq. m.	24 sq. m.
Housing Design	Duplex	Rowhouse	Rowhouse	Rowhouse
Fee	Loan	Free	Free	Free
Extent of community involvement	All stages (design, procurement, and construction)	Housing construction	Housing construction	Housing construction

Source: Author

4.2.2 Tambaliza, Concepcion

Barangay Tambaliza is one of the 17 small islands in Concepcion – a coastal municipality located at the northeastern part of Iloilo. It has a land area of approximately 775 square hectares and a population of 3,403 supporting 719 households (Philippine Statistics Authority, 2017). The barangay is bounded by the Visayan Sea, a major source of fish across the Visayas region of the Philippines. Tambaliza's primary source of income is fishing followed by farming. Several households also raise poultry and livestock for local consumption.

Tambaliza is divided into seven smaller *sitios*, territorial enclaves that form part of a barangay. The six sitios (Proper, Banban, Bat-os, Guinmisahan, Pasil, and Punting) are adjacent to one another while one sitio (Botlog) is geographically isolated from the rest (Figure 4.4).

Figure 4. 4: Barangay Tambaliza in Concepcion, Iloilo
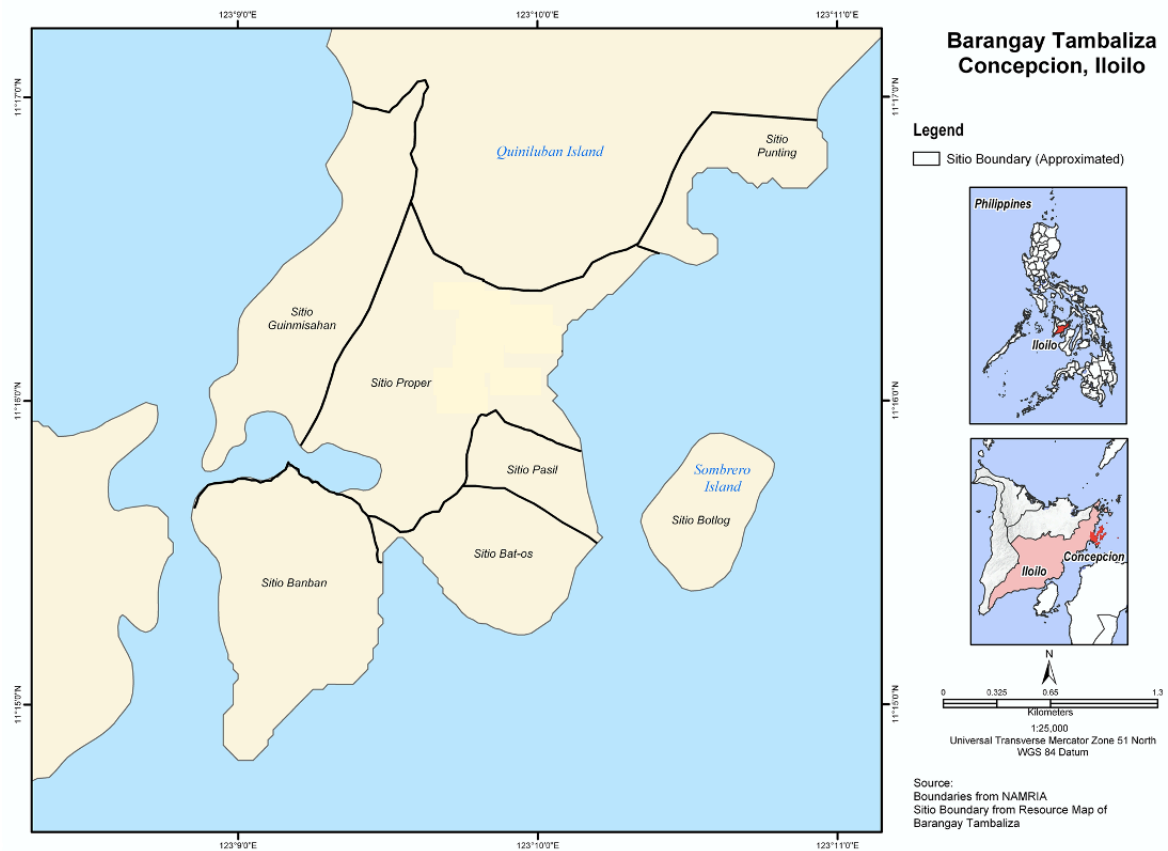
Source: Author

Based on risk assessments conducted by the barangay, Tambaliza is susceptible to four climate-related hazards: storm surges, sea level rise, typhoons and droughts (Bgy. Tambaliza, 2012). Each sitio has different levels of exposure to these hazards. Botlog, Bat-os and Punting are situated along the coast, making them especially vulnerable to storm surges. Whereas Guinmisahan, Banban and Proper are further inland and less exposed to storm surges. In terms of sea level rise, Punting and Botlog are more affected than the other sitios due to their low lying location – their rice fields are regularly flooded by sea water during high tides (Bgy. Tambaliza, 2012). Abian (2016) estimates that the 40% of households on Tambaliza that reside within 40 metres of the sea will be completely inundated by 2035. The Municipal Disaster Risk Reduction and Management Plan of Concepcion (2017, p. 20) further states that the entire municipality (including Tambaliza) has "typhoon and drought severity ratings of 100% based on the probability of occurrence and percentage of impact". The increased frequency and intensity of typhoons usually result in one-metre-high floods that inundate the rice fields. Meanwhile, during the summer, the sources of water in the island dry up, "affecting vegetation, livestock and people… (who) fear the burdensome process of fetching and acquiring water from other areas" (Municipality of Concepcion, 2017, p. 25).

Concepcion, where Tambaliza is located, is one of the poorest municipalities in Iloilo. It is classified as a third-class municipality based on its the average annual income range of approximately Php 5

76

- 9 million (Republic of the Philippines, 1987b) and poverty incidence of 57.1% (National Statistical Coordinating Board, 2009). The onslaught of Typhoon Haiyan in November 2013 exacerbated the difficulties of living in the region. The municipal office estimated that 2,662 boats were destroyed, amounting to Php 43 million in damage (Municipality of Concepcion, 2017, p. 17) and it destroyed crops, produce, poultry and farmlands. According to the Municipal Agricultural Office, 2956.42 hectares of agricultural land was affected at a cost of Php 81 million (Municipality of Concepcion, 2017, p. 16). Infrastructure facilities such as electricity, roads, and buildings were also damaged (Lum & Margesson, 2014). While all sitios on Tambaliza were affected, none was more devastated than Botlog. Although there were no casualties, it was the only sitio where all 51 houses were destroyed (Penaflor, 2013).

Two weeks after Typhoon Haiyan, humanitarian and development organisations provided emergency relief to the effected households. These interventions occurred in three distinct stages. Between 2013 and 2014 there was an emergency relief phase which involved the provision of emergency food and shelter kits. An early recovery phase followed in 2015, focused on food security and livelihoods. Finally, 2016 marked the beginning of a medium/long-term recovery phase that attended to climate change adaptation (Hanley et al., 2016). The programmes implemented by the NGOs in this study fall under the latter category as they sought to help communities reduce the risks of future severe weather events.

During my field work in 2018, only a handful of the NGOs remained in Tambaliza. Three NGOs were chosen as subjects in this thesis for three reasons. First, aside from the fact that their project signs and logos were ubiquitous in the barangay, the three NGOs were frequently mentioned by the residents during the initial exploratory stages of the field work. Second, I had already developed connections with the three NGOs in previous research projects and they expressed consent to be observed and be interviewed. Finally, the three NGOs carried out a wide range of climate adaptation projects across Tambaliza. To protect their anonymity and uphold ethical requirements, the NGOs are designated as Sacred Aid UK, British4Environment, and First Response Ireland. These three Europe-based NGOs, together with their climate adaptation projects, will be introduced later in the chapter.

4.3 Demographic and Socio-Economic Profile of the Target Population

This section provides the social demographic profile of the residents in both communities. Of particular importance are the demographic conditions that existed before the adaptation interventions, such as gender, age, housing conditions, incomes, and sources of livelihoods. This provides a snapshot of people's pre-intervention livelihoods to gain a more nuanced understanding of the impacts of the interventions. To this end, this section answers the question: based on pre-

existing levels of vulnerability, which among the groups or locales were in greatest need of adaptation assistance?

4.3.1 Socio-economic Profile of the Project-Affected Families in San Isidro

In San Isidro, the survey results indicate that the demographic conditions before resettlement were highly uneven. Those referred to the different NGOs varied by gender. Whereas the number of men and women in Dutch Hospitality were almost even, there were more women than men among the residents who engaged with of Concern Italy (66% women), Houses4Humanity (60% women), and Care Foundation (58% women). According to Neumayer and Plümper (2007), women are particularly vulnerable during disasters because they are more likely to have an additional burden as caregivers to children and/or elderly.

The age of the participants also varied across the NGOs. The median age among the survey respondents in Dutch Hospitality is 45 years old. This is significantly lower than the respondents from Concern Italy (55 years old), Houses4Humanity (52 years old) and Care Foundation (50 years old) respectively. Peacock et al. (1997) explain that the elderly are vulnerable to disasters not only because they may experience more health problems but also because they may experience distress at the possibility of being displaced.

Table 4.2 demonstrates the differences in housing conditions of the households before they were relocated. It shows a disparity in the quality of housing materials among the survey respondents. Before resettlement, more respondents from Dutch Hospitality (72.7%) reported to have strong roofs compared to households referred into the other NGO programmes. Before resettlement, a third of residents from Dutch Hospitality (27.3%) also reported having strong walls, whereas more than half of the respondents from Concern Italy (73.8%), Houses4Humanity (67.6%) and Care Foundation (63.3%) lived in houses made of light materials. Thus, based on the strength of housing conditions reported by participants before resettlement, the residents of Concern Italy, Houses4Humanity and Care Foundation were more vulnerable to climate change than the residents of Dutch Hospitality.

Table 4. 2: Housing conditions of the project-affected households before resettlement

NGO	N	(a) Material of the Roof			(b) Material of the Outer Wall			
		Light (Cogon/ Nipa)	Iron-Concrete	Galvanised Iron	Light (Nipa/Cogon)	Wood	Semi-concrete	Concrete / Stone
Dutch Hospitality	46	12.7%	14.5%	72.7%	40.0%	18.2%	14.5%	27.3%
Concern Italy	61	18.0%	16.4%	62.3%	73.8%	14.8%	4.9%	4.9%
Houses4Humanity	60	22.6%	19.4%	58.1%	67.6%	19.4%	6.5%	6.5%
Care Foundation	33	20.4%	16.3%	61.2%	63.3%	18.4%	12.2%	6.1%

Source: Author; Compiled from the survey based on the following questions: (*a*) *What is the material of your roof? b) What is the material of your outer walls?*

The socio-economic conditions of the households before resettlement were also highly uneven. Table 4.3 shows that the residents of Dutch Hospitality had higher baseline incomes (Php 11,662.64) compared to the residents of Concern Italy (Php 6,091.38), Houses4Humanity (Php 7,245.81) and Care Foundation (Php 9,023.40). Dutch Hospitality residents were also mainly employed (43%) or operating their own small business (33%). In contrast, most of the residents of Concern Italy (34%), Houses4Humanity (33%) and Care Foundation (39%) relied on government programmes and remittances from family members. Fewer had their own business or were employed formally. Finally, most Dutch Hospitality residents (94.5%) reported that they already had enough food to eat before they were relocated. On the other hand, there were fewer respondents from Concern Italy (88.5%) and Houses4Humanity (83.9%) and a little more than half from Care Foundation (87.8%) who reported that they had enough to eat. This suggests that people with higher levels of food insecurity were more likely to be referred to the less generous NGO programmes.

Table 4. 3: Socio-economic conditions of the residents before resettlement

NGO	N	(a) Avg. Monthly Income (Php)	(b) Sources of livelihood					(c) Does HH have enough to eat?	
			Employee	Small Business	Gov't	Farming	Social Protect / Remits	Could not feed HH	Has enough to feed HH
Dutch Hospitality	46	11,662.64	43%	33%	11%	4%	9%	5.5%	94.5%
Concern Italy	61	6,091.38	26%	16%	7%	16%	34%	11.5%	88.5%
Houses4Humanity	60	7,245.81	25%	22%	5%	15%	33%	16.1%	83.9%
Care Foundation	33	9,023.40	27%	15%	6%	13%	39%	12.2%	87.8%

Source: Author; Compiled from the survey based on the following questions: (*a*) *How much is the monthly income of your household? (b) What are the major sources of your household's livelihood? (c) Does this household have enough to eat?*

These figures suggest that prior to resettlement, the socio-economic conditions of resettlers differed between the four NGOs. The residents involved in Dutch Hospitality project were better off, on average, than those involved in the Concern Italy, Houses4Humanity and Care Foundation projects. Since the IFCP resettlement was guided by a RAP that met international standards of best practice, it was expected that it would address the needs of the most vulnerable groups in the community. Indeed, it was proposed that the resettlement would be approached as an opportunity for development following the notion of "resettlement with development" that was promoted by scholars of development-displacement (Cernea, 1995; Mahapatra, 1999; Muggah, 2000). Under this approach, resettlement should be treated as a development opportunity in its own right, and that "at an absolute minimum, resettlers should be no worse off as a result of relocation" (Arnall, 2019, p. 260). This implies that the long-term well-being of all those involved in the resettlement should be improved.

4.3.2 Socio-economic Profile of the Tambaliza Residents

A snapshot of the initial socio-economic conditions in Tambaliza prior to the implementation of adaptation interventions is provided in Table 4.4. While there are only small differences in gender distribution between the sitios, other demographic factors suggest that the pre-existing social conditions of the residents were uneven. Before adaptation interventions were implemented, the residents of Proper were the most educated and had diverse forms of livelihoods that did not depend on fishing or farming. A review of the literature finds that people who depend on fishing or agriculture alone are more likely to suffer financially, especially when their livelihood sources are hit by natural hazards (Cutter et al., 2003; Hewitt & Shepherd, 1997). On the other hand, Botlog and Punting had the greatest number of people with a disability or who were senior citizens. The literature on social vulnerability identify these two groups as less likely to withstand natural disasters because of their reduced or limited physical strength (Peacock et al., 1997; Tapsell et al., 2002).This suggests that before the adaptation programs were introduced, the conditions between the sitios were unequal, with Proper being one of the more prosperous sitios and Botlog and Punting being the most disadvantaged.

In terms of housing conditions, the survey indicates that there are no statistically significant differences among the residents from different sitios. The majority of them, regardless of the sitio, resided in houses with outer walls made of light materials such as cogon, nipa, or aluminium, and had roofs made of galvanised iron. The literature indicates that communities living in makeshift homes are disproportionately affected when a disaster strikes (Compton, 2018; Eadie, 2019). According to UN-HABITAT (2017), housing structures with roofs and/or walls that are either makeshift or made of substandard materials are unlikely to withstand the impacts of strong typhoons.

Table 4. 4: Profile of Tambaliza before the implementation of the NGOs' adaptation programmes

Sitio	Gender		PWD (%)	Elderly (%)	Education			Occupation (no. of people)				
	Male (%)	Female (%)			None-Primary School	Middle School	HS-College	Fish	Farm	Teach	Sea man	Skilled
Proper	49%	51%	1.58%	8.11%	4.84%	22.38%	39.50%	89	33	7	3	5
Banban	52.33%	46.78%	1.73%	4.70%	5.20%	20.30%	22.88%	84	1	3	2	3
Bat-os	50.42%	49.58%	0.84%	4.76%	5.60%	17.09%	14.28%	63	13	1	1	7
Botlog	53.85%	46.15%	4.02%	11.20%	5.87%	15.02%	17.95%	41	12	0	0	1
Guinmisahan	53.73%	46.27%	2.17%	6.83%	3.10%	16.15%	18.01%	65	6	5	0	6
Pasil	53.17%	46.83%	0%	5.55%	6.74%	35.32%	27.78%	45	4	3	0	5
Punting	55.54%	44.46%	3.65%	7.01%	5.6%	17.96%	11.47%	99	30	1	1	1

Source: Barangay statistics office (2016)

Table 4.5 illustrates the socio-economic conditions of the residents in the seven sitios prior to the NGOs' interventions based on the survey. The residents of Botlog (Php 1,467.50) and Punting (Php 1,850.00) have lower household incomes compared to the rest of the barangay. In contrast, the

residents of Proper (Php 6,500.00) and Banban (Php 4,200.00) not only had the highest incomes; most of them were not heavily reliant on fishing. Approximately half of the survey respondents from Proper (48.6%) and Banban (60%) were employed as teachers, construction workers or factory workers. Meanwhile, more than half of the respondents from Pasil (58.3%) and from Bat-os (50%) owned a small business. Almost all the respondents from Proper (92%), Banban (90%) and Guinmisahan (86.5%) reported that they can feed their households. In contrast, Punting (20%) and Botlog (17.5%) have the highest number of respondents who reported that they could not sufficiently feed their households. These responses suggest that, given the lower socio-economic positioning of the residents of Botlog and Punting and their reliance on natural resources for their livelihoods, they potentially have lower capacities to recover from the impacts of climate change.

Table 4. 5: Economic conditions of the sitios in Tambaliza before NGOs' adaptation interventions

Sitio	N	Avg. Monthly Income (PHP)	Sources of livelihood					Does household have enough to eat?	
			Farming	Fishing	Govt	Small Business	Employee	Could not feed	Has enough to feed
Proper	35	6500.00	31.4%	54.3%	17.1%	28.6%	48.6%	8%	92%
Banban	10	4200.00	20%	70%	10%	30%	60%	10%	90%
Bat-os	10	2250.00	50%	80%	10%	50%	20%	17%	83%
Botlog	8	1467.50	25%	100%	0%	12.5%	0%	17.5%	82.5%
Guinmisahan	10	3200.00	70%	80%	10%	40%	10%	13.5%	86.5%
Pasil	12	4875.00	33.3%	83.3%	8.3%	58.3%	25%	16%	84%
Punting	15	1850.00	53.5%	80%	6.7%	0%	6.7%	20%	80%

Source: Author; Compiled from the survey based on the following questions: (*a) How much is the monthly income of your household? (b) What are the major sources of your household's livelihood? (c) Does this household have enough to eat?*

Like San Isidro, the data indicates that socio-economic conditions differed across the sitios in Tambaliza prior to the interventions. Botlog and Punting not only had more elderly, PWD and resource dependent sources of livelihood, their residents were also living in precarious housing. These uneven socio-economic conditions suggest climate change will negatively impact these sitios

more than others. This is on top of the fact that Botlog and Punting also have higher exposure to climate risks by virtue of their coastal locations. Based on the data above, the NGO interventions should have ideally targeted Botlog and Punting to raise their adaptive capacities to levels seen in the wealthier sitios.

4.4 Rationale, Objectives, and the Intended Targets of the Adaptation Interventions

The last part of this chapter is divided into three sections. The first outlines the rationale behind the adaptation programmes. The second identifies the key objectives of the adaptation interventions based on a review of project documents. The third explains how groups were identified and targeted for adaptation assistance.

4.4.1 Rationale Behind Adaptation Interventions in Iloilo

Tropical storms wreaked havoc in Iloilo in 2008 and 2013 making its residents increasingly wary of climate change. The NGOs and the local government linked the extreme weather events to climate change (First Response Ireland, 2013; Iloilo City Government, 2015a; USAID, 2013). The local authorities also blamed the external forces of nature and climate change for the flooding. The Mayor stated that "climate change has been causing extreme events like torrential rains… we need to work with each other to create adaptability measures to address climate change" (Angelo & Dela Paz, 2014). In another instance, a Councillor declared: "due to climate change, there is an increasing rate of natural disasters such as typhoons, floods, and earthquake in Iloilo…" (Delos Santos, 2017).

Apart from climate change, the local government also identified the city's floor prone terrain and location as another cause of flooding. According to the Iloilo City Comprehensive Development Plan, Iloilo's location on a flat alluvial plain make it highly likely to experience flooding (USAID, 2013). Furthermore, government officials also identified the outdated flood control infrastructures and informal settlements along the waterways as major causes of the flooding (Panay News, 2016). They claimed that they needed to relocate the illegal settlers immediately so that proper flood control infrastructure could be built along the waterways.

For these reasons, the local government emphasised the need "to ensure the resilience and adaptability of the city to climate change and disaster risks" (Iloilo City Government, 2015a, p. 28). It also called for the immediate implementation of structural measures to control water flow and protect the people by moving them away from it. This led to the Php 4.26 billion IFCP proposal, which was readily approved by the city government. The project was depicted as a long-term solution to the flooding in the city. It aimed to improve the city's drainage systems by constructing

new waterways that would divert flood waters into the sea, and installing embankments and levees to prevent water from passing to the floodplains (Asian Coalition for Human Rights, 2009; Subong, 2011). As part of the project, 3,500 families living along the waterways and canals were identified as in need of resettlement.

In Tambaliza, Typhoon Haiyan had significant impacts on livelihoods. Approximately 27% of the fishermen lost their fishing boats, fishing gear and equipment, while an additional 30% suffered severe damage to their boats, gear, and equipment (Concern Worldwide, 2015). Coconut farmers, whose trees were felled by the typhoon, were also severely affected. Infrastructure facilities such as electricity, roads, and government buildings were not spared either (Lum & Margesson, 2014). In their post-disaster needs assessment reports, the NGOs noted that the threat of climate change would persist, and so it was becoming increasingly important for communities to plan and take action (Concern Worldwide, 2015; Conservation International, 2013; First Response Ireland, 2013). The NGOs have implemented the following strategies as part of their adaptation interventions: (1) rebuilding people's shelters; (2) restoring and diversifying livelihoods; (3) re-establishing infrastructures and basic services, and (4) increasing coastal habitat protection. Collectively, the NGOs are responding to the lingering threat of climate change by implementing projects to protect the communities against its impacts.

4.4.2 The Objectives of Adaptation Interventions in Iloilo

What were the adaptation interventions trying to accomplish? This section looks at the overall goals of the projects in Iloilo. It begins with a discussion of the IFCP and then explores the interventions of the three NGOs that operated in Tambaliza after Typhoon Haiyan.

4.4.2.1 Objectives of the Iloilo Flood Control Project

As a coastal city vulnerable to climate impacts, the Iloilo city government planned the IFCP to protect its residents. By mitigating flooding, the IFCP also sought to attract investment and jobs into the city, thereby helping the local economy (Subong, 2011). The project was financed by a loan from JICA to the Philippine government, which had an interest rate of 1.7% and a maturity of 30 years. The objectives of the project were three-fold (DPWH, 2005, p. 1):

(1) to mitigate flood damage and inundation in Iloilo City and its surrounds;

(2) to create a more dynamic regional economy by creating a flood-proof urban centre;

(3) to rehabilitate and restore the urban environment by providing for more ecologically stable conditions in Iloilo City and its surrounds.

The project had two components: infrastructure construction and resettlement. The first component involved structural works, including a major floodway and river improvement project aimed at protecting against one in 20-year flood events (Japan International Cooperation Agency, 2013). Infrastructure facilities were constructed to divert water from the city to the sea. This involved the construction of the Jaro Floodway, the four bridges along the Jaro River, as well as the Tigum Bridge and the Aganan Bridge. Furthermore, the following rivers were also rehabilitated (Figure 4.5): Tigum River, Aganan River, Iloilo River, Upper Ingore Creek, and the Jaro Mouth River.

The second component of the flood control project involved relocating people. The city government, in collaboration with a number of NGOs, spearheaded the development of relocation sites and the implementation of the resettlement (Subong, 2011). The overarching goal was to move people away from danger zones and start constructing flood control infrastructures.

Figure 4. 5: The Iloilo Flood Control Project
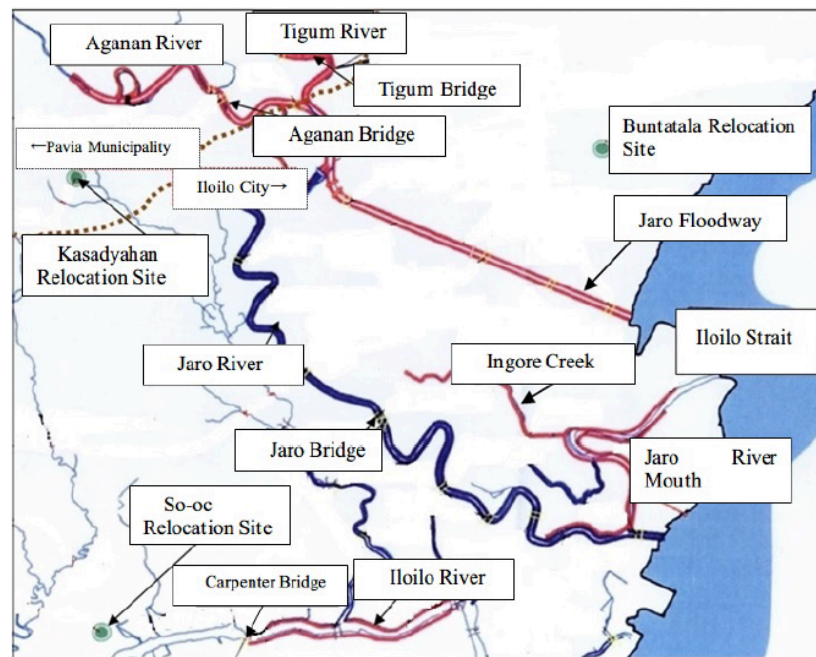
Source: Japan International Cooperation Agency (2013)

4.4.2.2 Objectives of Sacred Aid UK

Sacred Aid UK is a relief and development agency funded by several Christian churches in the UK. It works to support sustainable development and provide disaster relief in developing countries. Its Typhoon Haiyan response sought to "develop people's post-disaster resilience by empowering men and women to self-organise, anticipate, and reduce risks, respond to disasters, adapt to climate change impacts, and fully participate in governance" (Sacred Aid UK, 2016 p. 1). According to its staff, programmes are implemented in partnership with local communities affected by the typhoon (informal conversation, June 16, 2018). These partnerships enable Sacred Aid UK to focus on

coordination, networking, technical supervision, and resource generation. The objectives of its adaptation interventions in Iloilo were: (1) to provide communities with access to safe water; (2) to rebuild the settlement of disaster-affected families; (3) to enhance the capacities of governments and communities in reducing vulnerabilities and risks to climate change; and (4) to rebuild and improve the livelihood of households vulnerable to climate change (Sacred Aid UK, 2016).

To address their first objective, Sacred Aid UK installed water systems that brought water by pipe from the source to communal tap stands in the community. They also helped the residents form water associations and trained them to manage and maintain water facilities. Solar lamps were also distributed as electricity was very limited in their area. The second objective involved constructing core shelters and providing repair kits to improve the shelter conditions of affected households. The columns and beams of these shelters were made of reinforced concrete and the roofs were made of galvanised iron sheets so houses could withstand strong winds (Sacred Aid UK, 2016). To address their third objective, Sacred Aid UK trained rescuers and life savers, developed Disaster Risk Reduction (DRR) plans, and installed communication and early warning systems in the affected barangays. Hand-held radios were distributed to trained rescuers and solar-powered recharging stations and solar-powered lamps were installed in households to strengthen their sense of security. The last objective – to rebuild livelihoods and enhance resilience − involved organising Community-Managed Savings and Credit Association (COMSCA), a community-based self-help cluster of savings groups. Its purpose is to provide simple savings and loan facilities for communities who do not have access to formal financial services. COMSCA is different from micro-finance institutions because it is self-managed and independent which means that members of a community are the ones who manage the money (Ong, 2016). COMSCA groups also sought to open new opportunities for disaster-affected households to recover their income and diversify their livelihoods through the provision of grants and loans. Sacred Aid UK assisted members of COMSCA to loan money to residents so they could diversify their livelihoods. For example, some capital from COMSCA was invested in equipment to process vegetables like cassava into snack foods (Figure 4.6) and the profits were shared within the community. Sacred Aid UK also provided disaster-affected fishermen with fishing boats and gear to replace those destroyed by the typhoons.

Figure 4. 6: Cassava crackers manufactured in Tambaliza

Source: Author (2018)

4.4.2.3 Objectives of British4Environment

British4Environment is a British charity that works to promote the conservation of animals and their habitats. It selected Tambaliza as one of its field sites following the destruction caused by Typhoon Haiyan. It stated that "with these disasters, a need to increase coastal habitat protection and community resilience to respond to climate change was urgently needed" (British4Environment, 2017, p. 2). Their interventions focused on restoring mangroves and establishing more marine protected areas (MPA) across Iloilo. MPA is a method used to protect marine biodiversity and help manage fisheries (Allison et al., 1998). It is frequently associated with "increased total abundance, biomass, and diversity of all species, and… can also enhance populations and assemblages within the protected area" (Hilborn et al., 2006, p. 642).

The British4Environment project had three objectives: (1) to increase the size and management effectiveness of the MPA; (2) to diversify people's sources of livelihoods; and (3) to increase their financial resilience (British4Environment, 2017). To address its first objective, the NGO trained the local communities and government to improve their enforcement capabilities within the MPA zones. It also provided fishing wardens with marker buoys, signage, and patrol buoys to ensure proper implementation of coastal protection laws.

To satisfy its second objective of diversifying people's livelihoods, British4Environment engaged in several community projects. One project involved installing seaweed farming zones outside of the MPAs. British4Environment collaborated with local universities to help diversify community income from seaweed farming, oyster farming, and ranching of sea cucumbers. The NGO also initiated a number of mangrove-related enterprises within the community, supporting households to earn income by supplying mangrove and beach forest seedlings to government agencies and other NGOs (British4Environment, 2017).

To achieve its third objective of increasing the financial resilience of communities, British4Environment implemented several self-sustaining community savings groups called "Village Savings and Loans Associations" (VSLA). The idea is similar to COMSCA as VSLA members were also allowed to borrow loans in order to finance their own businesses and other household needs. VSLA is also self-managed and self-capitalised so "the group members are responsible for all decisions regarding the operation of the VSLA… with no external cash injection" (Care Foundation, 2014, p. 11). Its staff members assert that the VSLA did not only increase people's financial security, but it also improved access to health and education services, and acted as a platform for community engagement in the management and protection of coastal ecosystems (British4Environment, 2017).

4.4.2.4 Objectives of First Response Ireland

First Response Ireland is an international aid and humanitarian organisation based in Ireland. Its work focuses on health, hunger, and provision of relief during climate-related disasters. It implemented its response programme in Tambaliza to support the relief and recovery of people affected by typhoon Haiyan. Its disaster response project had two phases. It began with an emergency relief phase (2013 to late 2014) to provide shelter and non-food items and restore people's sources of livelihood (First Response Ireland, 2013). Its activities focused on distributing emergency shelter materials, such as tarpaulins and basic kits for hygiene, and providing funds for fishermen to reconstruct their damaged fishing boats. The second phase was the medium/ long term recovery phase, which commenced in 2015. The programmes of the NGO shifted from emergency management to restoring and diversifying the livelihoods of those exposed to natural hazards such as typhoons and storm surges. First Response Ireland initiated several aquaculture projects to create seaweed, oyster, and mussel farms. It also introduced other livelihood projects such as the raising of hogs, chicken, and goats and community gardening. Residents were involved in coral reef and mangrove rehabilitation as well as in reforestation programmes.

A summary of the adaptation projects that were implemented by the three NGOs in Tambaliza are given in Table 4.6.

Table 4. 6: Adaptation Initiatives of the NGOs in Tambaliza

	Sacred Aid UK	British4Environment	First Response Ireland
Disaster training and simulation	✓	✓	✓
Early Warning System	✓		
Community Savings	✓	✓	✓
Provision of basic services (water, electricity, etc.)	✓		
Shelter construction	✓		
Marine Protection		✓	
Mangrove Rehabilitation	✓	✓	✓
Coral Reef Rehabilitation	✓	✓	✓
Aquaculture Project	✓		
Livelihood Diversification	✓		✓

Source: compiled by the author

4.4.3 Targets of Adaptation Assistance

The notion of "putting the most vulnerable first" – the key principle guiding localised studies of climate justice (Barnett, 2009; Burton et al., 2002; Graham et al., 2015) – make the marginalised primary targets of adaptation interventions in both study areas. As mentioned above, under the Philippines' decentralised structure of governance, certain roles and responsibilities have been devolved to provinces, cities, and barangays, which are collectively known as LGUs (Thomas, 2015). The LGUs are expected to be at the frontline of emergency measures in the aftermath of a disaster and to work with non-government and private sector organisations to implement disaster risk reduction and adaptation programmes. It is standard practice in the Philippines that the local government, specifically the barangay, endorses a list of households in need of adaptation intervention or assistance to NGOs and other development agencies. This list is validated by the agencies themselves through house-to-house visits, discussions with neighbours, and community meetings. While the selection criteria varies between governments and NGOs, people's vulnerability is often taken into account, thereby giving preference to families with elderly, pregnant women, and children (Luna, 2001).

The Urban Development and Housing (UDHA) Act of 1992 (Republic Act 7279) is the key piece of legislation covering housing and resettlement in the Philippines. It lists the responsibilities of all actors involved in state-sponsored resettlement projects, including the mandatory provision of social services, livelihood protection and development, and community participation. The Department of Interior and Local Government (DILG) and the Housing and Urban Development Coordinating Council (HUDCC) released the implementing rules and regulations to ensure the observance of proper and humane resettlement procedures (HUDCC, 1992). The document clarifies that individuals may only be relocated: (1) when they occupy danger areas such as riverbanks,

shorelines, waterways and other public places such as sidewalks, roads, parks, and playgrounds; (2) when government infrastructure projects are about to be implemented; and (3) when there is a court order for eviction. Individuals who meet any of these three conditions can be legally relocated.

Furthermore, to be eligible for a state-sponsored resettlement programme, people must meet four criteria: they (1) must be a Filipino citizen; (2) must be underprivileged and homeless (i.e. individuals whose income falls within the poverty threshold); (3) must not own any real property according to government records; and (4) must not be a professional 'squatter' (i.e. individuals who occupy lands without the consent of the landowner and yet have sufficient income for legitimate housing). These four selection criteria were used by the implementing agencies of the IFCP to identify and target households for resettlement to San Isidro.

In Tambaliza, the NGOs stated that efforts were made to ensure that the 'right' people were identified, targeted, and provided with the necessary adaptation assistance. The 'right' project participants were those that were devastated by typhoons and rendered more vulnerable to future extreme weather events. For example, Sacred Aid UK claimed that it targeted "far-flung and island communities that were least covered by other donors… By putting the poorest of the poor at the core of its interventions, Sacred Aid UK made its position clear that its response program is not meant for the relatively strong" (Sacred Aid UK, 2016 p. 23). British4Environment maintains that one of its targets was to restore and safeguard ecosystems that "take into account the needs of women, indigenous and local communities, and the poor and vulnerable" (British4Environment, 2017, p. 77). Finally, First Response Ireland contends that it asked the barangay officials to "identify those who were more vulnerable such as the elderly and the disabled so that they could be targeted for assistance first" (First Response Ireland, 2016, p. 8).

The project documents of the implementing agencies in Iloilo confirm that their selection processes were not only targeting vulnerable communities but were also participatory. They involved the local government units, NGOs, and community leaders to ensure that the 'right' project participants were identified and targeted for assistance. They also subscribed to key principles of climate justice in that they were ensuring that the most vulnerable within the community were included. But did their interventions improve the lives of the most marginalised groups in practice? The succeeding chapters will address this question.

4.5 Summary

This chapter detailed the two study sites for this research and presented the socio-economic profile of their residents who were the subject of the adaptation interventions. It also explored the rationale, objectives and intended targets of the adaptation projects. The chapter also identified which people

and sitios were most in need of assistance based on their pre-existing vulnerabilities. The data presented in this chapter serves as a baseline for the analysis carried out in the following chapters as whether those with the greatest level of needed also received the greatest level of development assistance.

The Philippines is one of the most vulnerable countries in the world to climate change and natural disasters. Iloilo is one of the provinces most affected by climate-related hazards such as typhoons, storm surges, and sea level rise. What also makes Iloilo an interesting case study is that it is widely recognised as having one of the best disaster risk reduction and adaptation programmes in the country. It, therefore, may provide a good example of 'just adaptation' in practice. Two areas in Iloilo were chosen because they have experienced several adaptation interventions: San Isidro Resettlement Site and Tambaliza. Both are also regarded as success stories: San Isidro Resettlement Site is known to be a good example of an in-city, participatory and non-violent resettlement scheme, while Tambaliza is lauded nationally for its transparent and participatory adaptation governance. Both may provide critical insights that can help inform just adaptation practice elsewhere. Indeed, the Philippine government views the resettlement project carried out in Iloilo as being a model for future resettlement projects in the country.

The chapter also provided a socio-economic profile of the residents in the two study areas. In San Isidro, the residents of Dutch Hospitality had the highest socio-economic positioning in the resettlement site. They have higher incomes and more capacity to service low interest loans for their houses. In contrast, residents with lower incomes, who were also less able to service loans, were relegated to the prefabricated and free houses offered by Concern Italy, Houses4Humanity, and Care Foundation.

A stark difference in pre-existing socio-economic conditions was also evident in Tambaliza. The residents of Botlog and Punting have much lower household incomes compared to the rest of the barangay. In addition, Botlog and Punting not only have the greatest number of people with a disability and were senior citizens, most of their residents depend on fishing or farming. Their locations on the island also render them highly exposed to the impacts of climate change. This reveals that even before the adaptation interventions were implemented, the socio-economic conditions across the two study areas were highly uneven.

The unequal socio-economic conditions, coupled with the increasing magnitude and frequency of extreme weather events, have been widely acknowledged by the agencies tasked with implementing the adaptation interventions. Consequently, adaptation interventions have been treated as necessary and urgent measures to mitigate the impacts of climate change and to address pre-existing socio-economic disparities. Therefore, the NGO projects not only build people's adaptive capacities and

climate resilience but also to address poverty and inequality(Eriksen & O'brien, 2007). In their project reports, the implementing agencies stated that their programmes catered to the most vulnerable and most exposed to climate risk. They also claimed that their adaptation interventions were bottom-up and participatory, stressing that the residents were active participants during the consultations and planning processes.

After demonstrating the socio-economic vulnerabilities of the residents in this chapter, the next chapter explores whether the adaptation interventions of the local government and the NGOs targeted the above-mentioned vulnerable groups in practice. It examines how the benefits were shared and the costs were distributed across and within the various communities.

Chapter 5: Assessing the Distributive Justice of the Climate Change Adaptation Interventions through a Capabilities Approach

5.1 Introduction

Justice within the climate justice literature is articulated as a balance of numerous interlinked elements of distribution, participation, and recognition (Bulkeley et al., 2013; Schlosberg, 2012a). This chapter focuses on distributive justice, a concept that involves the "distribution of benefits, costs, risks and harms among human beings" (Ali, 2006, p. 2). It seeks to address the following question: how are the benefits and costs of the adaptation interventions distributed? Rather than turning to the traditional distributive justice principles which concentrate on income or resources alone, this chapter contends that adaptation interventions should do more than distribute income or resources. Sen (1990) argues that justice cannot be assessed just in terms of the distribution of primary goods or incomes. Nussbaum (1992, p. 233) also explains that "money and income are not good in their own right; they are good only in so far as they promote human functioning". They both argue that justice should not only be concerned with distributive ideals but also with the development of capabilities necessary for people to develop productive lives. This chapter thus explores distributive justice of adaptation interventions through the lens of the capabilities approach.

According to Schlosberg (2012a, p. 449), current approaches to distributive justice remain "vague about what they assert they protect and do not adequately address the elements necessary for basic human functioning". The capabilities approach, on the other hand, is very clear about its objective: for adaptation interventions to be considered just they must expand people's capabilities and functionings so that they can be or do what they consider valuable (Grasso, 2007). This means that people "should have access to the necessary positive resources and they should be able to make choices that matter to them" (Alkire, 2005, p. 117). While the capabilities approach has been utilised to study inequality in several development programmes, it has rarely been used to assess the distributive justice of adaptation interventions. Moreover, most of the studies on distributive justice have occurred at the international scale and focused on mitigation alone (Johansson-Stenman & Konow, 2010; Klinsky & Dowlatabadi, 2009), resulting to an under-exploration of how justice can be applied to adaptation processes on the ground. This chapter addresses these gaps by drawing upon the capabilities approach to explore people's experiences of distributive justice of adaptation interventions at the household level.

In spite of the utility and applicability of the capabilities approach, it is important to highlight its limitations as well. Deneulin (2002) criticises the capabilities approach for being perfectionist and identifying what is universally good from the point of view of the theorist. She argues that the

capabilities approach does not focus on the functionings that *people* specifically have chosen. Even Sen (2005, p. 77) is reluctant to develop a universal list of capabilities: "the problem is not with listing important capabilities, but with insisting on one pre-determined canonical list of capabilities, chosen by theorists without any general social discussion or public reasoning." The capabilities approach is therefore subject to inaccurate assumptions and ideological assertions rather than reasoned debate and scrutiny.

Another limitation is the mechanistic nature of the capabilities approach. It provides a very specific lens through which to study human life and just adaptation. For example, it draws upon a 'list' of capabilities and suggests that just adaptation can only be achieved when capabilities on this list are augmented (or, at the very least, not hindered). There is therefore very little room for experimentation and recognition of *other* capabilities necessary for just adaptation. Moreover, Nussbaum (2000, p. 74) describes those who lack the central capabilities as not "being able to live in a truly human way". Stewart (2001, p. 1191) contends that this is an offensive way of arguing for what is needed for human flourishing because it implies that "the vast mass of humanity who are unable to enjoy the full list of human capabilities is sub-human". In addition, the way that capabilities scholars define some of the capabilities necessary for human flourishing is quite rigid and narrow. For instance, Robeyns' (2003c, p. 80) capabilities approach subscribes to a conventional definition of work as waged labour. She calls for the need to look at "labour market participation, employment rates, unemployment rates, annual hours of work and working conditions."

For this reason, I turn to the diverse economy view of work, where explicit recognition is given to many different kinds of labour. McKinnon (2020, p. 116) contends that in a diverse economy, it is important to attend "not only to the tasks that earn a wage, but to all the activities people undertake to sustain life, including those that… contribute to social, cultural, emotional and spiritual needs." Aside from labour, Kronlid's (2014, p. 37) definition of friendship as capability "that relates to coherence between and among individuals and groups of persons" is also limited, and so I also turn to the diverse economies framework which stresses the importance of relationships that are characterised by care and interdependence (Gibson-Graham, 2006).

Despite its shortcomings, the capabilities approach is deemed appropriate for this thesis because it is a rich and multidimensional tool to assess whether adaptation interventions work to expand people's capabilities (and whose capabilities). It offers a different way of evaluating justice that moves beyond income-based approaches; it is concerned with "aspects of people's lives such as their health, the education they can enjoy and the support they enjoy from their social networks; it is also concerned with what people can do, such as being able to work, raise a family, travel or be politically active" (Robeyns, 2017) (p.8). It is thus able to address the important question: "what

should we look at when evaluating whether one state of affairs is more or less just than another?" (Robeyns & Brighouse, 2010, p. 1). The capabilities approach can, therefore, be used to evaluate justice of the adaptation interventions. This is important because understanding the nature and sources of capability deprivation is key to addressing existing injustices in society (Sen, 2009). By focusing on the capability space, this chapter hopes to better understand the distributive justice implications of the adaptation projects in Iloilo.

The chapter is arranged into the remaining sections. Section 5.2 provides a brief review of the core principles behind the capabilities approach. Section 5.3 outlines the capabilities relevant to climate adaptation. Section 5.4 analyses the aims and objectives of the adaptation interventions in San Isidro and Tambaliza through the lens of the capabilities approach. It identifies which capabilities the adaptation efforts sought to augment. Sections 5.5 to 5.8 use the capabilities approach to evaluate the distributive justice outcomes of these adaptation projects. Section 5.9 summarises the keys finding of this analysis and discusses a few of blind spots of the capabilities approach.

5.2 Distributive Justice and the Capabilities Approach

Chapter 2 discussed how distributive theories of justice have dominated discussions of climate justice. The distributive approach focuses heavily on how the 'goods' and 'bads' of adaptation projects are distributed within societies, and pays little attention to non-economic resources such as political power and cultural recognition (Brighouse, 2004). Capabilities scholars like Sen and Nussbaum argue that justice should be evaluated not simply in terms of the distribution of physical resources, but also in terms of how distributions of economic (and other social resources) affect the functioning and well-being of people's lives (Schlosberg & Carruthers, 2010). Sen contends that emphasis should be placed "on the freedoms generated by commodities, rather than on the commodities seen on their own" (Sen, 1999b, p. 74). Likewise, Nussbaum likewise asserts that justice is not solely a question of how many resources a person commands but also what she is actually able to do and to be (Nussbaum, 2000). Central to the capabilities approach are the concepts of *functionings* and *capabilities*, which allow the analyst to evaluate how interventions affect well-being, inequality and poverty (Robeyns, 2003a).

Functionings refer to a person's achieved beings and doings. For Sen (1988), functionings are related to people's living conditions. For example, functionings include working, being sheltered, being healthy, and the like. Capabilities refer to a person's various opportunities or abilities to achieve such beings and doings. Having capabilities implies that a person has *freedom* to achieve valuable functionings as an active agent (Alkire, 2005). Sen (1988, p. 36) emphasises the difference between functionings and capabilities: "A functioning is an achievement, whereas a capability is the ability to achieve. Functionings are… different aspects of living conditions. Capabilities, in

contrast, are notions of freedom in the positive sense: what real opportunities you have regarding the life you may lead." The terms capabilities and 'opportunity set' are often used interchangeably, but Alkire (2002) warns against limiting the objective of the capabilities approach to producing opportunities. She argues that the ultimate goal of the approach is to create meaningful and fulfilled lives (Ibid.). Hence the concepts of functionings and capabilities, when coupled together, express a person's actual opportunities to lead the kind of life he or she finds meaningful or valuable (Grasso, 2007).

Kimhur (2020) contends that numerous studies have rephrased the above-mentioned definitions of capabilities and functionings in accordance with their respective research objectives. Nevertheless, the fundamental tenet of the capabilities approach is consistent: the objective of social policies should be "to expand the capabilities that people have to enjoy valuable beings and doings. They should have access to the positive resources they need in order to have these capabilities" (Alkire, 2002, p. 2). Thus, even if resources are not its core justice currency, resources are nevertheless important as they are means for achieving capabilities. For instance, Robeyns (2003a, p. 7) stresses that the capabilities approach "asks whether people are being healthy and whether the resources necessary for this capability, such as clean water, access to medical doctors, protection from infections and diseases and basic knowledge on health issues are present." In making this comment, Robeyns indicates that people's capabilities are somehow dependent upon resources.

However, access to resources alone is not enough. Kronlid (2014) argues that having access to resources is useless if the person does not have the means to transform the resources into capabilities. The concept of "conversion factors" acknowledges that people have different abilities to convert resources into capabilities or functionings. Robeyns (2005a) identifies three conversion factors: (1) personal characteristics such as health, sex, metabolism, and intelligence, (2) social characteristics such as public policies, norms, gender roles, and societal expectations, and (3) environmental characteristics such as climate, infrastructures and institutions. Knowing about the resources alone is not enough to know which capabilities or functionings a person can achieve. Because individuals differ in their ability to convert resources into capabilities or functionings, one key distinctive feature of the capabilities approach is its proposal to use 'capabilities' as a space for evaluating the justice of social programmes instead of just the distribution of resources and utility. Emphasis should be given on the ends (e.g. being able to be well nourished) instead of the means (e.g. provided food) (Kimhur, 2020).

The next section turns to the list of capabilities that were employed in this thesis. While the composition of Kronlid's list (just like any other) is debatable, I argue - and demonstrate in the following analysis – that this list is useful for analysing the (in)justice of specific adaptation interventions.

5.3 Capabilities Relevant to Climate Change Adaptation

Why is there a need to endorse a well-defined list of capabilities? At the earlier stages of the development of the capabilities approach, one major point of contention was whether it was necessary to come up with a specific list of capabilities (Robeyns, 2017). Sen does not deliberately specify which capabilities should be taken into account because the "selection of capabilities should depend on the people themselves and on the evaluative context" (Robeyns, 2005b, p. 372). This has led to several criticisms especially among advocates of the capabilities approach who believe that a framework is necessary for operationalisation purposes. Because there are no guidelines on how the selection of capabilities could be conducted, Sugden (1993) questions the practical significance of the capabilities approach in terms of analysing policies and real-world programmes. Roemer (1996) also criticises Sen because he wants to equalise capabilities yet fails to discuss clearly how this should be done. He concluded that the capabilities approach was "thus not (yet) operational" (Roemer, 1996, p. 193).

Nussbaum addressed these critiques by demonstrating how the capabilities framework can be operationalised. She proposes a list of ten central capabilities that every person should be entitled to as a matter of justice. These ten capabilities are: Life; Bodily Health, Bodily Integrity; Senses; Imagination and Thought; Emotions; Practical reason; Affiliation; Other species; Play; and Control over one's environment (Nussbaum, 2006, pp. 76-78). Nussbaum maintains that the capabilities approach should endorse a specific and well-defined list of capabilities so it can be operationalised for the analysis of social justice issues. While I disagree with Nussbaum's claim for the need to endorse *one* universal list of capabilities, I agree that a specification of a list of valuable capabilities is an essential first step to applying the capabilities approach to justice. In fact, several lists, drawing on Nussbaum's work, have already been developed and operationalised in different fields (Burchardt & Vizard, 2007; Nicholls, 2010; Robeyns, 2003c). From these lists, I looked for one that is specifically applicable for climate justice and used it as a conceptual framework for the analysis in this chapter.

The capabilities approach has seldom been used to assess the impacts of adaptation interventions. One exception, at least on a theoretical level, is Kronlid's (2014, p. 37) framework for climate change adaptation. He identifies nine capabilities that are relevant to adaptation: (1) life; (2) knowledge and appreciation of beauty; (3) work; (4) friendship; (5) self-integration; (6) coherent self-determination; (7) transcendence; (8) other species; and (9) mobility. Kronlid (2014, pp. 37 - 38) asserts that his capabilities list has been made explicit, discussed, and used effectively to guide real-world participatory processes.

This research draws on Kronlid's approach to evaluate the justice implications of the adaptation interventions carried out in Iloilo. To explore distributive justice, four items were selected from Kronlid's list and adapted to assess the most important capabilities and functionings impacted by the adaptation interventions in Iloilo. These items were: Life, Knowledge and Appreciation of Beauty, Work and Play, and Friendship. A careful review of the NGOs' adaptation programmes revealed that the contexts and their interventions require some alteration of Kronlid's concepts. Their policy documents specify that their interventions sought to enhance life (capability 1), knowledge (capability 2), work (capability 3) and friendship (capability 4). The capabilities pertaining to 'appreciation of beauty' and 'play' have been omitted since both were not the focus of the adaptation interventions in the study areas. Moreover, the interventions in the study areas did not also address people's inner peace (capability 5), choices and conscience (capability 6), spirituality (capability 7), the non-humans (capability 8) nor mobility (capability 9) and so were not included in this analysis. To assess procedural and recognitional justice, three relevant capabilities have been identified: Voice, Participation, and Empowerment (see Chapter 6). Table 5.1 summarises the author's list of capabilities vis-à-vis the existing list in the literature.

Table 5. 1**:** Author's list of capabilities vis-à-vis similar list of capabilities in the literature

Authors	Alkire and Black (1997)	Nussbaum (2000, 2006)	Kronlid (2014)	**Author (this thesis)**
Aim/ Scope of the List	Universal	Universal	Climate Change Adaptation	Adaptation Justice
List of Capabilities	1. Life 2. Knowledge and Appreciation of Beauty 3. Work and Play 4. Friendship 5. Self-integration 6. Coherent self-determination 7. Transcendence 8. Other species	1. Life 2. Bodily Health 3. Bodily integrity 4. Senses, imagination and thought 5. Emotions 6. Practical Reason 7. Affiliation 8. Other species 9. Play 10. Control over one's environment	1. Life 2. Knowledge and Appreciation of Beauty 3. Work and Play 4. Friendship 5. Self-integration 6. Coherent self-determination 7. Transcendence 8. Other species 9. Mobility	Distributive Justice: (this chapter) 1. Life 2. Knowledge 3. Work 4. Friendship Procedural and Recognitional Justice: (Chapter 6) 1. Voice 2. Participation 3. Empowerment

The first capability, life, refers to the ability to live to old age and to avoid a life that is reduced in capabilities. This capability, related to an avoidance of untimely death, is intrinsically intertwined with the ability to possess good health, have sufficient access to infrastructure services, and reside in a safe shelter (Kimhur, 2020; Tengland, 2020). People with pre-existing illnesses such as cardiovascular disease, diabetes, asthma and cancer often have less capacity to cope with extreme

events (Séguin, 2008). In contrast, when people have good physical and mental health, their adaptive capacity to climate change is enhanced (Swanson et al., 2007). This capability also covers the role that infrastructure, such as reliable electricity and water, and safe housing plays in protecting people from extreme weather events. For instance, Macalister and Subramanyam (2018, p. 139) explain that "the vulnerability of many urban communities to climate impacts is also exacerbated by poor water quality and quantity, and weak or absent institutions that fail to provide and regulate adequate water supply and sanitation". Similarly, Hanson-Easey and Hansen (2016) argue that housing is an important indicator of adaptive capacity as substandard houses provide less protection from typhoons and other natural hazards.

The second capability is 'knowledge' and it refers to the capability to access information with regards to dealing with climate change. Scholars argue that providing the right information on typhoons and other hazards will help enhance people's adaptive capacity (Brooks et al., 2005; Lindell & Perry, 2003). Anguelovski et al. (2014, p. 156) further contend that "when climate adaptation is advanced with a focus on learning, awareness and capacity building, the process will likely lead to more sustained, legitimate and comprehensive adaptation plans and policies that enhance the resilience of the most affected". Consequently, various scholars argue that the knowledge capabilities of residents, local governments and other agencies need to be improved to foster adaptation and resilience (Djalante et al., 2012; Porio, 2011). Likewise, a lack of knowledge and capacity can hamper effective coordination among local government units and undermine adaptation responses (Yoseph-Paulus, 2014).

The third capability is 'work' and it refers to people's capability to generate some form of income to provide for themselves and their families. According to Robeyns (2003c), paid work is an important contributor to material affluence, which in turn provides people the opportunity to enjoy leisure activities that are important to well-being. The IPCC (2014, p. 722) reports that extreme weather events will affect people's ability to execute excellence in their work especially in the resource-dependent sectors such as agriculture and fisheries. Employment and livelihood security are also key to building people's adaptive capacities (Handmer, 2003). Fankhauser and McDermott (2014) maintain that communities with climate-sensitive livelihoods demonstrate weaker resilience to adapt to climate impacts. In response, scholars argue that livelihood diversification is an important coping strategy (Barrett et al., 2006; Bhatta et al., 2015). For example, crop and labour diversification activities among rural Niger communities have shown to have positive effects on people's income and food security (Asfaw et al., 2018). By engaging in a diverse portfolio of activities, households can ensure food security and build resilience to climate change (Ellis, 2000).

While the conventional understanding of work refers to paid or waged labour, a diverse economies framework highlights the different types of labour (other than paid work) that people do to sustain

themselves and other people. Gibson-Graham (2008) argue that there is a variety of labour practices and economic transactions that contribute to well-being. They assert that other types of labour such as self-employment, subsistence farming, paid-in-kind labour, and unpaid labour (e.g. housework, family care and volunteering) are just as important as wage labour in enabling communities to thrive. Feminist economists have also highlighted the importance of informal and unpaid activities in securing well-being for communities (Cameron & Gibson-Graham, 2003; Folbre, 2006; Philipps, 2008). The eight-hour working day movement that arose in the 1800s demonstrates people's desire to engage in the these other forms of labour that are necessary for a good life and healthy families and communities (McKinnon, 2020). This research subscribes to this broad definition of labour , and explores people's capability to sustain different types of labour in spite of any disturbance brought about by climate change and adaptation interventions.

The fourth capability, 'friendship', refers to the "coherence between and among individuals and groups of persons, living at peace with others, neighborliness" (Kronlid, 2014, p. 37). I also draw upon the diverse economy framework, in particular, how it takes into account people's interdependence with other humans, other species and our environment (Gibson-Graham et al., 2013) and stresses the importance of building and deepening local relationships. Local relationships play a key role in building climate resilience and adaptive capacity (Adger, 2003; Rotberg, 2013). For example, Dapilah et al. (2020) demonstrate how membership in organised groups enhanced the adaptive capacity of a rural community in Ghana by facilitating livelihood diversification and the introduction of new farming techniques. Likewise, Moore and Westley (2011) contend that social networks enable the sharing of knowledge and information, which can help build adaptive capacity. Households participating in group activities were also shown to have more access to material resources than those who did not engage in these groups (Adger, 2003). It is also important to note that friendships can also entail non-market forms of transactions that are characterised by relations of care, trust, and reciprocity.

In summary, four capabilities were chosen from Kronlid's (2014) nine-item list to assess distributive justice of adaptation interventions in Iloilo. These were then adapted and defined to analyse the lived experiences of distributive (in)justice of those involved in the adaptation interventions in Iloilo. More specifically, some capabilities that were not relevant to the study areas were purposively omitted such as appreciation of beauty (capability 2) and play (capability 4). The questionnaires and interview questions were designed in accordance with these four definitions to capture data about: whether people are able to secure the necessities of life and are being well-nourished and kept safe (capability 1); whether they are being informed on climate change (capability 2); whether they are being sustained financially by paid work and other livelihood sources (capability 3); and whether they are able to cultivate and maintain relationships with people (capability 4).

5.4 Climate Change Adaptation Interventions in Iloilo

This section analyses the adaptation interventions implemented in the two study sites vis-à-vis the adapted version of Kronlid's (2014) capabilities framework outlined in the previous section. The first case study, the IFCP, was funded by the Japan International Cooperation Agency and was implemented locally by the Iloilo City government. The second case study features the adaptation interventions implemented by three NGOs in Tambaliza namely Sacred Aid UK, British4Environment; and First Response Ireland. It describes how these adaptation interventions sought to augment each of the four capabilities: life/health, knowledge, work, and friendship.

The IFCP involved the resettlement of households. The Resettlement Action Plan (RAP) acknowledges the detrimental impacts of this intervention, including unavoidable physical dislocation and the potential loss of assets and livelihoods (DPWH, 2005). It also identifies several strategies that were to be undertaken by the implementing agencies to ensure these impacts were mitigated. To compensate for the loss of access to social services, the RAP states that the Department of Public Works and Highways (DPWH) and the local government of Jaro would install basic social services and facilities such as electricity, water, school, health centre and a day-care centre (DPWH, 2005, p. 25) (**life**). The RAP also asserts that there would be several social preparation efforts, such as information-education sessions, training seminars and workshops, and other capacity building (**knowledge**). These activities sought to "enhance the capabilities of the communities, allay their apprehensions and prepare them for the eventuality of their relocation" (DPWH, 2005, p. 31). To address the loss of livelihood and income, the RAP states that project-affected households would be provided with employment opportunities during the construction phase of the associated flood control project. Credit assistance was also to be provided to some families so that they could start new their business enterprises (**work**). Finally, to cushion the loss of community networks, the RAP attests that significant effort was to be spent to ensure the restoration of community organisations and networks (**friendship**). The government also supported a number of community organising activities, such as the formation of peoples' organisation and cooperatives (DPWH, 2005, p. 25). In summary, these strategies were in line with one of the core objectives of the Iloilo Flood Control Project: "improvement of the social and economic status of vulnerable groups that includes female-headed households, elderly and PWD…" (DPWH, 2005, p. 4).

The NGOs in Tambaliza also sought to re-build people's different capabilities after the onslaught of typhoon Haiyan. A review of their project documents revealed that they implemented shelter interventions, which sought to help the residents re-construct their damaged houses (**life**). For instance, Sacred Aid UK claimed that the houses they constructed "are made of strong materials

that can withstand strong winds" (Sacred Aid UK, 2016 p. 11). They also stated that they provided residents with access to safe water and sanitation infrastructures. To build people's knowledge of climate change **(knowledge)**, all three NGOs said that they engaged their communities in capacity building activities. For example, Sacred Aid UK and First Response Ireland claimed that they helped local communities prepare and respond to disaster scenarios through improving people's access to weather information (First Response Ireland, 2013). Aside from teaching about environmental conservation, British4Environment asserted that they also developed people's leadership skills so they can properly run and manage their own small groups (British4Environment, 2012). The three NGOs also stated that they attempted to restore people's livelihoods by implementing income-generating activities **(work)**. British4Environment and First Response Ireland contend that they initiated mangrove restoration projects and worked alongside the residents to enforce marine protected areas (MPA). All three NGOs also stressed that they focused on diversifying people's livelihoods by implementing alternative sources of income such as food processing, animal raising, gardening, etc. They also mentioned that they had initiated saving schemes to help local communities save money for emergency situations. Finally, all three NGOs in Tambaliza claimed that they had engaged the residents by building community-based formations and self-help groups that not only encouraged people's participation, but also helped establish networks of community support and solidarity (Sacred Aid UK, 2016) **(friendship)**. A summary of the basic capabilities and the corresponding NGO objectives are provided in Table 5.2.

Table 5. 2: Basic Capabilities and Climate Adaptation Interventions in Iloilo

Basic Capabilities	Case Study 1: San Isidro	Case Study 2: Tambaliza		
	Resettlement Project	**Sacred Aid UK**	**British4Environment**	**First Response Ireland**
Life	Provision of basic social services	Shelter construction, Access to water and sanitation	Shelter construction	Shelter construction
Knowledge	Social preparation activities	Formation of DRR management councils, DRR plans, training, and early warning	Training on environmental conservation, leadership, and facilitation	Disaster simulation and training
Work	Provision of new employment opportunities and credit assistance	Food processing, Aquaculture, Seaweed farming, Community Savings	Mangrove rehabilitation; Marine Protection; Community Savings	Animal raising, Food processing, Gardening, Community Savings
Friendship	Restoration of community organisations and networks	Community-based formations	Community-based formations	Community-based formations

Source: Author's fieldwork

The next four sections will focus on each of the four capabilities separately. Empirical evidence from both the household surveys and interviews is analysed to determine whether the objectives of the adaptation interventions were achieved (or not) in terms of augmenting people's capabilities and functionings.

5.5 Capability 1: Life

The first capability – life − is operationalised in terms of two components − adequacy of basic services and housing conditions – as these are instrumental in enabling an individual to live well to old age. Access to basic services enables people to become healthy and self-sufficient, and can therefore help mitigate the impacts of disasters on vulnerable people (Ebi & Semenza, 2008; Hess et al., 2012). Shelter is another important determinant of people's well-being. Features of substandard housing such as lack of safe drinking water, ineffective waste disposal, and inadequate food storage have long been acknowledged to adversely influence health and well-being by contributing to the spread of infections (Marsh, 1982) and chronic illnesses (Hyndman, 1998).

Adequacy of basic services was assessed through surveys and interviews by asking respondents about their access to the following: electricity, water, toilet, medicines, and food. Respondents were asked to what extent they were satisfied or dissatisfied with their access to these different services. The condition of housing was assessed by asking respondents what the outer walls and roof of their houses are made of. The survey data was complemented by an analysis of recurring themes and quotes drawn from the interviews with key informants.

5.5.1. Adequacy of Basic Services

In San Isidro, Table 5.3 illustrates that the survey respondents who were relocated due to the IFCP reported improved access to basic services. They claim that there is significant improvement in their access to electricity (32%), water (37%), and toilets (27%), and a slight improvement in their access to medicines (16%) and food (3%). While previous studies demonstrate that resettlement causes a wide range of deprivation, these are also some of its commonly reported benefits, especially in terms of housing and access to basic services (Barnett & O'Neill, 2012; Cernea, 1997; Wilmsen, 2016).

Table 5. 3: Satisfaction with Access to Basic Services in Total (San Isidro)

Basic Services	Total (N = 200)		
	BEFORE	AFTER	% increase
Access to Electricity	2.49	**3.29****	32%
Access to Water	2.26	**3.10****	37%
Access to Toilet	2.68	**3.40****	27%
Access to Medicines	2.68	**3.13**	16%
Access to Food	1.92	**1.97**	3%

*p<0.05;   **p<0.001

Question: *On a scale of 1 to 5, how would you rate the following services?*

Source: Author's survey (2018)

However, disaggregating the survey data by the NGOs responsible for providing the new housing reveals more nuanced results. Although many respondents from each of the NGO housing projects reported significant improvements, those from Dutch Hospitality reported higher levels of satisfaction with the quality of basic services they received compared to those from other NGOs (Table 5.4). More specifically, they reported significantly higher levels of improvement in their access to electricity (66%), water (91%), toilet (72%) and medicines (63%) compared to the resettlers from the other NGOs. This means that the residents from Dutch Hospitality perceived their access to infrastructure services to be significantly better compared to the residents of the other housing sites.

Table 5. 4: Satisfaction with Access to Basic Services per NGO (San Isidro)

Access to…	Dutch Hospitality (N = 46)			Concern Italy (N = 61)			Houses4Humanity (N = 60)			Care Foundation (N = 33)		
	Before	After	% inc	Before	After	% inc	Before	After	% inc	Before	After	% inc
Electricity	2.84	4.71*	66	2.16	2.77**	28	2.42	2.71	12	2.53	2.76	9
Water	2.38	4.56**	91	2.13	2.51**	18	2.03	2.52**	24	2.35	2.57	10
Toilet	2.76	4.75**	72	2.67	2.82	6	2.42	2.90*	20	2.82	2.98*	6
Medicines	2.25	3.91	63	2.03	1.93	-5	1.90	1.97	4	2.51	2.55	2
Food	1.96	2.00	2	1.89	1.90	1	1.90	1.97	4	1.90	2.04	7

*p<0.05;   **p<0.001

Question: *On a scale of 1 (Very Inadequate) to 5 (Very Adequate), how would you rate the following services?*

Source: Author's survey (2018)

The interviews corroborated these survey findings. All resettlers from Dutch Hospitality (n=3) claim access to services improved with resettlement: "It seems like life is better here in San Isidro.

We feel like we are living in an exclusive private subdivision" (Female, personal interview, May 25, 2018). When asked to identify the negative impacts of their resettlement, Dutch Hospitality residents cited things such as narrow roads, illegally parked vehicles, and lack of proper signages and lighting. The residents that were provided housing by the other three NGOs identified more negative impacts. All respondents from Concern Italy (n=3), Houses4Humanity (n=3) and Care Foundation (n=4) cited lack of clean water as one of their biggest concerns. A respondent from Care Foundation said: "The water in our area is very difficult. We are not connected to the National Waterworks and Sewerage System, so we are forced to buy drinking water at Php 2 per container daily." (Female, personal interview, May 15, 2018).

All respondents from Concern Italy, together with two respondents from Houses4Humanity and two respondents from Care Foundation, reported clogged sewerage systems because of poor drainage as another of their community's concerns. They noted that flooding continued to be a problem in the resettlement sites − the very issue that had been used to justify their resettlement in the first place. The residents explained that there were too many households connected to the drainage pipes, which over-taxed the system and led to flooding during the rainy season. One respondent from Concern Italy complained: "if it rains continuously for 2 hours, our area gets flooded. Flood waters still enter our house. It is not as high as before, but we are usually evacuated to the nearby school just to be sure" (Female, personal interview, May 25, 2018). On the other hand, none of the respondents from Dutch Hospitality experienced flooding in their respective houses. They claimed that the sewerage systems in their own area worked perfectly well even during the rainy season.

In Tambaliza, results also differed between groups. Table 5.5 explores the adequacy of the infrastructure services provided in the different sitios before and after the adaptation interventions of the NGOs. It demonstrates that respondents from Proper and Guinmisahan reported significantly higher levels of improvement in their access to electricity (53% and 55% respectively) compared to other sitios. The respondents from Proper, Banban and Guinmisahan also reported higher levels of improvement in their access to medicines (43%, 60% and 55% respectively) compared to others. In contrast, respondents from Botlog and Punting recorded the lowest levels of improvement in access to water services (13%). These numbers indicate that the quality of infrastructure services significantly differed, with respondents from Proper, Banban and Guinmisahan experiencing better infrastructure services compared to those from Botlog and Punting.

Table 5. 5: Adequacy of Basic Services per Sitio (Tambaliza)

	Proper (N=35)			Banban (N = 10)			Guinmisahan (N = 10)			Punting (N = 15)		
	Before	After	% Increase	Before	After	% Increase	Before	After	% Increase	Before	After	% Increase
Access to Electricity	1.35	2.07	53%**	1.50	2.33	55%**	1.30	1.90	46%*	1.20	1.63	35%*
Access to Water	2.00	2.71	36%*	2.00	2.90	72%***	2.15	3.00	40%*	1.65	1.87	13%
Access to Medicines	1.72	2.46	43%*	1.75	2.80	60%**	1.68	2.60	55%**	1.53	2.07	35%*

	Botlog (N = 8)			Pasil (N = 12)			Batos (N = 10)		
	Before	After	% Increase	Before	After	% Increase	Before	After	% Increase
Access to Electricity	1.23	1.50	22%*	1.32	1.90	44%*	1.30	1.90	46%*
Access to Water	1.55	1.75	13%	1.85	2.58	49%*	1.94	3.00	55%**
Access to Medicines	1.42	1.50	6%	1.65	2.38	44%*	1.55	1.80	16%

* p < 0.05;   ** p < 0.001
Question: *On a scale of 1 to 3, how would you rate your access to the following?*
Source: Author's survey (2018)

The thematic analysis of the interview responses supports the survey findings. The key themes emerging from the interviews were "inadequate water", "unreliable electricity" and "lack of medicines." All the respondents from Botlog (n=3) talked about being connected to the water systems provided to the rest of the sitio. One respondent complained: "We do not have a source of

drinking water here. We only have this water well; but the water here is contaminated, cloudy, and not safe for drinking" (Female, personal interview, June 14, 2018). She then explained that she is forced to undertake the arduous task of manually transporting water via a small boat from sitio Proper daily.

In terms of electricity, all respondents from Punting (n=2) and two from Botlog talked about experiencing unreliable electrical connections that often failed during the night. One respondent from Punting shared: "There is only one generator for electricity and it is located in sitio Proper. It only caters to houses that are near that sitio" (Male, personal interview, June 20, 2018). A respondent from Botlog narrated that one NGO already provided them with solar panels but that these did not last through the night. She remarked: "my children find it difficult to study at night. Their grades are suffering" (Female, personal interview, June 14, 2018). Interestingly, none of the respondents from Proper (n=3), Guinmisahan (n=2) and Banban (n=3) complained about water or electricity during the interviews suggesting that they have been able to adequately access and benefit from such infrastructure services. Finally, three respondents from Botlog, two from Batos (n=3), and one from Punting also complained about inadequate access to medicines during the interviews. A Botlog respondent said: "The medicines and the first aid kit are all located in the health centre [sitio Proper]. In case of an emergency, we still have to be transported by boat just to get some medical attention" (Female, personal interview, June 15, 2018). The survey and interview findings indicate that there is an uneven distribution of infrastructure in Tambaliza: sitios Proper, Guinmisahan, and Banban have the most developed infrastructure, while sitios Botlog and Punting have the least.

5.5.2. Housing Conditions

The analysis of the survey data in San Isidro revealed that those household resettled by Dutch Hospitality were able to access better quality housing compared to those resettled by other NGOs. Table 5.6 demonstrates the increasing disparity among the residents in terms of the housing material of their houses. Before resettlement, there was already a small yet significant difference among the respondents' outer walls (χ^2=27.7). A third of the residents from Dutch Hospitality (27.3%) lived in houses made up of concrete walls. On the other hand, more than half of the respondents from Concern Italy (73.8%), Houses4Humanity (67.6%) and Care Foundation (63.3%) lived in houses made of light materials. This means that even before resettlement, the residents from Dutch Hospitality already resided in high quality housing compared to the residents from the other NGOs. After the relocation, the reported difference among the respondents' outer walls almost quadrupled (χ^2=103.4). This is because, while almost everyone in Dutch Hospitality (94.5%) lived in houses made of concrete materials, considerably fewer respondents from Concern Italy (32.8%), Houses4Humanity (71.0%), and Care Foundation (42.9%) did so. This finding demonstrates how

being resettled increased disparity in terms of housing quality among the respondents: those from Dutch Hospitality reported that they currently reside in significantly better-quality houses made of concrete while the rest reside in houses made of light materials. Opdyke et al. (2016) states that concrete is a good building material because it possesses the durability and strength to withstand typhoons and other extreme weather events. In contrast, houses made of light materials in the Philippines often get easily damaged even by low-intensity typhoons (Dalisay & De Guzman, 2016).

Table 5. 6: Housing Condition of Respondents Before and After Resettlement (San Isidro)

Before Resettlement

	Total (N = 200)	Dutch Hosp (N=46)	Concern (N=61)	Houses4 Human (N=60)	Care Fdn. (N=33)	χ²
Outer Walls						
Makeshift	0.5%	0%	1.6%	0%	0%	27.7**
Light[a]	60.7%	40%	73.8%	67.7%	63.3%	
Wood	17.3%	18.2%	14.8%	19.4%	18.4%	
Semi-concrete[b]	9.7%	14.5%	4.9%	6.5%	12.2%	
Concrete	11.7%	27.3%	4.9%	6.5%	6.1%	
Roof						
Makeshift	0.5%	0%	1.6%	0%	0%	9.99
Light[c]	17.9%	12.7%	18%	22.6%	20.4%	
Concrete	16.3%	14.5%	16.4%	19.4%	16.3%	
Galv. Iron	64.3%	72.7%	62.3%	58.1%	61.2%	

After Resettlement

	Total (N = 200)	Dutch Hosp (N=46)	Concern (N=61)	Houses 4Humn (N=60)	Care Fdn. (N=33)	χ²
Outer Walls						
Makeshift	0%	0%	0%	0%	0%	103.4**
Light[a]	10.7%	5.5%	4.9%	0%	30.6%	
Wood	6.1%	0%	4.9%	3.2%	16.3%	
Semi-concrete[b]	24.5%	0%	57.4%	25.8%	10.2%	
Concrete	58.7%	94.5%	32.8%	71%	42.9%	
Roof						
Makeshift	0%	0%	0%	0%	0%	18.2
Light[c]	2%	0%	0%	0%	8.2%	
Concrete	20.4%	21.8%	21.3%	22.6%	18.3%	
Galv. Iron	76.5%	76.4%	78.7%	77.4%	73.5%	

*p<0.05;   **p<0.001
[a] Includes cogon, nipa or aluminum
[b] Includes half concrete and half wood
[c] Includes cogon, nipa, or wood
Question: *What is the construction material of your outer walls in your house? The roof?*
Source: Author's survey (2018)

Interviews also confirmed that those resettled by Dutch Hospitality received better quality housing than those resettled by the other NGOs. The two recurring themes from the interviews were the "substandard housing" provided by some of the NGOs, in particular, their being "unable to withstand typhoons". Two respondents from Concern Italy and Houses4Humanity, together with all the respondents from Care Foundation, complained their houses were substandard and fragile. A respondent from Houses4Humanity said: "there are several cracks on the walls, the door is not of good quality, and we need to be careful in sitting on the toilet bowl because it can collapse" (Female, personal interview, May 13, 2018). While such issues are a daily nuisance for many households, many interviewees were more concerned about the ability of their new houses to withstand extreme weather events. All the respondents not resettled by Dutch Hospitality were worried that their houses were not sturdy enough to withstand a strong typhoon or earthquake. For example, a respondent from Concern Italy said: "Before a typhoon comes, we usually start to collect big stones from the streets and then surround our house with them. They serve as barriers so that water will not go inside our house. We have no choice; the drainage system in our house has not been working properly" (Female, personal communication, May 25, 2018). Other respondents talked about having to rely on their relatives working abroad for money to retrofit their house; for example, fix the ceilings, replace cracked windows, strengthen the roof, and the like. On closer investigation it was discovered that the housing materials used for the prefabricated housing of the three NGOs were typical of social housing programmes across the Philippines − hollow blocks, metal trusses, and galvanised iron sheets − and were not typhoon resistant (Carrasco et al., 2016; Taruc Manalang et al., 2002). Meanwhile, the housing units of Dutch Hospitality were made from a combination of Interlocking Compressed Earth Blocks (ICEB) and bamboo, both are proven resilient to typhoons and earthquakes[4] (Salzer et al., 2016).

In Tambaliza, the survey findings indicate that there are no statistically significant differences among the residents living in different sitios in terms of their housing condition before and after the adaptation interventions of the NGOs. Most of the respondents, regardless of the sitio, resided in houses with outer walls made of light materials such as cogon, nipa, or aluminum. Their roofs were mostly made of galvanised iron (χ^2=12.97). During the interviews, almost everyone (15 out of 17) admitted that their houses were not sturdy enough to withstand a super-typhoon like Haiyan. Only two respondents from Proper talked about being able to afford retrofitting their houses to make it more typhoon-proof. Two respondents from Botlog, one from Guinmisahan and another one from Punting, remarked *"bahala na"*, a fatalistic phrase which translates to 'come what may'. The rest of the respondents talked about praying hard and claimed that they are used to typhoons anyway.

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[4] ICEB are made of compacted soil and cement, making it strong and durable, while the bamboo can absorb shocks and withstand strong winds (Salzer et al., 2016)

In summary, the literature on climate change indicates that the quality of utilities infrastructure affects the severity of impacts of extreme weather events (Smit et al., 2003) and a lack of access to basic services such as energy and sanitation decreases people's adaptive capacity (Herrera et al., 2018). Hanson-Easey and Hansen (2016) argue that housing is an important indicator of adaptive capacity to climate change as substandard houses provide less protection from typhoons and other natural hazards. Analysis of survey and interview data illustrates that the quality of basic services provided to households was unequal in both study sites. Households that were better off compared to others also reported a higher quality of basic services such as electricity, water, and medicines. Moreover, while the housing condition did not differ significantly in Tambaliza, there was a considerable difference in responses in San Isidro. Households resettled by Dutch Hospitality received the higher quality housing than those resettled by the three other NGOs. These uneven outcomes indicate that the adaptation interventions enhance the capabilities of a very limited group of people.

5.6 Capability 2: Knowledge

In this study, knowledge is assessed through people's access to relevant information and training with regards to dealing with the risks associated with climate change (Kronlid, 2014). Information on climate change such as early warning systems have shown to help people prepare against potential impacts of disasters (Houston et al., 2015; Lindell & Perry, 2003). The survey and interview questions explored whether the people were provided with accurate, sufficient, and useful information to help them prepare and adapt to climate change.

In San Isidro, there is a statistically significant difference among the respondents in terms of their perception on the usefulness and relevance of the information provided to them (χ^2=15.20). More specifically, 33% of respondents from Dutch Hospitality strongly agree that the information provided to them was useful and relevant. In contrast, only 22% of Concern Italy, 17% of Houses4Humanity and 21% of Care Foundation strongly agree with this statement. This means that the residents from Dutch Hospitality are able to access relevant and useful information more than the residents from the other NGOs. The survey findings were supported by the qualitative analysis of the interview responses. A recurring theme from the interviews with the residents of Dutch Hospitality was "more than disaster information." They shared that the type of information provided to them was not limited to disasters and climate change. They claimed to be exposed to a diverse range of topics, including housing design, housing legislations, materials procurement, accounting, etc. All respondents also shared that the training sessions were mandatory, but reiterated that they did not mind because they found them useful. One respondent said: "The classes and workshops did not only prepare us for typhoons. They also helped equip us with real-life practical knowledge

that was very useful when we were setting up our own houses" (Female, personal interview, May 25, 2018).

On the other hand, the recurring theme from the interviews with the residents resettled by the other NGOs was "limited information". Two respondents from Concern Italy and one from Houses4Humanity said that the information-education sessions that they have attended were not very useful. They claimed that the workshops usually focused on technical terms about climate change that did not seem relevant to them. One respondent remarked: "They taught us about risk and vulnerability --- words that felt meaningless to us as they cannot even translate it to our local language!" (Female, Concern Italy, personal interview, May 26, 2018). Two respondents from Care Foundation admitted that they only attended the workshops for the free food and drinks. When asked what was the most important thing they learned about climate change, they said that they can barely recall anything.

In Tambaliza, there was no significant difference in terms of the residents' perceptions of the accuracy, sufficiency, and usefulness of the information provided to them. This means that the respondents across the different sitios felt that they have equal access to relevant and useful information about climate change. The key themes emerging from the interviews were "bias for the vulnerable" and "useful trainings." All of the respondents from Botlog and Punting talked about being given a special attention on disaster trainings and workshops. This was supported by the interviews with local officials (n=3). One official shared: "we have a preference for Botlog. We picked them because their location is very risky, and they still need to cross the sea to go to the evacuation centre. They are really at risk to landslides and storm surge… This is why the barangay really prioritises them" (Female, personal interview, June 12, 2018). Moreover, fifteen of the twenty interviewees shared that they found the trainings and workshops useful in preparing for typhoons. Their typical responses were "because of the trainings, we are now well-aware where the evacuation centre is in this barangay. People now know what to do and where to go… For now, I can say that Tambaliza is more resilient to typhoons and storm surges" (Male, Banban, personal interview, June 10, 2018).

In summary, scholars argue that providing the right information on typhoons and other climate-related hazards will help enhance people's adaptive capacity (Brooks et al., 2005; Lindell & Perry, 2003). Below et al. (2012) further maintain that investments in disaster information and education are critical in improving people's adaptive capacities to climate change. Surveys and interviews asked whether people, regardless of their NGO classification or locale, were provided with relevant and adequate information and training on preparing for typhoons. Surveys and interviews showed that in San Isidro, there were significant differences in people's perceptions of the usefulness of the training sessions. The knowledge and disaster preparedness of the residents of Dutch Housing was more comprehensive than those resettled by the other NGOs. On the other hand, majority of

respondents from Tambaliza reported benefitting from the training and information provided to them with little evidence of some groups being provided with better training and information than other.

5.7 Capability 3: Work

Paid work was assessed through the survey by asking the respondents their average monthly income. The survey also assessed people's spending power by providing them with a range of statements which asked whether they agree, disagree, or were undecided about a number of statements about their food and other household expenses. Meanwhile, the interviews probed for diverse economic activities (based on the diverse economies framework) that people undertook to sustain themselves and other people. Their responses were coded and analysed by NGO housing type (San Isidro) and sitio (Tambaliza).

In San Isidro, all interviewees reported that they did not receive any financial compensation and had to depend on their own savings to finance their resettlement. Inequality was high between the households before resettlement and this was exacerbated following their move. The average incomes of all households before and after resettlement are shown in Table 5.7. After resettlement, the average monthly income of the residents of Dutch Hospitality increased at a faster rate than the other households. Table 5.7 indicates that Dutch Hospitality has the highest average percentage increase in income (45%), compared to the residents of Concern Italy (31%), Houses4Humanity (29%), and Care Foundation (25%). This shows that residents from Dutch Hospitality have been more capable of generating income from various sources compared to the residents from the other NGOs. This disparity in terms of people's ability to source income has translated to significant differences in experiences of food security and household expenditures. In terms of food insecurity, fewer respondents from Dutch Hospitality (-35%) and Houses4Humanity (-60%) reported not having enough to feed their household after resettlement, while more respondents from Care Foundation (17%) felt that they are not able to feed their households. In terms of household expenditures, while the percentage of respondents who reported earning less than what they spend decreased in Concern Italy (-16%), Houses4Humanity (-57%) and Care Foundation (-23%) after resettlement, these numbers are still significantly higher than the residents of Dutch Hospitality. In other words, very few respondents from Dutch Hospitality perceived their incomes to be lower than their expenses after being resettled. This means that the residents from other NGOs spend more despite having less income compared to the residents from Dutch Hospitality.

The interviews revealed that the majority of the residents from Dutch Hospitality were involved in diverse economic activities other than formal employment; most of the other respondents were unable to identify such diverse income-generating activities. While all of the Dutch Hospitality

interviewees were waged labourers, they also talked about "being able to start their own business in the resettlement site." For example, one respondent, whose husband is a car mechanic, started a car audio installation service at the front of her house called "GREEN BOX Sound System" (Figure 5.1). Another shared that she extended her house so that she can start selling a variety of food and other goods while at the same time playing with her own kids at home. A third respondent opened her own *ukay-ukay*, a store selling pre-loved apparels. The three respondents partly attributed the funding of their home-based businesses to the community savings program set up by Dutch Hospitality. These self-owned enterprises, operating inside their own homes, provided the residents of Dutch Hospitality with extra income, on top of the wage they earn as labourers.

Figure 5. 1: Car audio installation service in a Dutch Hospitality resident's house

Source: Author

Table 5. 7: Average income of households supported by the NGOs (Before and After Resettlement)

	(a) Avg. Monthly Income per HH (PHP)		% increase	(b) % Not Enough to Feed HH		% increase	(c) % Earn Less than Spending		% increase
	Before	After		Before	After		Before	After	
Dutch Hosp.	11,662.64	16,914.90	45%*	5.5%	3.6%	-35%	5.5%	7.3%	33%
Concern Italy	6,091.38	8,021.43	31%*	11.5%	11.5%	0%	41%	34.4%	-16%*
Houses4 Human	7,245.81	9,346.65	29%*	16.1%	6.5%	-60%	45.2%	19.4%	-57%***
Care Fdn.	9,023.40	11,293.74	25%***	12.2%	14.3%	17%	26.5%	20.4%	-23%*

* $p < 0.05$;   ** $p < 0.001$

Question: (a) How much approximately is the average monthly income of your household? (b) Did this household have enough to eat before resettlement? After resettlement? (c) Which of the following statements best describe your household income & expenses AFTER you were relocated?
Source: Author's survey (2018)

The interviewees were also asked whether they were involved in any community savings programme that helped them save and manage their finances. Again, only the residents of Dutch Hospitality were able to access such support. Only one interviewee from Concern Italy and one

from Care Foundation talked about being able to engage in diverse income-generating activities. Both said that monetary remittances from relatives working abroad helped them start their own home-based enterprises. The rest of the interviewees were either unemployed or were waged labourers at the nearby shopping mall. Two respondents from Houses4Humanity and one from Care Foundation also talked about relying on livelihood programs from the government. One from Houses4Humanity described an employment program − a local bakery meant to employ local residents – saying, "although the project was already approved by the national government on paper and funding has been released, it was never really implemented and we never benefited from it" (Male, personal interview, May 13, 2018).

In Tambaliza, there are also significant differences in monthly income among the residents. Based on the survey, the residents of Proper, Banban and Guinmisahan reported the highest amount of improvement in income (35%, 30%, and 34% respectively) after the adaptation interventions of the NGOs (Table 5.8). This means that they are able to generate more income compared to the residents from the other sitios. When asked whether they had enough to eat, the respondents of Botlog (+42%) and Punting (+25%) reported the highest percentage of increase in inability to feed their households after the adaptation interventions. The respondents from Botlog (+66%) and Punting (+30%) also reported the highest percentages of increase in the number of households who earn less than what they spend. The residents of Botlog and Punting earn an average monthly income Php 1,662.50 and Php 2,200.00 respectively after the adaptation interventions of the NGOs, lower compared to the income of the residents in other sitios. These findings clearly demonstrate that while the adaptation interventions of the NGOs in Tambaliza have helped the residents of Proper, Banban and Guinmisahan augment their monthly incomes, this does not apply to the residents of Botlog and Punting. The residents in the two latter sitios also reported higher food insecurity and higher monthly expenditure compared to other sitios.

Table 5. 8: Different measures of income per sitio (Tambaliza)

	Proper (N=35)			Banban (N=10)			Guinmisahan (N=10)			Punting (N=15)		
	Before	After	% Inc.	Before	After	% Inc.	Before	After	% Inc.	Before	After	% Inc.
Average Monthly Income	6500.00	8768.57	35%*	4200.00	5420.00	30%*	3200.00	4290.00	34%*	1850.00	2200.00	18%
% Not Enough to Feed	8%	5%	-38%*	10%	8%	-20%*	13.5%	10%	-26%*	20%	25%	25%*
% Earn Less than Spending	20%	18%	-10%	15%	13%	-13%	20%	17%	-15%	22%	31%	30%*

	Botlog (N = 8)			Pasil (N = 12)			Batos (N = 10)		
	Before	After	% Inc.	Before	After	% Inc.	Before	After	% Inc.
Average Monthly Income	1467.50	1662.50	13%	4000.00	4875.00	22%*	2250.00	2900.00	28%*
% Not Enough to Feed	17.5%	25%	42%*	16%	15%	-6%	17%	20%	17%
% Earn Less than Spending	30%	50%	66%**	22%	20%	-9%	25%	30%	20%

* p < 0.05; ** p < 0.001

Question: (a) How much approximately is the average monthly income of your household? (b) Did this household have enough to eat before the NGO interventions? After interventions? (c) Which of the following statements best describe your household income & expenses before and after the NGO interventions?
Source: Author's survey (2018)

However, unlike the interview findings in San Isidro, one predominant theme in the interviews with the Tambaliza residents was "strong support from neighbours" which was reported to be present in the community even before the adaptation interventions of the NGOs. The respondents from the marginalised sitios shared that they have ever since been receiving an incredible amount of help from the community and that this has enabled them to earn extra income. For example, two respondents from Botlog and two from Punting mentioned that they have regularly received gifts in-kind, such as fish, vegetables, and fruits from their relatives and friends in other sitios. One respondent from Punting shared: "My friend in Banban drops by once a month to share his vegetable harvest with us. My wife cooks it, and we share some of the food with my friend" (Male, personal interview, June 21, 2018). Two respondents from Batos talked about engaging in *gabut,* the practice of helping other fishermen pick their fish out from the net in exchange for one-third of the catch, since they were younger. One respondent from Batos talked about receiving gifts of noodles, rice, and other groceries during his birthdays from a friend who owned a convenience store in Proper. Finally, two respondents from Botlog recalled that in the aftermath of Typhoon Haiyan, a teacher in Banban solicited clothes and toiletries from his colleagues and students and donated these to the families in Botlog. These diverse economic arrangements that were present from the outset helped meet the daily needs of the community, especially those who are economically marginalised compared to others.

In summary, this section has reiterated the importance of both financial and non-financial assets, livelihood security and diverse economic activities in helping people rebuild their lives after typhoons (Iuchi & Maly, 2016; Swanson et al., 2007). It has also demonstrated that the implementation of adaptation interventions has resulted in uneven levels of income and support for income-generating activities. In San Isidro, resettlement increased the income disparity among the residents as only some groups were able to access resources and the help they needed to start their own businesses. The story is a bit different in Tambaliza, however. The interviews in Tambaliza reveal that there is nevertheless room for relationships of giving, care, and reciprocity, which can be drawn upon to augment the incomes of marginalised households.

5.8 Capability 4: Friendships

In this study, friendship is assessed through surveys and qualitative interviews that explore the respondents' support networks and personal relationships within their respective communities. The surveys asked the respondents who they think they can rely on for help to deal with flooding and other climate-related disasters. The interviews were meant to supplement the survey findings by asking the respondents to describe their relationship with their neighbours. The survey responses are provided in Figure 5.2 (San Isidro) and Figure 5.4 (Tambaliza).

Figure 5. 2: Perceived Social Support (San Isidro)
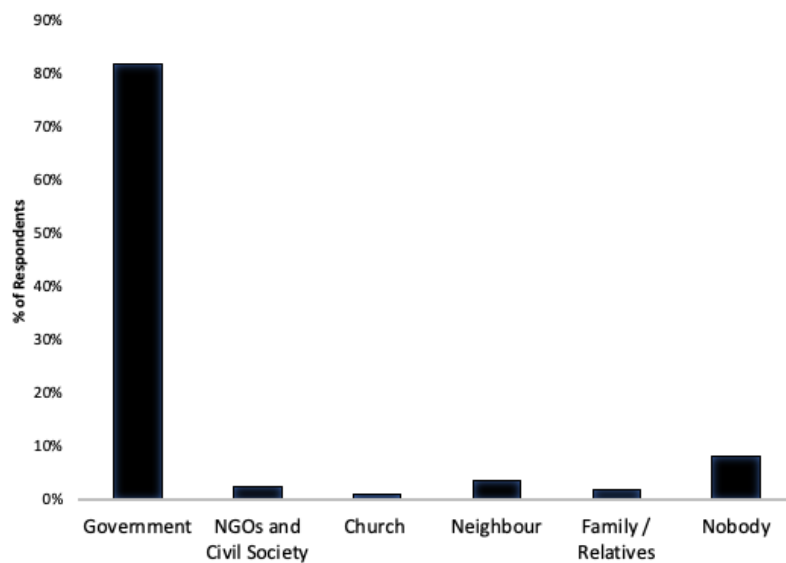
Question: Who can you rely upon the most to help you deal with floods and other climate-related disasters?
Source: Author's survey (2018)

In San Isidro, there were two key themes that became apparent from the qualitative analysis: "fear" and "isolation." All Dutch Hospitality respondents talked about being afraid of their neighbours. This feeling is driven by the stories of other Dutch Hospitality interviewees who personally experienced theft or verbal altercations with the residents of other NGOs. One official said: "When the residents of other NGOs pass through their area especially at night, they are often very loud and drunk. Some of their neighbours were also known to be involved in drug raids and street violence, so they fear for their own safety" (Female, personal interview, May 13, 2018). Another resident shared her experience of being robbed of a few of her valuables. She had no idea who took them but suspected that it may be one of her neighbours: "We've had instances of our clothing, jalousie windows[5], and water pipes being stolen. In our old house, we can just hang our washed clothes outside and not worry about them being stolen. We have to be extra careful here" (Female, personal interview, May 25, 2018). A different interviewee opened up that she had been living in fear because of the drug raids that she has experienced: "…back then [before resettlement], I knew my neighbours well and I am pretty sure that nobody did drugs. Here, there were two drug raids just last month and I feel afraid especially for my kids" (Female, personal communication, May 11, 2018).

The second theme – isolation – emerged from the responses of the residents of the other NGOs. Two respondents each from Concern Italy and Houses4Humanity shared that they have noticed that the residents from Dutch Hospitality were increasingly isolating themselves from the other resettled

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[5] A jalousie type window frame has horizontal slats wherein its opening and closing is operated by a crank. This window is popular in a tropical country like the Philippines because it provides unobstructed air ventilation.

households. They said that they personally know a few of their neighbours from the Dutch Hospitality resettlement area who expressed discriminatory attitudes about the people from other areas, describing others as "international citizens" (people of different origins who they neither have met nor interacted with before) and their own compound as a "university" (i.e. advanced) and the other compounds as "secondary schools" (backward, undeveloped). Two interviewees from Care Foundation look up to the houses of Dutch Hospitality as superior, referring to them as their "dream houses."

Eventually, this social disjuncture was reinforced by a physical separation of the four resettlement groups. The residents of Dutch Hospitality raised funds to construct a wall around their area. Entry to the community is via a gate that is locked from 10pm to 6am (Figure 5.3). Only the residents of Dutch Hospitality have keys to these gates. The NGO, itself, did not support this construction of the wall. One official said: "I initially dissuaded them from putting up the gate because this is a resettlement site, not a private subdivision. But I could not stop them because they were really persistent and determined" (Female, personal interview, May 13, 2018). By creating this gate, social interactions between the four groups of resettlers were reduced, further reducing social interactions and eroding trust.

Figure 5. 3: The gate that was put up by the Dutch Hospitality residents for their "safety"

Source: Author's photo

In Tambaliza, people's responses on who they rely upon for help are more diverse than at San Isidro. Most of the respondents claim that they either turn to the local government (33%), to their neighbours (23%), or to the NGOs (20%) for help during disasters. A smaller number of people reported that they rely upon their own family members (14%) or the church (10%). It is interesting to note that no respondents stated that they had nobody to turn to during disasters.

Figure 5. 4: Perceived Social Support (Tambaliza)
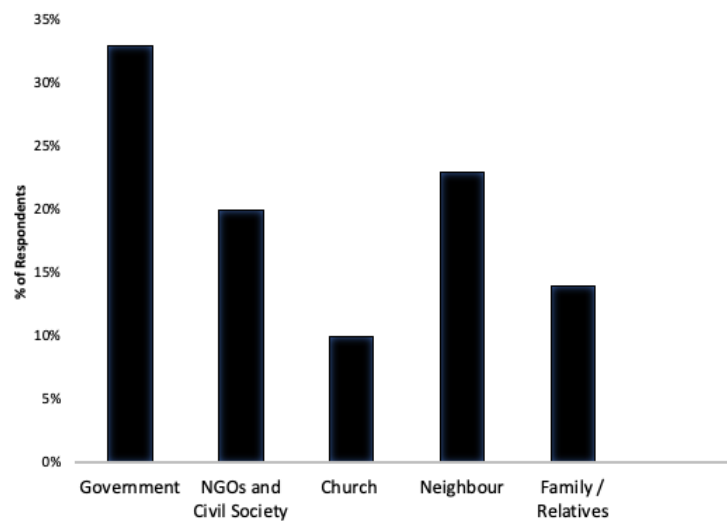
Question: Who can you rely upon the most to help you deal with floods and other climate-related disasters?
Source: Author's survey (2018)

The interviews further explored the dynamics of people's relationships by asking them how they provide support to one another. Two recurring themes describing how people in Tambaliza engaged with one another were "gift giving" and "reciprocal exchanges." Both of these themes speak to the diverse economic transactions households engaged to survive. The first theme – gift giving − was discussed by a majority of respondents (16 out of 20) from various sitios. They argue that gift giving has been a way of life in their small community even before the NGOs have implemented their adaptation interventions. They contend that they have exchanged gifts such as excess catch of fish, squid, and crabs with their community members. Aside from giving of food, three of the interviewees talked about receiving free fuel from fellow fishermen. Half of the interviewees were recipients of gifts, while the other half said that they gave gifts to their neighbours. Those who gave gifts (n=8) said that they did not expect anything in return, while those who received gifts (n=8) found them very helpful in dealing with their economic scarcity.

Nevertheless, among those who received gifts, the majority (n=7) talked about repaying the kindness of their neighbour in kind. These were often in the form of cooked meals or free labour to fellow fishermen who needed help in fixing their fishing boats and / or their gears. One respondent from sitio Punting said: "I cannot bear to just be in the receiving end of goods. I try to offer whatever I can to help my neighbour" (Male, personal interview, June 20, 2018). This feeling of the need to reciprocate is deeply rooted in Filipino culture which is so concerned about getting along with others (Hollnsteiner, 1961; Kaut, 1961). The local term is *utang na loob,* which according to Kaut (1961, p. 258), "reflects a system of social sentiments of deep and strong affective nature and expressively symbolizes a whole configuration of reciprocal obligations." The respondents also shared that the adaptation interventions of the NGOs, most especially the community-based self-help groups that they helped organise, worked as a catalyst for the increase in gift-giving

transactions in their community (Figure 5.5). One respondent shared: "our community savings groups really brought us closer to one another. We share whatever problems we have with our groupmates, and a number of them often reach out and help those who are in need" (Male, Proper, personal interview, June 20, 2018). Social cohesion was already high in Tambaliza prior to the NGOs' adaptation interventions, and it continued to remain high even after the adaptation projects.

Figure 5. 5: A meeting of a community savings group in Sitio Proper

Source: Author's Photo

In summary, the adaptation interventions have different impacts on people's social networks and relationships in the two case study sites. In San Isidro, the resettlement of households generated social cleavages which resettlement scholars refer to as 'social disarticulation' (Downing & Garcia-Downing, 2009; Milgroom & Ribot, 2020; Rogers & Wang, 2006). Cernea (2000, p. 3666) explains that "forced displacement tears apart the existing social fabric. It disperses and fragments communities, dismantles patterns of social organisation and interpersonal ties…" Relationships between the residents of the resettlement site were fragmented, inevitably affecting the networks of reciprocal help and support. This is highly problematic because social cohesion and networks of support are necessary both for the long-term viability of resettlement and its ability to adapt to climate change (Oliver-Smith, 2009; Vanclay, 2017). On the other hand, the implementation of adaptation interventions through community-based groups in Tambaliza helped fuel the already active and dynamic inter-relations of giving and reciprocity. Interview respondents claimed that their neighbours were happy to share any catch of fish that went beyond their needs and that people would sometimes repay them in-kind. Such gift giving and non-market forms of exchange have fostered connections between people and have helped strengthen both their material and psychologic well-being even before the presence of any adaptation projects of the NGOs. These activities are especially important in terms of providing extra help to and safety nets for the marginalised members of these communities.

5.9 Discussion

This chapter was concerned with distributive justice and how the benefits and burdens of the adaptation interventions carried out in Iloilo were distributed. But rather than focusing exclusively on the distribution of income, resources and risks − as is common in studies working in the distributive justice tradition that was critiqued in Chapter 2 − the chapter evaluated the distributive (in)justice of these adaptation interventions using a four-item capabilities framework adapted from Kronlid (2014). Changes in the capabilities of the project participants were assessed across four areas; namely, life, knowledge, work and friendship. According to this framework, justice entails the promotion and expansion of valuable capabilities while injustice is seen as the deprivation of capabilities and functionings.

The chapter demonstrated a key strength of the capabilities approach: its ability to provide insights on the distributions of vulnerability and inequality as well as their impacts on people's lives. This approach allows for a close scrutiny of the capabilities held by people and whether adaptation interventions enable people to express and exercise these capabilities in a functioning life. The findings from both study areas reveal that the distribution of the benefits and burdens of the adaptation projects were uneven. In San Isidro, the capabilities of only a select few have been enhanced. As a result of the adaptation interventions, the residents of Dutch Hospitality have better access to infrastructure services compared to the residents from the other NGO sites after resettlement. They also had access to higher quality housing compared to others. In addition, the residents of Dutch Hospitality also reported receiving more relevant information about climate change compared to those from other NGOs. What's more, they also reported higher incomes and improved food security compared to the rest of those in the resettlement site. These findings show that the capabilities and functionings of the majority of the resettlers were undermined as a result of being resettled. This is consistent with the findings of previous research in other contexts showing that resettlement often causes impoverishment, marginalisation, food insecurity, and social disarticulation (Cernea, 1997; Milgroom & Ribot, 2020; Rogers & Xue, 2015; Wilmsen et al., 2011). More specifically, the residents of Concern Italy, Houses4Humanity and Care Foundation reported issues such as inadequate supply of clean water, clogged sewerage systems, and substandard houses following their resettlement. They also exhibited lower income growth following their resettlement compared to the households resettled by Dutch Hospitality. On the other hand, there has been significant evidence that the capabilities and freedoms of the residents of Dutch Hospitality have been enhanced by their resettlement. Aside from the substantial improvement in the quality of their housing and infrastructure services, they were also able to access savings and credits and other livelihood programmes that helped them increase their incomes. These differences in the expansion of capabilities have generated some animosity and discriminatory attitudes among the residents, undermining their social support networks and relationships.

In a similar way, the benefits and burdens of the climate change adaptation projects of the NGOs in Tambaliza have not been distributed evenly. As a consequence of the NGOs' adaptation interventions, the residents of Botlog and Punting not only reported lower levels of improvement in their access to basic services; they were also marginalised in terms of access to livelihood projects that could have generated additional income for their households. These findings accord with the long tradition of scholarship that demonstrate how adaptation programmes can further marginalise individuals and enhance their vulnerabilities (Nagoda & Nightingale, 2017; Ribot, 2014; Sovacool & Linnér, 2016). Resources and projects were heavily invested in select areas of high economic and political value, without giving adequate attention to marginalised and socially neglected sitios like Botlog and Punting. As a result, significant gaps in monthly income and access to infrastructure services were reported among the residents, with those in the marginalised sitios remaining hungry and in need of more livelihood projects to improve their socio-economic conditions. What past studies on climate adaptation did not capture, however, were the relationships of care and support that were present among the residents of Tambaliza. The field research uncovered social practices centred around the provision of both unpaid and reciprocal forms of labour, such as sharing and gifting, that enhanced the capabilities of the most vulnerable to adapt to climate change.

This chapter also demonstrates the limitations of using a capabilities approach to the evaluate distributive justice of adaptation interventions. One limitation of the capabilities approach is that it pre-determines what capabilities are deemed important to observe and not to observe. This sits in tension with the postdevelopment framework (used in Chapter 7) that urges the analyst to look for the diverse, innovative, and often neglected ways in which people are adapting to climate change on their own terms. Moreover, the way that each capability is defined and articulated is quite narrow and rigid. For example, one of the capabilities identified by Kronlid is work *and* play. He assumes that work is entirely distinct from play. However, this assumption does not fit well with the findings of the case study. For instance, the shops that some of the residents in San Isidro have set up next to their homes mean that they are running the shop at the same time as playing with their children, cooking dinner, or watching TV. Similarly, fishing does not only happen within the limits of an 8-hour working day in Tambaliza. The work/play distinction of the capabilities approach, therefore, only applies to the small proportion of people who clock in and out of wage labour. Recognising this, the chapter also invoked the diverse economy framework to illuminate all the other things that people do to provide for themselves, their families and their communities.

The narrow and limited framing of capabilities and the human condition is also translated to a narrow and binary framing of justice. The capabilities approach asserts that policies that enhance people's capabilities and opportunities for well-being are regarded as just while those that undermine people's capabilities are treated as unjust (Alkire & Black, 1997; Robeyns, 2006). But the findings of this chapter reveal that ideas of what is just or unjust is context-dependent and deeply

contested. For instance, climate-related resettlement can be considered just from the perspective of the residents of Dutch Hospitality in San Isidro because their capabilities have been enhanced. However, this is not true from the perspective of the residents from the other NGOs even if they altogether reside in the same resettlement site. Moreover, it is also difficult to assess whether the climate adaptation projects of the NGOs in Tambaliza have purely been just or unjust. Different capabilities can be enhanced and undermined at the same time by the same programme. For instance, while the climate adaptation interventions of First Response Ireland undermined the work capabilities of the residents of Botlog and Punting, they nevertheless enhanced their capabilities for preparing and responding to future natural disasters. Hence, the residents of Botlog and Punting were critical of some of the project measures and appreciative of others. In a similar way, the adaptation projects of Dutch Hospitality in San Isidro have enhanced their financial viability and adaptive capacities to typhoons at the same time as isolating them from their neighbours. The benefits of the adaptation interventions are thus not a zero-sum game: it does not necessarily follow that the gain in capabilities of one group translates to the loss of capabilities of another group. Reality is more nuanced and complex than a simple binary of just/unjust or the enhancement/blocking of peoples' capabilities.

Finally, the capabilities approach also makes the implicit assumption that just distribution, where all individuals are placed in an equal position of power and control, is possible. According to Sen (1999b), the objective of justice is seen as equality in the space of people's capabilities. Indeed, the plans and objectives of the NGOs embodied this ideal, at least on paper, and all the interventions sought to enhance people's capabilities equally. Unfortunately, things did not turn out exactly as planned. This chapter provides several examples of how the well-intentioned plans of the NGOs failed to translate into practice. Aspects of the interventions in San Isidro and Tambaliza have turned out to be maladaptive, because in meeting the needs of the few (who were often the most privileged members of their communities), the projects also failed to give the most assistance to the most vulnerable and, in doing so, exacerbated inequality and created social tension. Given that it is a herculean task to ensure that resources, power and control are equally shared amongst all of the participants, this raises the question: can adaptation intervention ever be considered truly just?

While the approach used in this chapter is useful for uncovering how adaptation interventions augment the capabilities of some members of a communities and hinders the capabilities of others, and, in doing so, provides some basis for assessing whether interventions are just, it reveals little about the important issues of participation and recognition. Schlosberg (2007, p. 29) maintains that justice requires "not just an understanding of unjust distribution… and lack of recognition… but, importantly, the way the two are tied together." Therefore, the next chapter asks: *what drives* the (un)just distribution of cost, benefits and risk? It focuses on the institutional forces that produced the outcomes analysed in this chapter. It does so by engaging directly with the issues of recognition, participation and inclusion. It also builds upon the capabilities approach of this chapter by reframing

participation and recognition as key capabilities necessary for just adaptation. It therefore heeds the call of critical adaptation scholars for more research on how political, social, and economic exclusion drives inequality, vulnerability, and maladaptation (Sovacool & Linnér, 2016; Taylor, 2014).

Chapter 6: Procedural and Recognitional Justice in Climate Change Adaptation Interventions

6.1 Introduction

Environmental justice scholars have argued that a conception of just adaptation that focuses on the distribution of income and resources alone is too limiting because individuals have different capabilities to convert those commodities into meaningful outcomes in their lives (Holland, 2017; Malloy & Ashcraft, 2020; Schlosberg, 2012a). In response, Chapter 5 used a capabilities approach to move beyond a purely resource/income-based conception of distributive justice. However, a focus on the distribution of resources *and* changes in capabilities does not take us far enough. While the previous chapter provides some insights into the distributions of vulnerability and inequality resulting from the implementation of the adaptation interventions, it revealed little about whether other forms of injustice contributed to the observed maldistribution.

Recognition and participation need to be considered in relation to adaptation justice because both are pre-requisites for distributive justice. The three forms of justice − distributive, recognitional and procedural − are mutually reinforcing, both conceptually and in practice. For example, if politicians, bureaucrats and project proponents fail to recognise the existence and needs of vulnerable groups – or these groups lack the resources to ensure their voices are heard − they have little hope of participating meaningfully in decision making processes and, thereby, achieve either procedural justice or distributive justice (Franks & Schreckenberg, 2015). Recognition and participation are therefore key to achieving distributive justice. However, one key issue with contemporary theories of justice is that "recognition, and its link to both distribution and to participation, is simply under theorised" (Schlosberg, 2007, p. 11). By emphasising issues of recognition and participation, this chapter attempts to address this gap in the literature.

While recognition and participation are examined as independent components of justice, the point is not to supersede distributive theories of justice but to synthesise components of the different theories to arrive at a holistic conception of 'just adaptation.' This chapter is thus inspired by the work of scholars like Fraser (2010), who argues for a three-dimensional theory of justice, and Schlosberg (2012a), who calls for a multifaceted approach to justice. Other scholars such as Young (1990) and Honneth (1995) have also been clear about the need to incorporate issues of recognition alongside distributive and participatory concerns. Within the field of climate adaptation, Paavola and Adger (2006, p. 602) explain how different components of justice are connected: "if a group is not recognised and cannot participate… its interests are unlikely to inform plans and decisions". By considering issues of recognition and participation alongside distribution, this chapter contributes to uncovering the 'why' of injustice. A central aim of this thesis is to examine not only the

distribution of the costs and benefits of adaptation intervention, but also the *contexts* that produce these distributions. This echoes Schlosberg's (2007) call to better understand and remedy injustice by unpacking the broader social, economic, political and environmental process that produce unjust outcomes.

This chapter builds upon the capabilities approach used in the previous chapter to explore procedural and recognitional justice in adaptation interventions in Iloilo. It examines whether people have the capabilities needed to meaningfully participate and influence adaptation processes and decisions (and if not, whether the implementing agencies took adequate measures to bolster these capabilities). As will be explained later, the capabilities approach incorporates recognition and participation as critical components of justice. Holland (2017) argues that focusing on people's capabilities to influence adaptation decisions can help better understand the different barriers to transformational outcomes. Therefore, the focus of this chapter is on the processes and procedures by which certain groups are targeted for intervention and, having been selected, how these processes and procedures interact with people's pre-existing capabilities to determine whose voices are heard (and whose are not) when planning and implementation decisions are made.

The chapter is structured as follows. Section 6.2 provides a brief discussion of the procedural and recognitional components of adaptative justice. Drawing on the work of Nussbaum (2000) and Paavola et al (2006), Section 6.3 describes the capabilities that people need to engage meaningfully in decision making processes and, in doing so, achieve procedural and recognitional justice. Returning to the case studies, Section 6.4 describes the processes, procedures and guidelines of the local government agencies and NGOs pertaining to procedural and recognitional justice. Drawing on the fieldwork data, Section 6.5 analyses people's perceptions of the procedural and recognitional justice (or lack thereof). Section 6.6 concludes by describing how the mechanisms put in place to ensure procedural and recognitional justice were subverted by local politic processes and discusses the challenges of achieving inclusive and participatory justice in practice.

6.2 Justice as Recognition and Participation

A number of scholars have challenged the purely distributive way of conceptualising justice in the literature. One of the earliest challenges is from Young's opus "Justice and the Politics of Difference." She argues that while distributive issues are important, they are unable to thoroughly capture the social, cultural and institutional conditions that shape poor distribution (Young, 1990). Other theorists such as Taylor (1994) and Honneth (1995) propose that a lack of recognition is a form of injustice because it constrains the opportunities given to people and inflicts harm through degradation and devaluation. For Fraser, the way to address distributive injustice is to focus on political economic re-structuring, which entails, among other things, recognition and participation

(Fraser, 2010). These early works paved the way for the contemporary tripartite typology of distribution, procedure, and recognition (Bulkeley et al., 2014; Schlosberg, 2007; Walker, 2012).

Fraser's (2000) work has been influential in calling attention to both the distributive and recognitional aspects of justice. She calls for a deeper examination of the socio-political and institutional barriers that impede the full recognition of a group as a full member of a wider community (Fraser, 2000). The climate justice literature also recognises the need to expand conceptualisations of justice to incorporate the issue of recognition. For instance, Schlosberg (2012a) argues that political and cultural exclusions, stemming from a lack of recognition, can exacerbate existing inequality and vulnerability. He calls for greater recognition of "the experiences of the vulnerable and the way that their status is, in part, socially, politically and economically constructed" (Schlosberg, 2012a, p. 452). Similarly, Bulkeley et al. (2014) contend that recognition is a lens that can be used to examine the politics of climate justice. Engaging with the principle of recognition "provides a critical means through which to analyse the ways in which processes of urban development serve to produce forms of social, political, and economic inequality… and contribute to creating forms of vulnerability… on the other" (Bulkeley et al., 2014, pp. 33-34). Recognition, however, can only go so far. There is a need to convert recognition into meaningful participation in decision making. Adger et al. (2011) makes explicit the link between recognition and procedural justice, arguing that the marginalised and vulnerable groups in a community should be recognised and given a greater say in the decision making processes pertaining to adaptation interventions.

Procedural justice involves questions of who participates, on what terms, and how decisions are made (Martin et al., 2016). It involves institutional processes and procedures, and asks 'who is involved' in climate change adaptation interventions and 'how they are selected?' (Graham et al., 2015; Thomas & Twyman, 2005). Procedural justice underpins the legitimacy of adaptation projects "because it assures those whose interests are not endorsed by a particular decision that their interests have been considered and that they have a chance to count in other decisions" (Paavola & Adger, 2006, p. 601). Schlosberg (2004) makes the link between procedural justice and recognitional justice, arguing that by enabling those who are affected by adaptation programmes to express their consent or dissent, their dignity and self-respect are maintained.

In the early 1990s, justice theorists began to recognise the close relationship between procedural justice and recognitional justice. For instance, Young (1990) argues that participatory processes challenge institutional exclusion and unjust distributive patterns. She insists that participatory and democratic structures are necessary elements of social justice. Honneth (1992) emphasises the direct link between recognition and participation. If one is not recognised, one cannot participate; if one does not participate, one cannot get recognised. Fraser (2001, p. 29) highlights the need for 'parity of participation' which can only be achieved when there is "respect in institutional patterns

of cultural value and the resources to enable participation." This was taken up later by Schlosberg (2007), who sees public participation as a tool that can help achieve distributive equity and political recognition.

The increasing attention given to the issue of procedural justice in the academic literature slowly translated into the practice of adaptation. In recent decades, participatory climate adaptation policies and action plans have been developed as a means of fostering adaptive capacity (Ayers & Forsyth, 2009; Moser & Stein, 2011). While theoretically attractive, participatory approaches to adaptation are not without challenges. Within the fields of development studies and political ecology, 'participation' is criticised for often being tokenistic; a process of public consolation that gives people little meaningful influence over final outcomes (Agrawal & Gupta, 2005; Cooke & Kothari, 2001; Tschakert et al., 2016). Cooke and Kothari (2001) warn about the possibility of participation being tyrannical and involving unjust use of power. Others demonstrate how participatory processes are prone to elite capture, resulting in the exclusion of the most vulnerable (Harrison & Chiroro, 2017; Nagoda & Nightingale, 2017).

Despite these difficulties, participatory tools have been refined and widely adopted over time. Scholars argue that almost every development tool kit and manual now has a participatory component (De Negri et al., 1998; Hope et al., 1995). These manuals "envision a democratic process that given a flexible, respectful and egalitarian approach, can be used anywhere to achieve sustainable development and empowerment of poor and marginalised groups" (McKinnon, 2007, p. 776). The "will to improve" is so persistent that development professionals see participatory processes as perfectible (Li, 2007, p. 270). There is, therefore, a strong belief that improved participatory mechanisms can prevent unjust outcomes in the future (Schlosberg, 2007).

As will be discussed in more detail later, the NGOs and local governments involved in the two case studies actively endorsed the principles of participation and recognition when planning their adaptation programmes. For instance, the IFCP resettlement adopted the social safeguard policies of the Asian Development Bank (ADB) and the World Bank, which are generally regarded as the standard of international best practice in this area. For example, the Resettlement Action Plan (RAP) for San Isidro stressed the importance of "the inputs and commitments of the key stakeholders and the beneficiaries… This is in recognition of the capabilities of these stakeholders in terms of determining what they can achieve based on their felt needs and not entirely dependent on what lead planners want" (DPWH, 2005, p. 49). Likewise, all three of the NGOs in Tambaliza were certified by the Humanitarian Accountability Partnership (HAP), an organisation which oversees humanitarian work to ensure accountability and transparency. Under HAP's Benchmark 3, NGOs are required to "enable intended beneficiaries and their representatives to participate in project design, implementation, monitoring and evaluation" (HAP International, 2013, p. 35). Therefore, on paper, the adaptation interventions subscribed to international principles requiring them to

ensure participation of all the stakeholders in their projects. This raises the question: is compliance with internationally acclaimed guidelines sufficient to ensure socially just processes and equitable outcomes? The following sections seek to address this question.

6.3 Recognition and Participation within the Capabilities Approach

The literature on participatory development demonstrates that people differ in their capacity to participate meaningfully in decision-making processes (Hildyard et al., 2001; Mosse, 1994). Because some people have more access to resources and political influence than others, Cornwall (2004a) contends that the spaces in which people are invited to participate are never neutral. For this reason, Grasso (2007) emphasises the need to take into account the capabilities, resources and freedoms that people possess to influence adaptation decision making processes. In a similar vein, Tomlinson (2015, p. 122) contends that "equalising capabilities is a more appropriate way of achieving the equal opportunity for political influence when there are large discrepancies in peoples' ability to convert decision-making resources into political influence."

This raises the question: what capabilities are most important for determining recognition and participation? Unfortunately, Kronlid's (2014) list of nine capabilities (used in Chapter 5) is not very helpful in this regard. Although Kronlid (2014) mentions that procedural justice is essential to expanding people's capabilities (pp. 25), he does not refer to recognition or participation when describing his list capabilities. Hence, in this chapter, I develop my own list of capabilities that people need pursue procedural and recognitional justice. To guide my conceptualisation, I turn to Nussbaum's (2000) capabilities framework and Paavola et al.'s (2006) conception of procedural justice in climate change adaptation. I demonstrate that recognition and participation, as important components of justice, can be brought under the umbrella of the capabilities approach.

Nussbaum sees public participation and recognition as essential components of justice. One of Nussbaum's ten human capabilities is "*control over one's environment*", which she defines as: "being able to participate effectively in political choices that govern one's life; having the right of political participation, protections of free speech and association" (Nussbaum, 2006, p. 78). Nussbaum, therefore, sees participation as a key capability that supports the overall functioning of a person. Moreover, she regards self-respect and non-humiliation as a central capability. She emphasises the need to "be treated as a dignified being whose worth is equal to that of others" (Ibid.) This explicitly ties the capabilities approach to the issues of participation and recognition. It indicates that the capabilities approach can be used to integrate the issues of participation and recognition into an overarching theory of justice.

Recognition and participation also form part of Paavola's conception of procedural justice in climate change adaptation. For Paavola et al. (2006), there are three principles of procedural justice in climate adaptation: (1) recognition (consideration of several groups' interests), (2) participation (involvement and the right to be heard), and (3) the distribution of power (commitment to assistance). Grasso (2010) contends that the third component – the distribution of power − is central because it equips people with the ability to be informed and capacitated with the knowledge and skills needed to take part in adaptation processes. These three principles correspond to the following capabilities in my proposed analytical framework: (1) voice, (2) participation, and (3) empowerment (Table 6.1).

Table 6. 1: Capabilities Framework on Assessing Procedural and Recognitional Justice in Climate Adaptation Processes

Dimensions of Justice	Paavola et al. (2006)'s Principle of Justice	Basic Capability	Definition
Procedural and Recognitional Justice	Recognition	Voice	Ability to raise one's concerns
	Participation	Participation	Ability to participate and have a share of influence in decision-making
	Distribution of Power	Empowerment	Ability to be informed and capacitated with knowledge and skills

Source: Author's own adaption of Paavola et al.'s (2006) principles of justice

Voice refers to the ability to make oneself heard. People should have the capability to formulate views, make opinions, and be able to express their views in a public forum (Tomlinson, 2015). *Participation* refers to the ability to take part in adaptation interventions and, more importantly, influence the outcome of a decision. Adger et al. (2006) argues that participation requires giving people power in decision-making. Moreover, Holland (2017, p. 397) stresses that this capability requires that one is able to "apply enough political pressure within unjust adaptation decision processes to successfully push decisions in a particular direction". Finally, *empowerment* refers to the knowledge, skills, and resources necessary for people to be meaningfully involved in adaptation processes. People need the relevant knowledge and skills to take part in adaptation projects, and more importantly, have the political power to shape and influence important decisions. For example, Haynes and Tanner (2015) demonstrated that training young people on the concepts of disaster risk reduction, climate change adaptation, and the technical procedures of video production have empowered them to raise issues with decision-makers and to advocate for change within their communities.

The next section explores the adaptation interventions in the two case study sites and uncovers to what extent the aims and processes of the projects enhanced (or hindered) voice, participation, and empowerment.

6.4 The Planning of Adaptation Interventions in Iloilo

Just adaptation involves the norms of inclusion, involvement, consistency and transparency (Brandstedt & Brülde, 2019; Dolan et al., 2007). On paper, the adaptation interventions in Iloilo subscribed to the ideals of promoting participation and recognition. But, as will be explained later, how the government and NGOs represented themselves is not necessarily in accord with how the local residents experienced their projects. Nevertheless, the plans and targets of the government and NGOs, if they had been applied correctly, were consistent with achieving the ideals of just and democratic adaptation.

The Iloilo City government promotes a participatory approach to development planning: "Iloilo City is a leader in the practice of participatory governance that will speed up and sustain growth and development, in order to open up more and better opportunities for all" (Iloilo City Government, 2013, p. 17). It is therefore not surprising that the RAP for San Isidro prescribes a participatory approach that sought to involve community members in the planning of their own resettlement. Numerous sections of the RAP speak about the need to involve people in the planning process, calling for the inclusion of inputs from various stakeholders, including the project-affected families (DPWH, 2005). It identifies a series of activities to be undertaken by the resettlement planning agencies[6] to ensure the resettlement process of the IFCP was inclusive and appropriate to the needs of marginalised groups.

To enhance people's **voices**, the RAP calls for barangay-level officials to consult with the residents before they were relocated. It also stipulates that community discussions had a special bias towards "vulnerable groups such as women, elderly, and persons with disability" (DPWH, 2005, p. 4). The objectives of the consultations were two-fold: to provide details about resettlement to the households and to collate their opinions and suggestions. To promote people's **participation**, the RAP requires that project-affected families be involved in a series of consultations. The RAP also states that households were involved in pre-relocation activities such as socio-economic profiling, census and tagging, and livelihood planning. Project-affected families were also meant to be connected to income generating-activities, such as community-based trades like cooking, selling,

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[6] Implementing agencies for the Iloilo Flood Control Project include local government departments such as the Iloilo City Urban Poor Affairs Office (ICUPAO), City Social Welfare and Development Office, City Engineers' Office, City Planning and Development, and City Health Office together with national government offices such as the National Housing Authority, the Philippine National Police, Department of Social Welfare and Development and others.

and vending (DPWH, 2005, p. 43). To facilitate people's **empowerment**, the RAP requires that project-affected households were engaged in social preparation schemes, such as information-education sessions, capacity-building workshops and other training. The sessions were meant to explain resettlement policies and develop leadership and conflict resolution skills so that the "communities are prepared to take charge of their social, economic, and political lives within their set standards" (DPWH, 2005, p. 31). Hence, the RAP suggested several measures needed to ensure the resettlement process was procedurally and recognitionally just.

In Tambaliza, the strategies outlined by the NGOs in their project documents also suggest a specific focus on enhancing people's capabilities to participate and be recognised. To augment people's **voices**, the NGOs claimed that they worked to organise platforms where residents were given opportunities to be heard. Sacred Aid UK reported that it initiated a number of community meetings to collect feedback on how they might improve the delivery of their programmes (Sacred Aid UK, 2016 p. 27). British4Environment's major project – the establishment of MPA sites – is managed by a council composed of community members. MPA management plans are "participatory and bottom-up in approach, and community members are active participants during community consultations" (British4Environment, 2017, p. 31). Similarly, First Response Ireland ran a series of focus group discussions with their community members to identify problem areas and come up with strategies to address them (First Response Ireland, 2013, p. 8).

The NGOs list a range of measures they put in place to encourage people's **participation**. Sacred Aid UK claim they helped organise self-help groups and community-based formations to encourage more people to take part in their projects (Sacred Aid UK, 2016 p. 19). British4Environment emphasised the "local participation of men and women in decision-making using the participatory process of problem identification, planning, implementation and monitoring" (British4Environment, 2012, p. 37). First Response Ireland reported that they involved the residents (especially from far-away sitios) in non-fisheries type of livelihood programmes, such as workshops on seaweed farming, dressmaking, and animal husbandry (hogs and native chickens) (First Response Ireland, 2013, p. 25).

Finally, to facilitate people's **empowerment**, the NGOs claim to have put in place measures to increase the capacity of residents to adapt to climate change. Sacred Aid UK stated that it enhanced the capacities of local government and communities to prepare for disasters by "the formation of Disaster Risk Reduction (DRR) Management Councils, training of rescuers and life savers, development of DRR plans including the conduct of hazard maps and simulation drills, and installation of communication systems and early warning" (Sacred Aid UK, 2016 p. 15). British4Environment shared that it trained community members in "facilitating meetings, taking minutes, making decisions, and solving problems" so they can properly enforce the MPA (British4Environment, 2012, p. 46). First Response Ireland stated that it attempted to make their

disaster simulations inclusive as stipulated by their organisation's adaptation objectives, "to ensure that programmes benefit the entire community and not a few selected families" (First Response Ireland, 2013, p. 26). A summary of the adaptation interventions and the corresponding capabilities they sought to enhance is presented in Table 6.2.

Table 6. 2: Summary of the Adaptation Interventions and the Capabilities for Procedural and Recognitional Justice

| Capabilities for Procedural & Recognitional Justice | Study Site 1: San Isidro | Study Site 2: Tambaliza | | |
	Resettlement Project	Sacred Aid UK	British4Environment	First Response Ireland
Voice	Consultation with special bias towards the vulnerable	Community consultations and dialogues	Establishment of community councils for consultation	Focus groups, workshops
Participation	Socio-economic profiling, livelihood projects	Formation of Self-help groups and Community-based associations	Involvement from project planning to implementation and monitoring	Involvement in non-fisheries livelihood programmes
Empowerment	Social preparation activities (training, info session, capacity building)	Formation of DRR management councils, training, and early warning	Training on environmental conservation, leadership and facilitation	Disaster simulation and training

Source: Compiled by the author from the official project documents of the NGOs

6.5 Assessing Procedural and Recognitional Justice through the Capabilities Approach

This section explores procedural and recognitional justice in the adaptation interventions in Iloilo through the lens of the capabilities approach. It assesses whether the residents were accorded the capabilities of voice, participation, and empowerment in the implementation of adaptation projects. The section is sub-divided into the three capabilities. In each subsection, people's perceptions of the justice of the adaptation processes, based on the household survey, will be presented first. The survey findings are supported by an analysis of the recurring themes and quotes that emerged from interviews and through participant observation.

6.5.1 Recognitional Justice (Voice)

Central to recognitional justice is voice, or the ability to express one's own opinions, attitudes, and needs. It is widely accepted in the literature as "a component and a condition of justice" (Walker &

Day, 2012, p. 70). In order for people's voices to be recognised, their distinct interests and perspectives should be taken into consideration. Paavola et al. (2006) explain that public forums and consultations are an integral part of planning and decision-making process that allow the interests of all stakeholders to be recognised and considered.

Recognitional justice was explored by asking survey respondents whether they agreed or disagreed with a number of statements about whether they felt recognised and actively involved in the planning and implementation phases of the adaptation programmes. Tables 6.3 and 6.4 present the key findings from the household survey.

Table 6. 3: Perceptions of recognitional justice in San Isidro

Statement/question	% of Respondents who Agree or Strongly Agree				χ^2
	Dutch Hops. (N = 46)	Concern Italy (N = 61)	Houses4 Hum (N = 60)	Care Found. (N = 33)	
The government asked for my opinion/ suggestion when planning my relocation.	88.9%	77.1%	71.0%	65.3%	25.56**
I have been invited to a meeting/forum where I could make suggestions about my relocation.	92.6%	86.9%	80.6%	81.7%	16.14*
Do you think the authorities consider the views of ALL (women, children, elderly) before making decisions?	92.8%	62.3%	64.9%	73.5%	30.88**
Do you think that the authorities give opportunities for citizens to express their views before making decisions?	87.3%	65.5%	71%	67.4%	25.99**

* p < 0.05;   ** p < 0.001
Question: *Think about your relocation experience. To what extent do you agree or disagree with the following statements?*
Source: Author's survey (2018)

In San Isidro, the resettled households reported significant differences in the degree to which they felt their concerns and issues with the interventions were heard. Of the four NGOs, those resettled by Dutch Hospitality reported feeling more able to express their voices compared to other resettlers. More respondents from Dutch Hospitality also indicated that the government asked for their opinions before making decisions (χ^2=25.56), and that they were invited to a public forum where they could make suggestions before their relocation (χ^2=16.14). On the other hand, more respondents from the other NGOs felt that they were not given the chance to speak up (χ^2=25.99) and that their voices were not taken into consideration in the planning of their resettlement (χ^2=30.88). These findings suggest that the residents from Dutch Hospitality are more capable of expressing their issues and concerns about adaptation compared to those from the other NGOs. They also reported being accorded more opportunities and platforms to make comments and suggestions about relocation.

The key themes that emerged during the interviews on the topic of voice and recognition were "lack of consultation", "very slow responses", and "sense of shock". All interviewees from Concern Italy (n=3) and Houses4Humanity (n=3), together with two interviewees from Care Foundation (n=4), said that there were few consultations between community members and the local authorities. One respondent resettled by Concern Italy, whose partner was disabled, said: "I don't feel like I can raise my concerns to anyone here. I just let it go or take matters into my own hands" (Female, personal communication, May 31, 2018). This lack of communication and consultation between the government and the residents led to a sense of shock and surprise after they were relocated. Two participants from the Concern Italy project and two from Houses4Humanity project reported that they had no idea what the resettlement site looked like, and that they were worried about relocating because they had the impression there was nothing at the resettlement site. A respondent from Houses4Humanity shared:

> We were relocated immediately. I trusted the word of the OIC [officer-in-charge] that the relocation site was already complete with basic services. I actually had no specific idea what the relocation site looked like. I was thinking: maybe the houses will look okay. When I get here, I was shocked. Is this our house? There was no electricity, no water, and the doors were damaged. I feel like they lied to me (Male, personal interview, May 15, 2018).

Moreover, two interviewees from Concern Italy project, one from Houses4Humanity project and one from Care Foundation project talked about getting slow responses from authorities whenever they voiced their concerns. The respondent from Houses4Humanity shared that she had to call her relatives for help to repair the roof of her house because it was destroyed by a typhoon. She said, "if I could solve a problem on my own – I just do it. I could not rely on the local authorities for help!" (Female, personal communication, May 18, 2018). In contrast, all of the Dutch Hospitality interviewees (n=3) felt that they were given more than enough opportunities to express any issues or concerns. One respondent summarised the group's sentiment: "we had been invited to a number of meetings with other stakeholders before being moved. I believe that those sessions were helpful as most of our questions about our relocation were answered" (Female, personal communication, May 16, 2018).

In Tambaliza, there are also significant differences in people's perceptions of recognitional justice (Table 6.4). Some groups felt they were not acknowledged or recognised enough in the implementation of the adaptation interventions. Only 30% of respondents from Botlog and 35% of respondents from Punting felt that their voices were recognised in the planning and implementation of adaptation projects. In contrast, more than 60% of the respondents in Pasil, Bat-os, Guinmisahan, Banban and Proper reported that they perceived their voices were heard in adaptation programmes. Furthermore, the survey results show that less than half from Botlog (45%) and Punting (48%) reported that they were treated as equal partners with dignity and respect. On the other hand, more

than 60% of the respondents in Pasil, Bat-os, Guinmisahan, Banban and Proper reported that they perceived their voices were heard in adaptation programmes. These numbers suggest that the residents of Botlog and Punting lack recognition in the planning and implementation of adaptation interventions.

Table 6. 4: Perceptions of recognitional justice in Tambaliza

Statement/ Question	% of Respondents who Agree or Strongly Agree							χ^2
	Proper (n=35)	Banban (n=10)	Bat-os (n=10)	Botlog (n=8)	Guinmisahan (n=10)	Pasil (n=12)	Punting (n=15)	
I feel that I was able to take part and participate in the climate adaptation projects.	94.3%	80.0%	70.0%	30.0%	80.0%	66.7%	35.0%	**11.70***
I feel that the NGOs treat me with dignity and respect.	91.4%	90.0%	100%	45.0%	70.0%	68.3%	48.0%	**10.88***

* p < 0.05;   ** p < 0.001
Question: *Think about your experience of climate change adaptation programmes in your community. To what extent do you agree or disagree with the following statements?*
Source: Author's survey (2018)

Key informant interviews were also conducted with the residents of Tambaliza. When asked who gets recognised and provided with the opportunities to be involved in adaptation programmes, their interview responses can be categorised into three main themes: (1) "Attendance in NGO projects", (2) "Membership in people's organisations", (3) "Political influence of the barangay".

The first theme − attendance in NGO projects − refer to people's participation in the adaptation interventions of the NGOs in Tambaliza. Many interviewees mentioned that residents who regularly took part in community activities were given priority by the NGOs. Staff members from the three NGOs admitted that they tracked attendance and used it as an indicator of the residents' willingness to join future programmes. A respondent from First Response Ireland confided: "we don't want to look bad to our funders so we have to make sure that we get the right people" (Female, informal interview, June 27, 2018). The right people were those who frequently participated in activities organised by the NGOs, such as disaster simulations, first aid training seminars, and the clean-up drive. Meanwhile, all interviewees from Botlog and one from Punting complained about this preference for 'active' residents. One respondent said: "Given the chance I would have loved to join all those trainings and seminars. But I have to tend to my family first and make sure that I can feed them" (Male, Botlog, June 14, 2018). Another respondent wished that activities were not mandatory and tracked given that they have other more pressing concerns such as acquiring food and earning a livelihood.

The second recurring theme from the interviews was "membership in People's Organisations". People's Organisations (POs) are defined in Article XIII, Section 15 of the Philippine Constitution

as "bonafide associations of citizens with demonstrated capacity to promote the public interests and with identifiable leadership, membership and structure" (Republic of the Philippines, 1987a). POs are non-governmental and membership-based collectives that are often grassroots in nature (Duthy & Bolo-Duthy, 2003). There are a number of POs in Tambaliza which cater to women, fishermen, farmers, senior citizens and parents, respectively. They enable their members to collectively protect and pursue their interests and aspirations through activities such as education, community development, environmental protection and livelihood development.

During the interviews, respondents emphasised the importance of being part of a PO. All interviewees who are members of a PO were able to secure spots in a number of livelihood projects offered by the NGOs. An official from one people's organisation called TASFA (Tambaliza Fisherfolks Association) explained that most of the NGOs only engage with POs and not individuals. He emphasised the importance of becoming a member of a PO as "residents who do not belong to an organised group are not included in the adaptation projects" (Male, Guinmisahan, personal interview, June 20, 2018). He also said that NGOs only deal with established POs because they do not have the time to set up and organise people. Although membership is free, the members are required to attend monthly meetings, which not everyone is capable of attending. For example, two interviewees were unable to regularly attend meetings and were eventually dismissed. They both commented that they wished the meetings were not mandatory and that these were held during late afternoons so that could attend after finishing their work. At the time of the interviews, neither were part of any other livelihood projects run by the NGOs.

The third theme revolved around the role that the barangay officials play in shaping the local residents' experiences with NGO interventions. As the level of governance closest to the community members, barangay officials are often involved in the implementation of adaptation projects. It is through the barangay that NGOs execute their plans and programmes (Layug et al., 2010). Barangay officials are elected by the local residents and tasked with "identifying community needs", drafting beneficiary lists and facilitating or hindering community feedback to aid agencies" (Ong et al., 2015, p. 33). As such, it is common practice for the NGOs to coordinate with the barangay leaders prior to the implementation of their adaptation interventions. Furthermore, if NGOs try to bypass local officials, this can create tensions, potentially impeding the implementation of their programmes (Mouton, 2015).

This close engagement between the NGO and the barangay was criticised by some of the interviewees for wantonly giving barangay leaders the ability to: (1) direct some of the NGO projects to their own constituents and (2) prioritise family members and friends over others. Two of the interviewed NGO staff members admitted that they know of a few barangay officials who, in the past, have directed adaptation interventions to their own sitios at the expense of other vulnerable sitios. One NGO staff expressed that she felt coerced to implement the aquaculture

project in a barangay official's sitio, noting that "the only way that we can get his support is by ensuring that we implement the project in his own sitio" (Female, personal interview, June 27, 2018).

Table 6.5 also demonstrates that the practice of administering adaptation interventions in a barangay official's sitio appears to be the norm in Tambaliza. There are 10 barangay officials in total on the island, comprised of one barangay chairman, seven councillors, one secretary and one treasurer. More than half (66%) of the adaptation projects have been implemented in Proper, Banban and Guinmisahan – sitios where 90% of the officials live in. In contrast, only 7% of the adaptation interventions have been conducted in Botlog and Punting. Barangay officials are pressured to showcase their ability to land projects among their constituents, especially since membership in local government structures such as the barangay are subject to change with each election cycle. Furthermore, 'debt of gratitude' is a key moral principle that underpins Filipino social relations. People who violate the norms of reciprocity are looked down upon as 'shameless' (Enriquez, 1986; Kaut, 1961). This is one of the reasons why barangay officials are keen to direct adaptation interventions to their own sitios. One resident remarked: "When new livelihood programmes are implemented in our locale, we somehow feel indebted to our local leaders for making it happen. We don't hesitate when it's their turn to ask for help from us" (Male, Proper, June 12, 2018). This demonstrates how barangay officials are somehow sowing debts of gratitude among their constituents, which they expect to harvest in the next elections.

Table 6. 5: Sitios and the Residence of the Barangay Officials

	Proper	Banban	Guinmisahan	Pasil	Bat-os	Botlog	Punting
Population	1010	404	322	252	357	273	785
Total No. of Local Officials	4	3	2	0	1	0	0
No. of Adaptation Programmes (as of 2018)	9	9	9	4	4	3	3
% of Adaptation programmes implemented	22%	22%	22%	10%	10%	7%	7%

Source: Percentages calculated from data provided by the Barangay Statistics Office (2018)

Another dominant theme that emerged from the interviews was nepotism. All three of the barangay officials interviewed talked about the importance of helping one's family first before anyone else. One of the officials shared:

> "It is probably human nature. When you see that your own relative is in need, you will really help him or her out. Blood is thicker than water as the saying goes. Why would you

give to others when your own brother is also in need? I think it is better to help your family first" (Female, Banban, personal interview, June 10, 2018).

Another official admitted that she owes a lot of things to her family: "I will not be where I am now without their financial and social help throughout the years. I don't think I can say no to helping them" (Sitio Proper, personal interview, June 12, 2018).

The issues mentioned in both case studies illustrate some of the problems associated with participatory development in general. An adaptation project may exclude specific groups of people, enabling resources to be appropriated by local authorities or social elites (Nightingale, 2017; Sovacool, 2018). Mosse (1994) warns that participatory processes have the potential to be controlled by local elites and can be easily manipulated by external agendas. Moreover, Hildyard et al. (2001, p. 59) explains that in participatory processes, 'the voices of local people rarely appear to be listened to… they are ultimately there because their involvement lends credibility and legitimacy to decisions that have already been made'. Hence these dynamics ultimately mean projects can reinforce the status quo and reproduce, rather than challenge, uneven power relations (Nagoda, 2015).

6.5.2 Procedural Justice 1 (Participation)

While recognition is important, there is more to justice than just being able to express one's issues and concerns. Paavola and Adger (2006) argue that people's rights to take part and influence decision-making also form an important facet of just adaptation. Paavola (2008) recommends including vulnerable people in all decision making process. But others warn that inclusion, alone, is not enough to make sure people can meaningfully influence adaptation decisions (Holland, 2017; Nagoda & Nightingale, 2017). By failing to meaningfully involve vulnerable groups in decision making, adaptation interventions may also fail to address the underlying causes of people's climate vulnerabilities. Grasso (2010a, p. 62) provides a picture of what meaningful participation may look like: "it should encompass the involvement, the right to be informed and to be heard in policy and law making, and the right to a general review of the enforcement of laws". This study endorses this view – meaningful participation requires both people's involvement in decision making *as well as* having the power to shape final outcomes.

As before, people's perceptions of procedural justice were elicited by asking survey respondents to agree or disagree with a range of statements. These statements explored whether the residents took part in the planning of the adaptation interventions and whether they had the ability to influence decision-making. Tables 6.6 (San Isidro) and 6.7 (Tambaliza) present the findings from the household survey.

Table 6. 6: Residents' Perception of Procedural Justice in San Isidro

Statement/question	% of Respondents who Agree or Strongly Agree				χ^2
	Dutch Hosp. (N = 46)	Concern Italy (N = 61)	Houses4 Humanity (N = 60)	Care Found. (N = 33)	
I feel that I was able to take part and participate in the resettlement process.	90.5%	81.6%	82.5%	82.9%	11.88*
I feel that the government listened to the people in my community before we were relocated.	87.3%	77.1%	74.25%	83.3%	13.91*
The government has made/ are going to make changes in their relocation strategies because of the action taken by my community.	80%	70.5%	64.5%	69.4%	11.82*
Do you think the authorities take ENOUGH time to consider their decisions carefully?	74.5%	65.5%	74.1%	67.3%	21.20**

* p < 0.05;   ** p < 0.001

Question: *Think about your relocation experience. To what extent do you agree or disagree with the following statements? (Likert scale: 1 – Strongly Disagree, 5 – Strongly Agree)*
Source: Author's survey (2018)

In San Isidro, the resettled households reported significant differences in the degree to which they felt they were able to participate in the adaptation projects and influence its processes. Of the four NGOs, those resettled by Dutch Hospitality reported being more involved in planning their relocation compared to those resettled by other NGOs (χ^2=11.88). More specifically, 90.5% of respondents from Dutch Hospitality felt that they were able to participate in the resettlement process, a number slightly higher than the other residents. More respondents resettled by Dutch Hospitality also felt that the authorities listened to them (χ^2=13.91). More specifically, 87.3% of respondents from Dutch Hospitality perceived that the government listened to them about their relocation compared to only 83% from Care Foundation, 74% from Houses4Humanity and 77% from Concern Italy. In addition, more respondents from Dutch Hospitality perceived the authorities have made changes to their adaptation programmes based on their inputs (χ^2=11.82) compared to the respondents resettled by the other NGOs. 80% of respondents from Dutch Hospitality said that the authorities have taken their suggestions into account, while less than 70% of respondents from the other NGOs felt that way. More of the respondents resettled by the other NGOs believed that local officials haphazardly made decisions without considering peoples' sentiments and opinions (χ^2=21.20) than those resettled by Dutch Hospitality. These findings show that perceptions of procedural justice are highly unequal in San Isidro: residents from Dutch Hospitality felt that they have more capability to participate and influence the resettlement processes compared to those resettled by the other NGOs.

Several themes emerged from the interviews. When asked who gets to be involved in the superior housing programme implemented by Dutch Hospitality, the following themes were highlighted by the participants: "difficult application processes", "friends and political allies", and "opaque and confusing selection". The first theme revolves around the difficult and lengthy application process

the participants had to go through to get into the Dutch Hospitality programme. The interview respondents explained that the NGO has set additional selection criteria on top of those mandated by law (Republic Act 7279; see Chapter 4). Figure 6.1 presents some of these criteria, which include the monthly income of applicant and his/her partner, their willingness to save money, and their commitment to participate in training sessions and workshops. Only those with higher incomes, with more savings (and willingness to save) and who always attended the trainings and workshops organised by Dutch Hospitality were likely to be selected. Furthermore, because the houses on offer were not free, access to Dutch Hospitality housing was limited only to households capable of paying housing loans. All the interviewees from the other NGOs complained about the difficulty of getting into the Dutch Hospitality programme. A respondent from Houses4Humanity shared his sentiments: "That housing is not for the poor. We cannot afford such expensive housing loans" (Female, personal interview, May 18, 2018).

Figure 6. 1: Selection Criteria to get into Dutch Hospitality Housing Programme

Source: Author (2018)

The second theme revolves around the preference given to the friends and political allies of the local politicians. Two employees of Dutch Hospitality talked about instances in which households were referred to them by local politicians who did not necessarily meet the national requirements for resettlement or who had houses that were at risk of flooding. One of the employees of Dutch Hospitality recounted how a local politician requested that some of his employees who were not affected by the flood project be accommodated in their housing project. Although the NGO employee initially did not want to accede to this request, she eventually had to find a compromise

for the sake of their relationship. The government also used "letters of endorsement" sent to the NGOs in order to foster better collaboration between their offices "for the common good of their people" (see Figure 6.2). However, the NGO employees felt they were being strongarmed by local officials. One NGO employee felt insulted by these requests, but she eventually "… learned to give and take. It's the government's land anyway. We only build the houses. So, in the end, we learned to bargain and to compromise. (Female, Dutch Hospitality official, personal interview, May 11, 2018).

Figure 6. 2: An endorsement letter from a local politician

Source: Author (2018)

The practice of accommodating political allies caught the attention of the local media. In 2017, ICUPAO was mired in controversy as some of its past officials reportedly awarded houses to their own relatives, dummies (i.e. fictitious names or unqualified individuals such as family members), and non-city residents, in direct violation of the Republic Act 7279 and the terms of the Resettlement Action Plan (Delos Santos, 2017a). In response, the city government undertook a review and charged the officials with "gross inexcusable negligence" (Ibid). The city administrator then blamed ICUPAO's lack of permanent staff and claimed that their contracts "expired monthly and this makes their accountability tenuous" (Tayona, 2018). During my fieldwork, there was no ICUPAO coordinator and only three of its thirty-five staff were permanent employees. The city government eventually ordered a stop to the field inspections of ICUPAO and employed

independent experts to conduct the validation. They also reviewed the households selected by ICUPAO and discovered a significant number did not follow the department's formal application processes. Consequently, the city government repossessed the houses of 29 recipients and as of March 2017 were in the process of trying to repossess another 50 houses (Delos Santos, 2017b).

The third theme reflects the resettlers' own confusion about how the selection process worked in the resettlement site. All the interviewees who were *not* resettled by Dutch Hospitality thought that selection mechanisms for obtaining new housing were opaque and confusing. A respondent from Care Foundation explained:

> "It was very difficult to get into that housing program [Dutch Hospitality]. Because the units were very limited, only the 'deserving' ones were accommodated. I am not sure how they determined that as we were all equally affected by the project anyway" (Male, personal interview, May 16, 2018).

One of the officials in charge of relocation was surprisingly open about the lack of transparency in the resettlement selection. He shared: "I don't have … a basis to say that all of them (resettlers) are qualified to be a beneficiary. Some of them were randomly and uncarefully placed in resettlement sites without proper validation" (Male, personal interview, May 7, 2018). Meanwhile, two of the respondents from Dutch Hospitality talked about the importance of knowing someone in power. One of the respondents admitted that the recommendations he received from his friends at the local government was very helpful to his application:

> "To be honest, it's not just what you know, but who you know. If you know people from the government, they will give you recommendations… After being involved in a number of government projects, I already had the connections, and that's why I got this house" (Male, resettler under the Dutch Hospitality NGO, personal interview, May 13, 2018).

This comment demonstrates that a person could be referred to Dutch Hospitality if they knew the right people, and the right people tended to be politicians in the local government.

In Tambaliza, Table 6.7 shows that opportunities to participate and influence decision-making have been elusive for some of the residents in Tambaliza. Statistically significant differences in perceptions to procedural justice are evident in their responses. In particular, only a little more than a third of the survey respondents from Botlog (35%) and less than half from Punting (46%) agreed or strongly agreed that they were able to take part and participate in the adaptation programmes implemented by the NGOs. In contrast, 70% of the respondents from Bat-os, 75% from Pasil, 80% from Banban and 85.7% from Proper felt that they were able to participate and influence the

adaptation projects (χ^2=14.84). Fewer respondents from Botlog (33.5%) and Punting (40%) also felt that their participation will help enact changes in the strategies and implementation processes of the NGOs. These numbers are significantly lower than the rest of the population as more than 80% of the respondents from Guinmisahan, Proper, Banban and Bat-os perceived that the NGOs have taken their suggestions into account and have made appropriate actions (χ^2=13.60). Moreover, a significantly lower percentage of respondents from Botlog (30%) and Punting (40%) argue that the NGOs listened to their community members when planning adaptation programmes. In contrast, more than 60% of the respondents from Pasil, Guinmisahan, Bat-os, Banban and Proper felt the same way (χ^2=15.06). These findings demonstrate that perceptions of procedural justice are uneven in Tambaliza: the residents of Botlog and Punting felt that they lack the capability to participate meaningfully in the planning and decision-making processes of the NGOs.

Table 6. 7: Perceptions of procedural justice in Tambaliza

Statement/ Question	% of Respondents who Agree or Strongly Agree							χ^2
	Proper (n=35)	Banban (n=10)	Bat-os (n=10)	Botlog (n=8)	Guinmisahan (n=10)	Pasil (n=12)	Punting (n=15)	
I feel that I was able to take part and participate in the adaptation programmes.	85.7%	80.0%	70.0%	35.0%	60.0%	75.0%	46.0%	**14.84****
The NGOs have made/ are going to make changes in their strategies because of the action taken by my community.	85.7%	90.0%	90.0%	33.5%	80.0%	58.3%	40.0%	**13.60****
I feel that the NGOs listened to the people in our community as they craft climate adaptation projects.	88.6%	80.0%	70.0%	30.0%	70.0%	60.0%	40.0%	**15.06***

* p < 0.05;   ** p < 0.001
Question: *Think about your experience with the NGO' adaptation programmes. To what extent do you agree or disagree with the following statements?*
Source: Author's survey (2018)

To explore how community members participate in public discussions, I organised two participatory workshops aimed at getting to know the residents and their experiences with the adaptation programmes. While I prepared the meeting agenda, the NGO officials offered to oversee gathering participants. Even if the only incentive provided was free food, the participants were nevertheless willing to take part in the workshops. The NGO officials also offered to secure a venue: the community hall at sitio Proper where meetings were usually held by the NGOs to discuss their climate change adaptation projects. This is the 'ideal' venue for them since it is at the centre of the island and is also a short walk from where most of the participants reside. As expected, majority of the workshop participants were from the nearby sitios of Proper (n=6), Banban (n=4), and Guinmisahan (n=3) (Figure 6.3). In contrast, residents of Botlog (n=0) and Punting (n=1) were underrepresented because bringing them to the venue requires additional travel arrangements such

as securing boat and motorcycle trips which incur additional costs. I noticed this disparity in attendance and raised this concern with one NGO official. She replied that "it is not uncommon to have few representatives from the two sitios because they are really far and our funding for meetings is limited" (Female, Sacred Aid UK, informal conversation, June 16, 2018).

Figure 6. 3: A snapshot of the sitios of the attendees

Source: Author (2018)

The NGO staff served as facilitators during the workshops. A number of participatory tools were used to encourage people to describe the major challenges the community faced as a consequence of the projects and to draw up potential solutions. One such activity is the issues matrix. Its objective is to capture the issues and problems that "are widely shared by the community as a real concern and explore how these matters relate to other issues" (McKinnon & McKinnon, 2010, p. 25). The workshop participants were asked to identify and explain the most pressing issues they were facing in their community. In a span of fifteen minutes, the workshop participants were able to identify fifteen issues. They were then asked to vote for their top three, which were then tallied by the NGO staff (Figure 6.4). During the discussions, I kept a distance from the participants and listened to what they were saying. I took down notes on the issues raised and the number of times each participant spoke up.

Figure 6. 4: The issues identified by the residents during the community consultation

Source: Author (2018)

After voting, the participants were then asked to explain their votes in a public setting. It was observed that the discussions were dominated by the residents of Proper and Banban. The average frequency count of the number of times a participant from Proper *(f=12)* and Banban *(f=10)* spoke outnumbered the participants from other sitios such as Punting *(f=3),* Bat-os *(f=3),* or Pasil *(f=2).* The top five issues identified by the group were: (1) financial (f=12), referring to a lack of income; (2) electricity (f=11), referring to the inadequate supply of electricity within their community; (3) livelihood (f=10), referring to the dearth of alternative sources of livelihood aside from fishing; (4) degradation of coral and mangroves (f=9), and (5) waste management (f=6), referring to the indiscriminate dumping of waste within the island. While the first three issues were shared by all sitios, the major problems identified by the residents of Botlog and Punting during the interviews, such as lack of potable water *(f=1)*, concrete footpaths *(f=2)* and substandard health services *(f=3)*, were paid little attention to. The participatory workshops thus demonstrated how a disparity in attendance can skew the discussion in favour of those who were able to participate. Because they were present, the residents of Proper, Banban, and Guinmisahan had the opportunity to voice their views and have some form of control over the flow of the discussion. On the other hand, Botlog and Punting were underrepresented and, therefore, its residents were unable to influence the flow and outcomes of discussions.

The interviews also revealed that the adaptation projects of the NGOs and local authorities often only addressed the needs of the economically better-off sitios. For instance, the interviewees from Botlog and Punting said that they were unable to capitalise on a number of adaptation interventions such as the livelihood diversification and infrastructure development measures. One interviewee

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said: "we have been demanding electricity for years, yet all we have now are these solar panels that are unable to last throughout the night." (Female, personal interview, June 14, 2018). On the other hand, when the interviewees from Proper or Banban requested climate-resilient housing and concrete footpaths they were quickly provided by the NGOs or the local government. As a result of not being heard, a few vulnerable households decided not to attend future meetings as they felt their participation would not make any difference. A respondent from Punting explained: "To be honest, sometimes I feel like they are just a waste of time. I would rather go to the sea and fish" (Male, personal interview, June 17, 2018). Other interviewees described the consultations with the local authorities as tokenistic. A British4Environment staff admitted: "we have certainly heard instances where people attend for the giveaways such as food or cash" (Female, personal interview, June 13, 2018). Hence, even if attendance looks good on paper, marginalised groups are still unable to influence decision-making and advance their own interests.

In spite of the government's commitment to "open up opportunities for *all*" as stated in its mission statement (Iloilo City Government, 2015a, p. 4), it appears that the sitios in better condition are more privileged than others. This exclusion of the less powerful in favour of the more powerful minority observed in both San Isidro and Tambaliza echoes the arguments of other scholars in different contexts (Nagoda & Nightingale, 2017; Rogers & Xue, 2015; Wilmsen et al., 2011). As a result, those who benefit most from the projects are often the same people: those who are always present in community activities, are part of POs, and have good political and social connections. Adger (2006b, p. 172) warns that "vulnerability to environmental change does not exist in isolation from the wider political economy of resource use." Even if participation and inclusion are written into program objectives, politics, entrenched social hierarchies, and cultural beliefs and expectations often work to exclude the most vulnerable from positions of influence. This is especially problematic when the benefits intended for the marginalised are directed to a smaller group of relatively better-off households.

6.5.3 Procedural Justice 2 (Empowerment)

Closely related to recognition and participation and, therefore, equally important to justice is empowerment. Empowerment is giving people the means of "ensuring... that every party has the necessary knowledge and skills for actively taking part in planning, decision-making, and governance" Grasso (2010a, p. 62). In the context of this study, power is distributed through the expansion of adaptation support to those with little financial and institutional capacity. Empowerment through adaptation support processes is also one of the four roadmaps towards justice in climate change adaptation proposed by Shi et al. (2016). As such, empowerment is important because "successful adaptation depends on available resources and peoples' capacities to act" (Nalau et al., 2015, p. 95).

According to Allen (2006), one way to empower communities is through community-based disaster preparedness programmes. In this study, empowerment is hence operationalised as involvement in trainings and capacity building activities that sought to raise awareness and preparedness to typhoons and other climate-related hazards. The surveys explored whether the residents felt that they were provided with information on resettlement (San Isidro) and climate change (Tambaliza) and whether they were involved in training sessions, workshops, and other capacity-building activities.

In San Isidro, those under Dutch Hospitality expressed greater satisfaction about the extent of their involvement in the planning of their relocation compared to those resettled by the other NGOs (χ^2=17.79). More specifically, 94.4% of the respondents from Dutch Hospitality felt that they were empowered enough to participate in planning for their relocation, significantly higher than respondents from Houses4Humanity (86.7%), Care Foundation (82.9%) and Concern Italy (80.3%). In addition, more respondents from Dutch Hospitality indicated that they were able to participate in training sessions and capacity-building activities than respondents involved with the other NGOs (χ^2=13.15). Hence while almost all of the respondents from Dutch Hospitality (93.5%) reported that they attended capacity-building sessions, only 82.4% of respondents from Concern Italy, 83.2% of respondents from Care Foundation and 85.1% from Houses4Humanity felt the same way. These findings indicate that the residents of Dutch Hospitality perceived their resettlement to be more empowering compared to the other residents.

Table 6. 8: San Isidro Residents' Perception on the 'Empowerment' Criterion of Procedural Justice

Statement/question	% of Respondents who Agree or Strongly Agree				χ^2
	Dutch Hosp. (N = 46)	Concern Italy (N = 61)	Houses 4 Humanity (N = 60)	Care Found. (N = 33)	
I have participated in activities that involved planning for relocation.	94.4%	80.3%	86.7%	82.9%	17.79**
I have participated in trainings and capacity-building sessions.	93.5%	82.4%	85.1%	83.2%	13.15*

* p < 0.05;   ** p < 0.001

Question: *Think about your relocation experience. To what extent do you agree or disagree with the following statements?*

Source: Author's survey (2018)

The interviews uncovered why residents of Dutch Hospitality seem to be happier with the capacity-building activities than respondents involved with the other NGOs. Thematic analysis revealed that all of those resettled by Dutch Hospitality were happy with the amount and quality of the training

sessions they received. A typical response was: "We were involved every step of the way. They even introduced us to engineers, carpenters, and architects who equipped us with knowledge and skills that we needed to build our homes" (Female, personal communication, May 25, 2018). Furthermore, all respondents from Dutch Hospitality attended workshops and training sessions to learn about housing design and laws related to housing. They were taught how to do financial estimates to procure housing materials and introduced to the stages of housing construction. They were also involved in the livelihood program. They contributed a small amount of savings toward a revolving community fund for emergencies, small business loans, and loans for renovations. Another respondent remarked: "we are also able to save up some money so that we can finance our extra expenses like our children's school allowance or housing renovation" (Dutch Hospitality, personal interview, May 25, 2018).

On the other hand, the residents from other sitios complained about a lack of training and capacity-building when they were relocated. All respondents from Concern Italy and Houses4Humanity, together with half of the respondents from Care Foundation, claimed that they received very little in the way of capacity-building assistance from the government or the NGOs to bolster their climate resilience or improve their post-resettlement outcomes. A respondent from Concern Italy shared: "After the turn-over ceremony of the resettlement units, we were left on our own. We only get to see the government officials during elections season when they campaign for a position" (Female, personal interview, May 26, 2018). The two respondents from Care Foundation also admitted that they intentionally missed the few training sessions organised by the local government. One of them explained why: "these were merely publicity stunts which some of them (local politicians) use to make themselves known. We don't really learn anything new" (Female, Care Foundation, personal interview, May 20, 2018). She devoted her time instead to working overtime for extra income.

In Tambaliza, capacity building activities are conducted by the NGOs in partnership with the local officials and POs. Based on the survey, there are no significant differences in peoples' perceptions of their involvement in the planning and capacity building initiatives. The residents perceived their participation in planning and capacity building sessions to be satisfactory, irrespective of the sitios that they lived in. This is supported by the findings of the interviews with the residents and NGO staff. All of the NGO staff members that were interviewed claimed that disaster preparedness trainings and workshops targeted marginalised and far away sitios like Botlog and Punting. At the same time, all the respondents from Botlog (n=3) and Punting (n=2) talked about experiencing "preferential treatment" for the disaster training. Respondents talking about the following training activities: emergency response, basic life support, early warning, disaster simulation, and water search and rescue. One respondent from Botlog said: "my family was ferried and brought to the evacuation centre in sitio Proper. They (government) want to make sure that we know what to do in case another massive typhoon hit us again' (Female, personal interview, June 14, 2018). Another

respondent from Punting shared how thankful she is for the training sessions and claimed they had helped her prepare her community for Typhoon Haiyan.

Scholars argue that adaptive capacity is enhanced through increased flows of information and knowledge facilitated by institutions and other governance structures (Eakin & Lemos, 2006; Engle & Lemos, 2010). Such interventions will need to be carried out across different scales and sectors around the world in coming decades (Adger et al., 2005b). However, when mechanisms to enhance people's adaptive capacity are selective and unevenly distributed, maladaptation and disempowerment may ensue (Allen, 2006; Barnett & O'Neill, 2012; Nelson & Finan, 2009). This was evident in San Isidro, where the sharing of knowledge, information and skills was limited to a select few. On the other hand, residents of Tambaliza, especially from the marginalised sitios, claimed that they felt involved in disaster preparations and believed that the training sessions were instrumental in helping them prepare for Typhoon Haiyan.

6.6 Discussion

This chapter has shown that a more thorough understanding of climate change adaptation is made possible through a multidimensional conception of justice that takes into account issues of recognition and participation on top of distribution. It concurs with recent justice scholars such as Schlosberg (2007), Fraser (2010), and Martin et al. (2013), who argue that in this age of globalisation inquiry into the structural causes of maldistribution is needed, and that focusing on distribution alone is not sufficient to address the underlying causes of unjust adaptation intervention. By exploring people's experiences of recognition and participation in the adaptation interventions of the NGOs in Iloilo, the chapter highlights the importance of procedural justice − how decisions are made and who is included in these processes (Martin et al., 2014) – and recognitional justice − whose voices and views are privileged and respected (Walker, 2012). It argues that focusing on political processes, together with the conditions that undermine social recognition, can help explain and address the inequitable distribution of the benefits and burdens of adaptation interventions. The findings in this chapter help explain the distributive injustices demonstrated in Chapter 5: without recognition and meaningful participation, distributive justice is not possible.

The findings in this chapter demonstrate that a lack of recognition and meaningful participation are critical drivers of distributive injustice. In both study sites, respondents reported large differences in the degree to which they felt they had participated in the adaptation processes. In San Isidro, of the four NGOs, those under the Dutch Hospitality recorded higher degrees of participation (invitations to meetings, involvement in planning, and consideration of their views in decision making) compared to those from other NGOs. The resettlement process also proved to be highly

selective. Households with political connections and the financial assets to service loans and contribute to a micro-credit scheme were more likely to be selected for the superior housing programmes. Moreover, the residents resettled by the other NGOs complained about being included in very few capacity-building initiatives to enhance their climate resilience and improve their post-resettlement livelihoods. As a result, poorer households tended to receive lower quality housing that were not resilient to the impacts of climate change, poorer infrastructure services, and experienced lower income growth post-resettlement than the wealthier households allocated to Dutch Hospitality.

In a similar way, the people who were able to meaningfully engage in decision making and planning processes in Tambaliza tended to be those from the wealthier sitios such as Proper and Banban. The marginalised sitios such as Botlog and Punting were often underrepresented at public meetings, making it harder for them to shape adaptation processes and decisions. Moreover, power and politics played a major role in determining whose voices were recognised and listened to and, eventually, whose interests were served by the adaptation projects. Barangay officials prioritised their own constituents, family, and friends over the most vulnerable members in their barangay, both in terms of incomes and their exposure to climate risk. Some barangay officials filtered adaptation projects to their own areas to shore up their political support in the next elections. It is, therefore, no coincidence that adaptation interventions were disproportionately located in the areas where the local officials resided, rather than in areas where the need for adaptation interventions was the greatest. In spite of these issues, the interviews with Tambaliza residents present a small glimmer of hope: they felt significantly involved in the disaster preparation measures and believed the training sessions were instrumental in helping them prepare for future climate-related hazards.

This chapter demonstrates how the noble objectives of the NGOs and government to foster voice, participation, and empowerment were diluted by politics, donor expectations, and cultural expectations. In both case studies, local politics played a big role in determining who benefitted from the projects and who was ignored and excluded. In San Isidro, the capabilities of people with political connections were enhanced as they were relegated to better quality houses whereas those without connections were directed to the lower quality ones. In Tambaliza, local authorities played favourites, giving priority to their own constituents and political allies. These political dynamics in both sites led to the stabilisation of the status quo, or worse, an increase in intra-community inequalities. This is evidenced, for instance, by the huge disparity in income: residents from Dutch Hospitality have higher incomes vis-à-vis the residents from other NGOs in San Isidro, while the residents of Botlog and Punting have lower incomes compared to the other residents in Tambaliza. These findings echo those of previous studies, which argue that so long as adaptation is treated as a technocratic endeavour that stands outside of politics, it will continue to subverted by local power structures, potentially exacerbating impoverishment and maladaptation rather than preventing it (Agrawal & Gupta, 2005; Ribot, 2014; Taylor, 2014).

Second, donor expectations shaped the NGOs' selection processes in favour of particular sitios and people within these sitios. Scholars warn that what is taken to be local needs can be a reflection of the preferences of donors to which the implementing agencies are beholden (Kapoor, 2005; Mosse, 2001, 2005). In Tambaliza, interviews with some NGO staff revealed that they choose sitios that had organised groups, active residents, and active local politicians (motivated in part by their desire to sure up their electoral support). This created a dynamic in which the NGOs tended to 'bet on the strong'; a practice of concentrating resources and help in areas with better existing conditions in order to showcase and demonstrate success (Smith, 2009). This dynamic has also been observed in other contexts in which local officials have significant power to influence what areas and groups receive externally-funded interventions (Ahlers & Schubert, 2013; O' Brien & Li, 1999; Rogers & Xue, 2015). Rogers and Xue (2015) argue that this practice is problematic because it amplifies existing inequalities and does little to address people's vulnerability.

Third, the findings demonstrate how cultural norms can distort the allocation of adaptation resources. In Filipino culture, family and kinship ties are regarded as having the highest value in society (Church, 1986). According to Mendez (1984), the good of the family always takes precedence over everything else. In a similar way, Jocano (1997) argues that Filipinos give a higher premium to the interests of their family members than to the interests of the community. This is because Filipinos place a high value on harmony and smooth interpersonal relationships (Lee-Chua, 1997). Consequently, Filipino family members are morally obligated to support each other socially, emotionally, and financially (Santiago, 2000). In a country where welfare services are limited, the Filipino family has been described as "the most able social welfare agency" (Blust & Scheidt, 1988, p. 93).It is therefore not surprising that some local officials in Iloilo directed the NGOs to help their family members instead of those most in need in their communities. International NGOs must take account of these cultural norms when designing their programmes to avoid unjust and maladaptive outcomes.

The findings of this chapter demonstrate how difficult it is to design and implement adaptation interventions that are inclusive, participatory, and empowering to *all* community members, especially the most socially and economically marginalised. Little pockets of participatory 'success' were observed in the case study, like the implementation of capacity building activities in Tambaliza. This does not guarantee, however, that the herculean task of designing and implementing adaptation projects will end up truly participatory and recognise, empower and benefit all members of the community in a just manner. This is because no matter how well-meaning the objectives and intentions of the implementing agencies are on paper, they are enmeshed in a broader political economy that forces them to negotiate with self-interested local politicians, appease funding bodies, and respect local cultural norms, such as kinship ties and reciprocity. As a result, well-intentioned adaptation projects can perpetuate the status quo, or worse, exacerbate the

vulnerability of already marginalised households. Similar patterns have been observed with development efforts in northern Thailand (McKinnon, 2011) , Lesotho (Ferguson, 1994), or India (Mosse, 2005). And so as long as adaptation is conceptualised as a perfectible technocratic process, amenable to 'expert-driven solutions', maladaptation is likely to continue. Recognising these big challenges, governments and NGOs must nonetheless redouble their efforts to ensure future projects are inclusive and empowering and give local people a meaningful say in planning and implementing adaptation projects. Meanwhile, they must guard against, "…engaging in constant rounds of critiquing established practice, finding fault, proposing new methods and approaches, and when these solutions fail, start all over again" (McKinnon (2011, p. 172). This is a difficult balancing act, indeed.

Clearly, the mainstream approach needs to improve its theories and practices if it is to achieve just outcomes in the coming decades. But these challenges also raise the question: are there alternatives ways of conceptualising and pursuing adaptation that eschew the developmentalist logic of the mainstream approach and sidestep many of the problems it generates? The next chapter provides a glimpse of how this may be possible by utilising a postdevelopment approach to think about climate change adaptation.

Chapter 7: Uncovering Locally-Based and Diverse Adaptation Practices in Iloilo through a Postdevelopment Lens

7.1 Introduction

Chapters 5 and 6 have shown the importance of a multifaceted conceptualisation of justice. Just adaptation to climate change cannot be conceived in terms of distributive dimensions alone. Issues of recognition and participation need to be taken into consideration so that the underlying causes of injustice can be understood. A combination of all three dimensions of justice provides a more comprehensive and nuanced picture of what just adaptation can and should entail. Moreover, the previous two chapters have demonstrated how the capabilities approach pioneered by Sen (2009) and Nussbaum (2000) can be integrated with this multifaceted conception of justice and used to analyse the processes and outcomes of real-world adaptation interventions. The framework is not only able to capture the distributions of vulnerability and inequality resulting from the interventions, it can also highlight how politics and power relations embedded within adaptation processes bring about the inequitable distribution of benefits and burdens of interventions.

While these sets of concepts and tools are helpful in revealing the injustices that result from adaptation interventions, they do not provide insights into possible alternatives to the mainstream approach to pursuing adaptation. The search for alternatives is critical because the adaptation industry shows no signs of slowing down. According to O'Brien (2017, p. 1), "realising alternative futures that are equitable and sustainable is the key challenge for this century, and will include both adaptation and conscious social transformations." Given the complex entanglement between the limitations of adaptation on the one hand and its necessity on the other, how do we move forward? Using a postdevelopment lens, this chapter explores innovative and diverse ways of planning and pursuing adaptation. It explores experimental and heterodox approaches, and brings to the fore possible alternatives that are potentially more distributionally, procedurally and recognitionally just than the mainstream (developmentalist) approach.

The chapter is organised as follows. Section 7.2 explores the core insights and weaknesses of postdevelopment theory. Section 7.3 differentiates postdevelopment theory from anti-development or alternative development. Sections 7.4 to 7.6 present the main empirical findings from the two case studies in Iloilo. This discussion is structured in accordance with three areas of key concern to postdevelopment theorists − politics, economy and knowledge. Section 7.7 concludes by summarising the main findings and discussing what a postdevelopment approach to adaptation might look like.

7.2 The Core Ideas of Postdevelopment Theory

Since the 1990s, postdevelopment scholars have criticised development as a product of Eurocentric ideology and an imperialist project (Rahnema & Bawtree, 1997). They have taken issue with the way development theory and practice defines 'non-Western' and 'non-modern' ways of life as inferior and in need of 'development' (Esteva, 1992; Sachs, 1999). These scholars have emphasised that the discourses of development have actual material consequences, which perpetuate the very inequality they seek to address. As visions of development constructed in the minority world are forced upon the majority world through mechanisms of power, all other forms of being and social existence are consequently devalued and undermined (Sachs, 1992). Other scholars portray development as a form of neo-imperialism that reinforces the extractive power of the Western economic, political and knowledge systems (Escobar, 1995; Esteva, 1992). Postdevelopment scholars, therefore, often portray 'development' as a homogenising process that stunts diversity and multiplicity.

A foundational text in the postdevelopment literature is Escobar's (1995) *Encountering Development: The Making and Unmaking of the Third World,* which provides a scathing critique of the development industry. Escobar contends that the "development discourse… has created an extremely efficient apparatus for producing knowledge about, and the exercise of power over, the Third World" (Escobar, 1995, p. 9). He also identifies the following key hallmarks of postdevelopment theory:

> "They are interested not in development alternatives but in alternatives to development…
> They share an interest in local culture and knowledge; a critical stance towards established
> scientific discourses; and the defence and promotion of localised, pluralistic grassroots
> movements" (Escobar, 1995, p. 215)

Escobar (1995) calls for a future dominated by local concerns, and a politics articulated through grassroots communities and local social movements. Building of the insights of Escobar, postdevelopment scholars tend to be wary of top-down approaches and seek out a world where power resides at the local level inside communities (Esteva & Prakash, 1997; Rahnema & Bawtree, 1997). McKinnon (2008) argues highlights that community members are not passive victims of development. Rather, they shape, influence and manipulate processes in locally significant ways.

Escobar also argues that development has marginalised other economic systems, calling for the "Western economy as a system of production, power and signification" to be displaced by "different subjectivities and hybrid, creative, and autonomous alternatives to it" (Escobar, 1995, p. 217). This critique continues to inform postdevelopment thinking. For instance, Gibson-Graham (1996) opposes the dominant 'capitalocentric' discourse in which other forms of economy are understood primarily with reference to capitalism. They advocate for a broader conception of the economy that encompasses, for instance, non-market transactions and unpaid labour. Other economic

geographers have started integrating local practices into mainstream economic models and advocate for community-based, sustainable and indigenous-oriented movements (Bebbington et al., 2008; Laurie et al., 2005).

Escobar also critiques the idea that Western science is the only source of knowledge and truth. Postdevelopment scholars such as Alvares (1992) or Rahnema (1997) refer to non-Western philosophies of Confucius, Lao Tzu, or Gandhi in their manuscripts. De Sousa Santos (2004) also questions how modern science has turned out to be the sole criteria of truth and aesthetic quality. Later on, he suggests for the pursuit of a sociology of absences which recognises existing knowledges and practices that have been rendered invisible by the dominant modernist rationality (De Sousa Santos, 2014).

In his survey of the postdevelopment literature, Ziai (2016, p. 73) summarises the core arguments of postdevelopment as "movements and communities reclaiming their lives in different spheres: reclaiming politics vis-à-vis the state, reclaiming the economy vis-à-vis capitalism, and reclaiming knowledge vis-à-vis science." Ziai identifies the three areas of concern for postdevelopment theory as: (1) politics through the support for local grassroots movements that are independent from the state, (2) economy through the diverse types of economic activities that exist beneath the veneer of the capitalist system, and (3) knowledge through a re-valorisation of the multiple ways of knowing. Postdevelopment scholars have made substantial contributions in each of these three areas (see Table 7.1). These three areas provide the conceptual framework for the analysis undertaking in Sections 7.4-7.6 of this chapter.

Table 7. 1: Three Areas of Discussion in Postdevelopment Theory

Politics e.g. (Esteva & Prakash, 2014; McGregor, 2007; McKinnon, 2007, 2008, 2011)	Economy e.g. (Gibson-Graham, 2008; Gibson-Graham et al., 2013; Roelvink et al., 2015; St. Martin, 2001)	Knowledge e.g. (De Sousa Santos, 2014; Escobar, 2018; Kothari et al., 2019)
Self-Rule Self-Reliance Autonomy Development-as-Politics	Sharing Reciprocity Commons Solidarity Unpaid Labour	Diversity Pluriversality Traditional Indigenous

The first main topic of interest in the postdevelopment literature is the search for and articulation of alternative models of politics vis-à-vis centralised authorities (Ziai, 2016). Drawing inspiration from poststructuralist analysis of power as fluid and dynamic, it rejects the notion of power as consolidated in certain institutions or agencies. Instead, power is conceptualised as partial, shifting, and consisting of multiple modalities (Allen, 2003; Gibson-Graham, 1996; Rose, 1999). These scholars see power not only as an oppressive force but as a means to build agency and capacity for positive action. In addition, Ziai (2007) argues that a postdevelopment approach not only focuses

on the negative and oppressive aspects of the exercise of power but also on its productive and positive dimensions. McKinnon's (2011) account of the political interventions by a Highland NGO (HNGO) in Northern Thailand is an example of recognising the positive potential of reframing what power is and what power can do. The highlanders, there, had come to be known as problematic people in need of development assistance. McKinnon illustrates how the HNGO was able to exploit openings in the local power structure and, thereby, help the highlanders achieve recognition, citizenship and, ultimately, a voice within the within the Thai political system. Power, in this example, was exercised in a positive and productive way to exploit and reshape existing political power structures and empower marginalised people.

The second main topic of interest is the economy. A postdevelopment approach embraces multiplicity and supports the view that the diverse ways of knowing and being in the world can provide unexpected yet innovative solutions to injustice (De Sousa Santos, 2004; Gibson-Graham, 2005). Postdevelopment scholars challenge the dominant assumptions that capitalist economic growth is the sole catalyst for poverty alleviation and development. They do so by pointing to the multitude of non-capitalist economic practices and relations that people participate in to survive and prosper, such as gift giving, unpaid labour, barter and alternative currency systems (Cameron & Gibson-Graham, 2003; Gibson-Graham et al., 2013). In uncovering diverse community economies, postdevelopment scholars seek to foster a more hopeful vision of development that moves beyond the goal of sparking industrial growth and embraces multiple economic modes that sustain livelihoods with less environmental and social harm. Making non-capitalist activities more visible opens up spaces and new opportunities for realising alternative futures that are more sustainable and just (Gibson-Graham et al., 2013). According to McGregor (2009, p. 1698), a postdevelopment approach "opens up a much wider range of discussions and possibilities based on ethical decision-making, cultural strengths and community enterprises".

The third main topic of discussion is knowledge. Postdevelopment draws from poststructural ideas to destabilise the knowledges, languages and truths of mainstream development processes. Instead of privileging only one set of knowledge, a postdevelopment approach fosters a multiplicity of knowledge and highlights its potential to provide innovative and equitable solutions to poverty and injustice. Postdevelopment scholars highlight the need to recover what has been rendered non-existent and illegitimate by dominant modes of thought (De Sousa Santos, 2014; Gibson et al., 2018; Gibson-Graham, 2005). As such, postdevelopment research studies the growing influence of local and traditional knowledge systems, especially in places where the modernist approaches to development have proven futile. Postdevelopment scholars (De Sousa Santos, 2004; De Sousa Santos, 2014; Simon, 1998) emphasise the need to recognise and value the forms of knowledges that have been made invisible by modern science and its notions of rationality. According to De Sousa Santos (2004), modernism and high culture have produced forms of 'non-existence' or 'non-

credibility' of other forms of being and knowing. In response, he calls for a "sociology of absences", arguing that offering alternatives to hegemonic discourses creates "the conditions to enlarge the field of credible experiences and thus widens the possibilities for social experimentation" (De Sousa Santos, 2004, p. 239). Likewise, Kothari et al. (2019) calls for 'knowledge democracy' and the need to respect the plurality of ideas and ideologies. One example of the productive influence of alternative forms of knowledge is Parnwell's (2007) case study in northeast Thailand where he demonstrated how the residents have confronted the pernicious effects of modernisation by reviving Buddhist values and traditional Thai culture to rebuild social capital.

These three areas of critical interest to postdevelopment scholars – politics, economy and knowledge – are used to structure the analysis of the empirical data presented in Section 7.4-7.6. But first, Section 7.3. distinguishes the postdevelopment approach from the anti-development and alternative development approaches.

7.3 Postdevelopment vis-à-vis Anti-Development and Alternative Development

Critical scholars argue that most contemporary adaptation scholarship adopts a hazards perspective, which frames interventions in a technocratic, codified and apolitical manner (Mikulewicz, 2018; Taylor, 2014). Leading international institutions, like the World Bank, have integrated adaptation into their existing developmentalist agendas (Mikulewicz & Taylor, 2020). Moreover, most of the guidelines for the evaluation of adaptation programmes have also been framed in terms of what institutions could do better (Lamhauge et al., 2012). Such adaptation frameworks, often rooted in techno-managerialism, promote technological and institutional solutions. They can impede diversity and ingenuity as they fail to appreciate other possible ways of adapting to climate change.

Postdevelopment uses the tools of postcolonialism and poststructuralism in order "to locate alternative ways of doing development that build upon critical histories of development and seek new… ways of doing development" (McKinnon, 2008, p. 289). It draws on postcolonial analysis to explore how colonial relations of oppression have been re-legitimised through the contemporary language and practice of development (Simon, 2006). Postcolonial analyses reveal the manner in which local knowledges and livelihoods have been delegitimised and rendered invisible by the dominance of mainstream adaptation policies. Furthermore, postdevelopment makes use of poststructural perspectives to destabilise the taken-for-granted truths, knowledges and languages of development (McGregor, 2009). Gibson-Graham (2006, p. 4) characterise the postdevelopment approach as "weak theory" that embraces uncertainty and "refuses reductiveness and confident finality". In doing so, postdevelopment throws into question fixed 'truths' about what just adaptation is and how it can be achieved. It is a lens that looks for nuances, diversity and multiplicity instead of accepting a fixed vision of what just adaptation 'ought' to look like. Consequently, there

is no one-size-fits-all, modernist blueprint approach for just adaptation. Nevertheless, Ireland and McKinnon (2013, p. 161) argue that the lack of certainty "does not… doom us to inaction. Rather, what postdevelopment scholars are exploring is how to move ahead uneasily – without confidence that any particular approach is the 'right' one and with the knowledge that any development work is always already embedded in politics".

Gibson-Graham (2004, p. 411) identify a number of targets for the deconstructive project of postdevelopment. It is focused on "unhinging notions of development from the European experience of industrial growth and capitalist expansion; decentering conception of economy…; loosening the discursive grip of unilinear trajectories on narratives of change; and undermining the hierarchical valuations of culture, practices and economic sites". In spite of its deconstructive nature, postdevelopment is not anti-development. It does not fully reject the basic principles, norms, and languages of development. According to Gibson-Graham (2005, p. 6), "the challenge of postdevelopment is not to give up on development, nor to see all development practice – past, present and future, in wealthy and poor countries – as tainted, failed, retrogade". Likewise, while this thesis engages with adaptation in a critical manner, it by no means advocates opting out of adaptation. Given the inadequacy of global actions to mitigate the impacts of climate change, adaptation is more important than ever. This thesis argues for the importance and positive promise of adaptation as a project toward social justice and sustainability. The challenge is to imagine and implement adaptation differently so that it is more attuned to the needs and desires of the local communities.

Postdevelopment also differs from the alternative development movement of the 1980s. Alternative development, just like postdevelopment, advocates community led development (Chambers, 1994, 1997) and seeks to re-conceptualise development to better address the needs of the most vulnerable (Kothari & Minogue, 2002). Alternative development also values indigenous and local knowledges and perspectives, epitomised by the Indigenous Knowledge Asset-Based Community Development (ABCD) approach (Haines, 2009). In fact, Ireland and McKinnon (2013) argue that postdevelopment practices would not have been made possible without the groundwork laid by alternative development. However, one key difference is the tendency of alternative development to codify development practices so that they can be implemented universally. This universalising conception of development runs counter to the poststructuralist orientation of postdevelopment. Postdevelopment eschews universal standards and "undermines the certainty with which emancipatory actors are able to envision the end point of their interventions and the means by which to reach it" (McKinnon, 2007, p. 774). In the field of adaptation, a postdevelopment approach advocates for an open and uncertain approach; one that does not rely on blueprints or predictable pathways on what adaptation 'ought' to look like. Another key difference is alternative development seeks to improve institutional procedures by encouraging better participatory and grassroots

techniques, whereas postdevelopment attempts to liberate "oppressed imaginaries and alternative futures by delegitimising development, marginalising traditional development institutions and creating new spaces where unconventional pathways can be explored and enabled" (McGregor, 2009, p. 1695). Recent and emerging postdevelopment scholarship is now geared towards seeking out possibilities and opportunities in a range of socio-economic processes.

Dombroski (2015, p. 323) contends that the new generation of postdevelopment scholarship is moving towards "a mode of assembling", where real and practical alternative discourses and practices to development are increasingly being brought to the fore. There is a shift in tone from an angry collection of critiques that epitomises anti-development towards a tone of hope and possibility. Recent postdevelopment literature, "while being aware of the political complexities of development… proposes a new way of undertaking development that is substantially different, which can acknowledge the pervasive politics of development and find ways to create change in spite of it (McKinnon, 2011, p. 3). There is a shift from a focus on how development shapes people and place to uncovering how the actors themselves have the agency to influence development work and seek alternatives to it (McKinnon, 2008).

In the next three sections, a postdevelopment lens is used to identify innovative, community-led adaptation practices in the two case study areas. This analysis draws on the data gathered through the field interviews and field walks and is structured around the issues of politics, economics and knowledge (see Section 7.2). These sections uncover non-mainstream approaches to development and adaptation in the study areas. In doing so, it shows how a postdevelopment perspective can help developing countries like the Philippines – the target of international development agencies and subject to extreme weather events – identify and support local responses to climate change.

7.4. The Heterogeneity of Politics

This section investigates how people in the case study areas are exploiting available openings in politics to advance their goals for adaptation. It seeks to answer the question *"how are people engaging in political interventions in pursuit of alternative forms of adaptation?"* In San Isidro, the interviews revealed how the people resettled by Dutch Hospitality shaped their own resettlement processes. Instead of seeing themselves as victims of resettlement, they acted as conscious political actors and engaged directly with the government and other institutions to make their voices heard. They were able to do this through the support of the NGO and its wide network of urban poor community groups in the Philippines.

The two major themes that emerged from interviews with those resettled by Dutch Hospitality were "community mobilisation" and "state involvement and negotiation". The first theme — community mobilisation — refers to the strategy employed by Dutch Hospitality of engaging with its community members. Resettlers were involved in several community-driven processes in building their homes. The residents took part in every stage of the NGO's housing project from planning to construction. For instance, they attended several workshops on procurement of housing materials to help them buy quality housing materials at the most affordable rates. They were also taught about housing design and legislations. These trainings equipped them with knowledge and skills to engage with and negotiate their agendas with the government officials.

The second theme — state involvement and negotiation — refers to the experiences shared by Dutch Hospitality respondents in engaging with the local authorities about their relocation. Those resettled by Dutch Hospitality distinguished themselves from the other groups of resettlers by saying they did not resort to public protests to make sure their demands were heard. Instead, the Dutch Hospitality respondents argued that forging and cultivating relationships with the local government was the best way making sure their voices were heard. One respondent claimed:

> "Joining rallies will not get us far. It will only provoke our government officials if they see us shouting on the streets. We realise that the best way to solve problems is to sit down and talk things over. Consequently, we have developed a good relationship with the mayor's office. The officials have been very open in holding dialogues with us" (Female, personal communication, May 16, 2018).

Another respondent talked about the importance of deliberately engaging with state officials and forging productive partnerships with them. She explained that:

> "In order to become accountable and to participate in decision making, one should be part of the governance structure of the local government. If an individual approaches the government alone, he or she will simply be ignored. However, if a group is aware of its legal right [to participate], then the government pays attention." (Female, Dutch Hospitality official, personal interview, May 11, 2018).

All the interviewees talked about being invited to attend consultation meetings with the city government (Figure 7.1). A Dutch Hospitality official shared that the local community was able to sign a memorandum of agreement with the city government that recognised officially that they were partners in the implementation of the IFCP resettlement plan. As a result, the local community was able to access non-financial resources from the city government, such as heavy equipment, field personnel, and a full-time engineer, which helped them in the construction and overall development of the resettlement site. These things were cited as evidence of a growing reciprocal relationship

between the government, Dutch Hospitality and the local community, made possible through regular negotiations and dialogue. The interviewees said these relationships engendered a spirit of mutual respect.

Figure 7. 1: Meeting on the formulation of the Local Shelter Plan, attended by the city government and representatives from the Dutch Hospitality

Source: Dutch Hospitality (2008)

In Tambaliza, the two key themes pertaining to politics that emerged from the interviews were "Save Botlog Project" and "community-based disaster plan". These themes reflect two projects initiated by the local communities to advance their personal agendas and help one another. The first project was initiated in Botlog, one of the sitios that was severely affected by Typhoon Haiyan. The typhoon destroyed all 51 houses in the sitio and people were forced to evacuate to the mountains. All interview respondents from Botlog (n=3) talked about taking part in the "Save Botlog Project", a project initiated by their community leaders to re-build their damaged houses. One respondent from Botlog shared:

> "Without any organisational support or funding, it seemed like an impossible task. But our community leaders did not lose hope. We tapped the help of a few volunteers from other sitios and relied on social media alone for help. It miraculously worked!" (Female, personal interview, June 14, 2018).

She spoke about how the volunteers uploaded a video of Typhoon Haiyan's destruction in Botlog through the social media, and this caught the attention of several individuals (local and

international) who donated money online to help rebuild their houses. After a few weeks, the group was able to raise Php 170,000, which was more than enough to buy the materials to repair the 51 houses. They then made arrangements for these materials to be delivered to Botlog.

Another interviewee spoke about how news of the "Save Botlog Project" spread and more volunteers from outside Tambaliza helped out. She said, "Even the local government of Concepcion sent a few of their engineers and architects to help in the housing design and construction processes" (Female, personal interview, June 15, 2018). Thus, instead of rejecting the offer of the local government, the community leaders decided to work *with* them. As a sign of solidarity with the residents of Botlog, the local officials organised a two-day house building event called *'Bayanihan[7] sa Sitio Botlog'*, where volunteers from the other sitios of Tambaliza (and outside it) went to Botlog to help them rebuild their houses (see Figure 7.2). In just over a month, all the efforts have paid off as the residents of Botlog were able to rebuild their houses.

Figure 7. 2: *'Bayanihan sa Sitio Botlog'* community event

Source: Save Botlog Project (2015)

The second theme − community-based disaster plan − pertains to the product of a series of workshops that involved discussions, negotiations, and planning for Tambaliza residents to better adapt to climate change. This is one of the many ways that community members collaborated with the state and external NGOs. The workshops were comprised of representatives from the local government, NGOs, and community members. They met fortnightly over a period of six months to accomplish a number of things. First, they created a socio-ecological profile of Tambaliza, which highlighted the various forms of assets, capital, ecosystem services, and stakeholders present in

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[7] Bayanihan is from the Tagalog word *bayani*, which means 'national hero/heroism'. The term bayanihan is a common term used across the Philippines which refers to the spirit of unity and cooperation to achieve a particular objective (Labonne & Chase, 2009).

their community. A respondent from Guinmisahan talked about the impact of this profile, stating, "it helped raise our awareness on the vast amount of physical, environmental, and human resources that we have which we previously have taken for granted" (Male, personal interview, June 20, 2018). The second outcome of workshops was a community risk profile, which identified and located the most vulnerable groups in the barangay. All three of the local officials interviewed shared that they found this profile extremely useful in determining who or which sitios to invite to their training workshops on disaster preparation. Third and ultimately, the community insights from the workshops, together with the socio-ecological and risk profiles, were compiled into a document called "Tambaliza Village Guide." This guide describes climate-related risks, people's responsibilities, evacuation routes and plans, the early warning system, contingency plans, and other information necessary for adapting to extreme weather events. The Safe Village Guide was eventually endorsed and accepted by the local government a few months later, and was then included into the official development plan of Tambaliza.

These examples from San Isidro and Tambaliza demonstrate how the residents were political agents with the power to shape and direct the processes of adaptation. They show the residents' ability to engage in negotiations in order to make some plans a reality (and others less of a reality). While the capabilities approach emphasises the role that politics play in hindering the capacity of vulnerable groups to achieve their goals, a postdevelopment lens does quite the opposite − it identifies new spaces and opportunities for alternative ways of being and dealing with politics. As McKinnon (2011, p. 3) points out, a postdevelopment approach can "acknowledge the pervasive politics of development and find ways to create change in spite of it". A postdevelopment lens shows how the residents of San Isidro and Tambaliza were active agents capable of advancing their own interests. Their political strategies not only helped build their adaptive capacities but it also helped direct much-needed resources and personnel towards projects that mattered to them.

7.5. The Diversity of the Economy

The deconstructive project of postdevelopment is also focused on challenging dominant assumptions that capitalist growth is the only way to achieve economic development. This section finds inspiration from Gibson-Graham et al. (2013) notion of 'diverse economies' that acknowledges the different forms of economic activities and innovations that people engage in. In questioning the assumed omnipotence of capitalism, Gibson-Graham et al. (2013) are not rejecting capitalist economic activities, rather, calling for a more comprehensive conceptualisation of the economy where capitalism is only one type of economic engagement among many others. They identify five types of economic activities: enterprise, labour, property, transactions, and finance. Based on the interviews with the residents in San Isidro and Tambaliza, there were two non-capitalist economic practices and relations that people draw on for their livelihoods: (1) non-

capitalist enterprises and (2) alternative finance. Gibson-Graham (2006) define non-capitalist enterprises as those in which the producers control their own rate of surplus production and distribution and where private accumulation of surplus is not their only core business. Examples of such enterprises include independent and self-employed producers. Meanwhile, alternative finance refers to financial arrangements that are not limited to mainstream markets like banks and brokerage firms. Examples include state banks, credit unions, microfinance, and community-based financial institutions.

Non-capitalist enterprises are common among the households resettled by Dutch Hospitality in San Isidro. Two interview respondents said they have extended their houses to engage in small income-generating activities such as *sari-sari* stores (a neighbourhood sundry store selling a variety of food and other goods), *ukay-ukay* (thrift store selling pre-loved apparels), and sidewalk food stalls selling *halo-halo* (frozen dessert made of beans, jackfruit, coconut, and shaved ice) (Figure 7.3). Another respondent shared that she would walk around the streets of the resettlement site on weekends hawking ice cream, bread, fruits, *taho* (sweetened soft tofu with tapioca pearls) and *balut* (fertilized duck eggs).

Two recurring themes − "business as hobby" and "support for other enterprises" – emerged from the interviews. All three interview respondents did not look to scale their businesses or to earn big profits. Instead, they saw their businesses as both a hobby and a part-time source of income. Moreover, they reported that they were content with selling to and serving their *suki* (a local term which refers to their regular customers who they have nurtured personal relationships with). The interviewees also spoke about the strong support they provided for one another's businesses. Despite the high number of similar *sari-sari* stores in the relocation site, the two respondents with such stores do not regard each other as competitors. Instead, they spoke about how they preferred to buy from each other's stores rather than go to large supermarkets outside the area. Two respondents also shared that they were able to sell their home-cooked meals in weekend mini-markets that are organised by the local government. They also said that these markets were open to all the residents of San Isidro, and that whatever they prepared always sold out. These non-capitalist enterprises not only enabled some of the households resettled by Dutch Hospitality to earn extra income, it also brought people together and fostered solidarity, mutual support, and a sense of community among them.

Figure 7. 3: One Dutch Hospitality resident selling *halo-halo* (shaved ice with fruits and beans) outside her house as a child looks on

Source: Author (2018)

The alternative finance scheme that the residents of San Isidro engaged in is the rotating savings and credit associations. These zero-interest funds are "constituted by members who each contribute savings which is then allocated to members of some community" (Safri & Madra, 2020, p. 342). In San Isidro, the savings program that those resettled by Dutch Hospitality are part of is called "KABALAKA" (Figure 7.4). During the interviews, Dutch Hospitality officials recognised that the poor in the Philippines often lack the regular income streams and collateral needed to borrow from the formal financial sector. However, rather than dismissing the idea of a bank or a financial institution as an exploitative system managed by capitalists, the NGO came up with its own financial scheme to provide financial services to local residents (Mitlin, 2008). Two themes emerged from the interviews with regards to these efforts − "accessibility" and "empowerment". All interviewees spoke about how easy and straightforward the membership process for this savings group was. One respondent said:

> "It is nothing like the banks. We were simply asked to form groups of 7
> to 10 people and to start depositing whatever amount we were willing to
> save. There was no need to either fill up any forms or submit any IDs. We
> were just given a savings booklet so we can monitor the amount that we
> were contributing." (Female, personal communication, May 16, 2018).

The interviewees also spoke about the sense of empowerment the savings scheme engendered. The three interviewees reported that their sense of security was strengthened by knowing that they can

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access funds in times of personal emergency. In addition, Dutch Hospitality requires all its members to contribute Php 40 every month, and this goes into a revolving fund which is used to finance community projects such as land purchase, site development, house construction, and support for the establishment of small enterprises. One local resident who was employed by Dutch Hospitality said that her involvement with the savings scheme empowered her to engage in transactions with private banking facilities, something which she had not been comfortable doing beforehand:

> "The first time that we went to a private bank, the bank employee almost ignored us when we enquired about opening an account. But when we showed the employee our plastic bag containing Php 600,000.00, he called his manager, they counted our money, and immediately opened an account for us*" (Female, NGO A official, personal interview, May 11, 2018).

Figure 7. 4: A booklet for KABALAKA, the savings program of Dutch Hospitality residents.
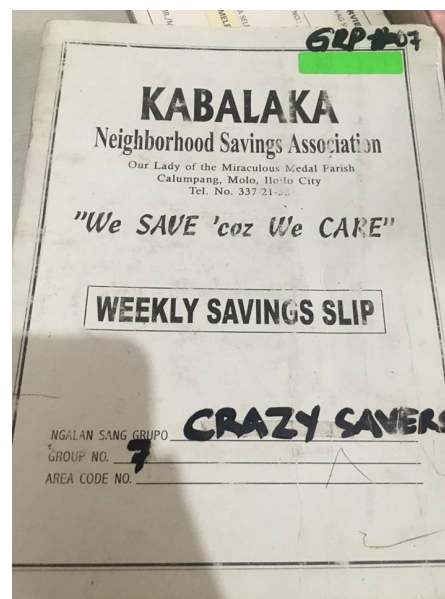
Source: Author (2018)

The residents of Tambaliza are heavily dependent on the market for their livelihoods and nutrition, especially because Concepcion (where Tambaliza is located) is regarded as one of the most productive small-scale fishing grounds in the Philippines (Ferrer, 2016; Hernando & Flores, 1981). Moreover, Concepcion is also strongly connected to international seafood markets. Iloilo fisherfolk export lobsters, crab, squid, sea cucumbers, and other high-value seafood product to Taiwan, China, and Japan (Perez et al., 2012). Nevertheless, despite this strong dependence on domestic and foreign markets, two key themes were articulated by interview respondents: (1) sharing and helping one another; and (2) protection of the commons. Interview respondents reported that they are frequently engaged in diverse forms of informal non-economic exchanges with one another. Two respondents from Botlog and two from Punting spoke about how they received gifts of fish, squid, and crabs

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from their neighbours when they had a large catch. Furthermore, three interview respondents (two from Proper and one from Banban) said they have freely offered some of their fuel to other fishermen in need. Among the three, the two respondents from Proper said that their acts of generosity were reciprocated by other fishermen by fixing their engines and gears, by getting tows at sea, or by securing their fishing boats on the shore during low tides. This demonstrates non-market forms are important to local livelihoods and are underpinned by the norms of reciprocity, which act as something of a local social safety net.

The second theme that emerged from the interviews was the need to protect the fishing commons. All interview respondents agreed that they felt a deep connection with the sea, regarding it as vital to their survival. They regarded themselves as stewards of the local environment, protecting it for themselves and future generations. One respondent said, "For us, getting more than what we need is tantamount to stealing. If we get more, we may be depriving other fishermen who also have the right to enjoy the wealth of this sea" (Male, Banban, personal interview, June 10, 2018). This feeling of stewardship is similar to that observed by St. Martin (2005) in his case study of New England. St. Martin (Ibid) describes how the fisheries in New England constitute a diverse commons managed through a network of communal relationships using locally-embedded knowledge. He explains that highly specialised ecological knowledge is possessed and shared by the fishers, "depending upon relationships between fishers, and expectations of reciprocity" (St. Martin, 2005, p. 76). The fisherfolk in Tambaliza engaged in the protection of fishing commons by setting up area management schemes to alleviate fishing areas that were already in distress. A 200 hectare no-take zone called Marine Protected Areas (MPA) were implemented within Tambaliza. Agardy (1994) explains that MPAs protect habitats with high concentrations of endangered species. In the last decades, a number of MPAs in the Philippines have proven to be effective in conserving biodiversity and sustaining small-scale fisheries when managed properly (Alcala & Russ, 2006). The MPA in Tambaliza involved the collaboration of local residents, NGOs and the local government. Almost all the interview respondents (18 out of 20) helped out in the implementation of the MPA and half (10 out of 20) said that they signed up to become fish wardens and *bantay dagat* (sea patrol) to prevent illegal fishing in the vicinity of their island.

The alternative finance scheme that the residents of Tambaliza engaged in is called Community Managed Savings and Credit Association (COMSCA). It is very similar to the rotating savings and credit associations that Dutch Hospitality residents engaged in San Isidro. The group meets once a week for an hour, and this is where the members *collectively* complete the financial transactions (save, borrow and release funds) (Figure 7.5). Each CoMSCA member deposits a minimum of Php20 to a maximum of Php100 share per week. They may only borrow an amount equivalent to twice the amount of their total share, and they have three months to return it (with 5% service charge). The members treat this amount as a social fund and they collectively determine how to

spend this. For instance, they use it to fund medical assistance to sick members, to assist members who have experienced a death in the family, and or to finance environmental protection of the sea. An NGO official remarked about the observable social impacts amongst the residents of Tambaliza: "The programme improved their financial literacy and made them save money for the rainy season. It also developed their leadership skills and instilled within themselves the values of discipline and punctuality as they met weekly and on time" (Female, personal interview, June 15, 2018). Other COMSCA groups have willingly donated a portion of their income to support the implementation of the MPA in Tambaliza. One respondent said:

> "I really don't mind. I understand that the money is used to fund the
> enforcement facilities such as boats and markers as well as the trainings
> and seminars. I know that there are long-term benefits for the community"
> (Male, Proper, personal interview, June 20, 2018).

To date, there are 14 COMSCA groups in Tambaliza that can generate up to Php 80,000 per year (Garcia, 2018). Both the MPA and the COMSCA programmes are showcasing the capacity of the local community members to save, to help one another during disasters, and to contribute to conserving their natural environment without relying on huge funding from external agencies and state institutions.

Figure 7. 5: A COMSCA Meeting in Tambaliza

Source: Author (2018)

The examples from San Isidro and Tambaliza illustrate how the residents have been engaging in diverse economic transactions and activities to adapt to climate change that do not necessarily subscribe to a capitalist logic. The residents have engaged in non-capitalist activities such as sharing, gifting, and operating small independent enterprises such as *sari-sari* stores and food hawking. For instance, the residents of San Isidro who owned small enterprises have cultivated

relations of cooperation and interdependence within the community instead of competition (even if their enterprises were very similar to one another). The better-off residents of Tambaliza have been assisting those with lower incomes through charity and gift-giving. Moreover, the residents in the two study sites have also engaged in alternative forms of finance, such as community savings groups, where borrowers can repay debts without interest. The savings groups show how finance may be conceptualised as a commons "that doesn't have to belong to any particular person or entity and that can be used by anyone regardless of their relationship to it" (Safri & Madra, 2020, p. 343). Rather than reject the idea of income or banking, the residents used these activities to save, earn, and protect the environment through MPAs. At the same time, these activities fostered a sense of interdependence, cooperation, and solidarity between community members. A postdevelopment lens gives explicit recognition to the diverse types of labour (in addition to waged labour) that residents do to secure the necessities of life and maintain communities. It also recognises the co-existence of different enterprise types, such as the *sari-sari* stores and *ukay-ukay*, which have been rendered insignificant by a capitalocentric framing. It makes it possible to appreciate gifting and relationships of trust and reciprocity as reasonable approaches (on top of existing market exchanges) that can nurture broader societal well-being and adaptive capacities. By uncovering a more comprehensive and holistic picture of the economy, a postdevelopment lens fosters a more positive and ethical pathway towards just adaptation, one that extends beyond capitalistic growth and competition. Instead, it is characterised by interdependence, careful exchange and mutual reciprocity.

7.6. The Multiplicity of Knowledge

The third key area of interest to postdevelopment scholars is knowledge. This section asks: "*what alternative forms of knowledge exist that people follow and value when thinking about how to adapt to climate change?*" Smit et al. (2000) identify physical infrastructure that provide physical protection against climate hazards, such as retrofitted houses, as an important type of climate adaptation. In the interviews with the staff members of Dutch Hospitality, they shared how they experimented with a diverse range of raw materials and technologies when constructing their houses. They were able to do this with the help of TAMPEI Iloilo (Technical Assistance Movement for People and the Environment Inc.), an organisation composed of technical professionals that serves as the primary technical support arm of the NGO. TAMPEI's engineers and architects collaborated with the residents in exploring eco-friendly, affordable, yet high quality housing materials that were available locally. Two housing materials that were frequently mentioned by those resettled by Dutch Hospitality during the interviews were (1) Interlocking Compressed Earth Blocks (ICEB) and (2) Bamboo. They claimed that their houses were made from the combination of the two forms of knowledge: modernist (ICEB) and traditional (bamboo).

The use of ICEB was a response of Dutch Hospitality to the need for an alternative construction technology that is more affordable than the conventional hollow blocks (without compromising on the quality of the house). ICEB is made of locally-sourced limestone, cement, and water, making it both cost-effective and environment-friendly (Figure 7.6). One of the Dutch Hospitality officials explained that, "using these blocks reduced our construction costs significantly, because we utilised local soil, fewer steel bars and fewer labour. It actually saved us cement, wood, and labour too because there was no need for plastering and mortar in joining the ICEB blocks" (Female, personal interview, May 13, 2018). Dutch Hospitality bought several sets of machines from Thailand to manufacture the ICEBs, and these were used in the construction of the housing units in San Isidro. Local residents involved in housing construction were also given hands-on training on ICEB production.

Figure 7. 6: The Interlocking Compressed Earth Blocks used for the construction of Dutch Hospitality houses

Source: Dutch Hospitality (2012)

Bamboo is the housing material used by Dutch Hospitality for the construction of housing units in San Isidro. While ICEB was used to make the housing structure, bamboo was used as a frame to support the roof (Figure 7.7). Bamboo has traditionally been used in housing construction by the early inhabitants of Iloilo City as well as the Philippines in general (Salzer et al., 2016). Despite this fact, all interview respondents reported that they previously held the incorrect notion that bamboo cannot withstand strong winds and earthquakes (unlike concrete). To correct this misunderstanding, Dutch Hospitality invited academics from the University of the Philippines Visayas, a local academic institution engaged in bamboo research, to come and explain the benefits of using bamboo. The Dutch Hospitality employee said:

> "The experts from the university informed us that bamboo can withstand winds of up to 220 kilometres per hour. They also said that bamboo has a great capacity for shock absorption, is earthquake-proof, and is more sustainable and renewable than hardwoods

because they regenerate very quickly." (Female, Dutch Hospitality official, personal interview, May 11, 2018).

Figure 7. 7: Bamboo providing support for the roof of Dutch Hospitality houses

Source: Author (2018)

Aside from TAMPEI and the University of the Philippines Visayas, the interviews revealed that Dutch Hospitality has openly collaborated with a number of experts from development agencies, academia and the private sector. Carcellar et al. (2011) identified the following international networks that have invested on the programmes of the NGO: Asian Coalition for Housing Rights, Homeless International, International Institute for Environment and Development, and Misereor. At the local level, Dutch Hospitality has continuously forged productive partnerships with several institutions in Iloilo City. For instance, it has partnered with the school of engineering at the University of San Agustin to engage in research on alternative and low-cost housing technologies. To help build a comprehensive database about slum dwellers in Iloilo, the NGO also partnered with the community development program of the Central Philippine University. Ultimately, Dutch Hospitality has demonstrated that embracing local knowledges and traditions does not necessarily entail an outright rejection of the contributions of development experts.

The fisherfolk communities in Tambaliza have accumulated a wealth of knowledge and practices by observing the incremental changes in their natural environment over the years. Observing nature, they have been able to make meteorological predictions that serve as warning systems to incoming typhoons or storm surges. An emerging body of research demonstrates that local and traditional forms of knowledge are a vital source of information that can help communities better adapt to climate change (Green et al., 2010; Hiwasaki et al., 2014).

Four themes pertaining to the use of local and traditional knowledge to predict extreme weather emerged from the interviews: (1) animal behaviour, (2) texture and colour of clouds, (3) colour and height of waves, and (4) wind direction. Interviewees spoke about how certain animal behaviours indicate impending extreme weather. For example, just before Typhoon Haiyan, community members mentioned observing earthworms along the shoreline in numbers that they had never before seen in Tambaliza. Hermit crabs moving inland is another indicator of an incoming typhoon. The appearance of *manaols* (monkey-eating eagle) also forewarn big storms. The interview respondents reported they observed the clouds and wind direction to predict meteorological hazards. More specifically, thick, dark clouds coupled with winds blowing east to west and tall white waves were seen as signs of impending extreme weather. Interview respondents also explained that there is often a particular smell emanating from the sea that signifies an impending storm. These predications were often validated by the news they received later from their radio sets.

Despite their use of traditional knowledge in predicting typhoons and storm surges, the interviewees said that they were open to modern scientific ideas and concepts regarding climate change. All interviewees reported that they willingly attended at least one disaster risk training or workshop organised by any of the NGOs in Tambaliza. These training seminars introduced them to the concepts of disaster risk reduction and climate change adaptation such as *risk*, *hazard*, *exposure*, *vulnerability*, and *adaptation*, which are often used by international scientific bodies like the IPCC or the United Nations. Aside from the training seminars, the respondents also reported taking part in participatory workshops that sought to document climatic changes and weather patterns they have experienced over the years. In addition to documenting their local knowledge, respondents explained that these seminars helped raise their awareness of how extreme weather events would affect their communities in the future. The seminars also introduced people to ideas like exposure and vulnerability analyses, which disaster practitioners use to understand and measure people's vulnerability to climate change. The interviewees said these tools helped them identify the most vulnerable groups in Tambaliza and the underlying causes of their vulnerabilities. In spite of subscribing to traditional practices to predict extreme weather events, they have been very receptive to new scientific concepts and technologies introduced by the NGOs and the local government. In doing so, the residents of Tambaliza provide several practical examples of how local communities combine traditional and local knowledge systems with more scientific understandings to predict extreme weather and plan their adaptation measures. They also demonstrate how these two knowledge systems can complement, rather than contradict, one another.

This section highlights the importance of 'ontological plurality'; the need to re-value multiple ways of knowing and being in the world (McKinnon et al., 2019, p. 193). These examples demonstrate that a postdevelopment lens helps us see the value and legitimacy of traditional forms of knowledge that are often undiscovered or dismissed. A postdevelopment approach values the knowledge of

local residents about weather patterns and animal behaviours without rejecting more scientific understandings of the climate and climate change. It endorses the use of traditional building materials, such as bamboo, in combination with more contemporary materials, such as concrete or bricks. In addition, a postdevelopment approach also shows how traditional forms of knowledge can work alongside modernist rationalities to offer new ways of adapting to climate change. In San Isidro, the households resettled by Dutch Hospitality discovered the benefits of using the traditional bamboo in combination with new construction materials, like the ICEB blocks, to construct resilient housing. Similarly, the residents of Tambaliza drew on traditional and scientific knowledges to make decisions about how to respond to the environmental issues they face. A number of scholars criticise postdevelopment for downplaying the importance of science and external agents in facilitating social change (Cheater, 2003; Storey, 1998). This section, however, shows that a postdevelopment approach is not anti-scientific. Rather, the findings from the two study areas demonstrate how science can work alongside traditional knowledge to offer multiple ways of knowing and enhance decision-making for climate adaptation. Providing equal consideration to both modernist and traditional forms of knowledge and traditions opens up a wider range of possibilities for equitable adaption processes.

7.7 Discussion

This chapter explores how a postdevelopment lens could be utilised to inform the formulation of climate adaptation interventions, especially in the majority world. It eschews the top-down, technocratic, and managerialist approach that has characterised many of the development and adaptation initiatives carried out in the post-WWII period. Instead of turning to a codified set of tools prescribing what adaptation should look like, this chapter highlights the importance of studying diverse, unexpected, and locally-driven initiatives as a source of inspiration for how to better pursue forms of adaptation in the future. The chapter is aligned with the new generation of postdevelopment scholarship that goes beyond critique and puts forth practical and workable alternative development discourses and practices. Instead of concluding with mere critique to adaptation as described in Chapters 5 and 6, this chapter has shown how to move *beyond* critique to rethink how adaptation can be done differently. It stresses the need to re-imagine alternative ways of doing adaptation – ways that do not simply deploy business-as-usual trajectories or techno-managerial approaches. A postdevelopment lens to adaptation sees and values the novel and spontaneous adaptation practices that exist in specific communities.

What does a postdevelopment approach allow us to do? First, it revealed a more nuanced picture of the adaptation efforts taking place in Iloilo than the justice-based and capabilities approaches used in previous chapters. Used in isolation, the justice-based and capabilities approaches might conclude the resettlement in San Isidro and the adaptation programmes of the NGOs in Tambaliza

were unfair because the distribution of resources and benefits of the interventions was been uneven. In doing so, they echo the recent literature that shows that adaptation interventions often serve the particular interests of the few (Sovacool, 2018) and can exacerbate the vulnerability of the most marginalised (Nagoda & Nightingale, 2017; Ribot, 2014). The postdevelopment approach used in this chapter, however, reveals that the story is far more complicated. It allows us to see and acknowledge the small but significant achievements of adaptation practitioners in serving their constituents. A postdevelopment approach allows us to acknowledge oppression and dominance and unjust outcomes without ignoring how power was deployed to support local initiatives and re-imagine climate adaptation and. While recognizing that power asymmetries exist and have negative effects, the postdevelopment approach opens up space to recognize that people have the capacity and means to determine how best to adapt to climate change, and that NGOs and government agencies can play an active role in supporting such efforts.

Second, the postdevelopment approach used in this chapter emphasises local agency and how people are capable of working within and around institutions to obtain a more climate-resilient life for their communities. It heeds the call of Gibson-Graham (2008) for more experimental and performative forms of research that not only identify the sources of injustice, but also explore, liberate and empower the less obvious alternatives to mainstream development and adaptation. The idea of agency is explored through articulating "community capacities rather than limitations, assets rather than needs, and possibilities over constraints" (McGregor, 2009, p. 1698). This chapter showed how a postdevelopment approach to adaptation captures and appreciates: (1) clever engagement with politics, (2) the multiple pathways for achieving sustainable and thriving livelihoods; and (3) the diverse forms of knowledge present within communities. In doing so, this chapter identified a number of important adaptation innovations and processes that would be difficult to identify – let alone accommodate theoretically – with the capabilities approach was used in Chapter 5 and 6.

Table 7.2 summarises the key findings of the chapter. In the area of politics, a postdevelopment approach sees pluralistic grassroots movements as having equal or even greater potential to produce well-being (Cowen & Shenton, 1996; Escobar, 1995). In particular, greater emphasis is placed on how the community members can shape development and seek alternatives, rather than being subjected to it (McKinnon, 2008). The case studies in San Isidro and Tambaliza both show how their residents were political agents with the power to shape and direct the processes of adaptation. In both cases the residents did not merely act as mere observers or recipients of adaptation assistance. For instance, the households resettled by Dutch Hospitality in San Isidro operated as political agents who found ways to work within the system so that their voices were heard. Similarly, the residents of sitio Botlog in Tambaliza mobilised manpower and resources to rebuild their damaged houses and to promulgate their own disaster plan. In spite of the political obstacles they faced, both engaged in creative and clever ways with each other, with the NGOs, and with

local government officials to achieve their desired outcomes. A postdevelopment lens, which draws on poststructural theory, sheds light on people's ability to selectively engage with the adaptation practitioners to advance their own goals and interests, and allows for a more sophisticated conceptual understanding of the exercise of power. It challenges the traditional binary thinking of power as merely domination and resistance by highlighting the multiple modalities of power such as manipulation, coercion, deception, and cooption (Allen, 2003; Foucault, 2000; Rose, 1999). Instead, it calls for a more nuanced and contextualised analysis of power (Cornwall, 2004b; Kapoor, 2005; Mosse, 2005) and emphasises that power is constantly undergoing reproduction and, therefore, has a positive and productive potential (instead of just being oppressive). A postdevelopment lens enables us to see these productive political engagements as legitimate avenues for community members to advance their own interests for adaptation.

Table 7. 2: Three Areas of Discussion in Postdevelopment in Iloilo

Politics	Economy	Knowledge
Self-Development (Trainings, Capacity Building); Partnerships with Government; Non-violent and non-confrontational approach; Save Botlog Project; Safe Village Guide	*Sari-sari* store; Food stalls *Ukay-ukay* Hawking KABALAKA COMSCA MPA Sharing Gifting Reciprocal Labour Openness to markets	Bamboo, Locally-sourced materials ICEB technology Early warning based on traditional knowledge and science

A postdevelopment approach also questions the taken-for-granted assumption that capitalist expansion and industrial growth are the only catalysts for development and poverty alleviation. More significantly, it allows for diverse forms of economic activities to be recognised and valued, rather than rendered inconsequential to development and adaptation outcomes. Postdevelopment scholars challenge the hegemony of capitalism, arguing for a broader and more holistic picture of the economy (Cameron & Gibson-Graham, 2003; Gibson-Graham et al., 2013). This chapter provided a number of examples of non-capitalist practices that helped sustain livelihoods in locally meaningful ways. In both cases, community members have built and maintained relations of reciprocity and gift-giving with one another instead of competition for profit. For instance, some of the residents in the resettlement site who were engaged in hawking food and selling *ukay-ukay* reported that they were able to augment their income through the support of their neighbours. Likewise, the fisherfolk communities in Tambaliza frequently engaged in activities of exchange and gift-giving to help sustain one another's livelihoods. Moreover, each site was able to initiate and implement community savings groups that have different processes compared to traditional banking institutions. Respondents from both sites shared that these alternative forms of banking helped them save, earn, and foster a sense of cooperation and solidarity among themselves. These

non-capitalist activities not only generate household income, they also foster individual and community well-being through the development of networks of interdependence and sociality. The examples provided show a postdevelopment approach "opens up a much wider range of discussions and possibilities based on ethical decision-making, cultural strengths and community enterprises" (McGregor, 2009, p. 1698).

Finally, a postdevelopment approach embraces the potential of local knowledge and traditional culture to increase well-being and adaptative potential. Postdevelopment scholars argue that there are multiple forms of knowledge that people utilise to increase their influence in the processes of development (Cowen & Shenton, 1996; Ziai, 2004). Examples from both case studies demonstrate that local and traditional forms of knowledge do not necessarily contradict with modern and scientific forms of knowledge. The residents from San Isidro and Tambaliza show how they utilise the multiple forms of knowledge to enhance decision-making about climate change. For instance, the residents of Dutch Hospitality used a combination of traditional and modern technologies to help make their houses more durable to face extreme weather events. Similarly, the residents of Tambaliza made sure that their traditional knowledge was integrated into their *barangay's* climate change action plans and that they also learned from the disaster risk training seminars facilitated by the NGOs. A postdevelopment approach therefore calls for a broadening of the field of development possibilities so that equal value and consideration is given to both Western and local knowledges and traditions. The utilisation of traditional forms of knowledge in climate change adaptation is slowly gaining traction in the literature. For example, Galacgac and Balisacan (2009) show that farmers in the Ilocos Norte region of the Philippines rely on traditional knowledge to predict weather and prepare for their agroforestry activities. Nkomwa et al. (2014) argue that indigenous knowledge systems play a major role in the livelihood diversification and climate change adaptation strategies of farmers in Malawi. A postdevelopment approach to adaptation will certainly make a significant contribution to this emerging body of literature.

The examples presented in this chapter demonstrate how a postdevelopment approach opens up a wider range of possibilities and hope based on: (1) ethical negotiation and decision-making (politics); (2) cultural strengths and traditions (knowledge); and (3) community-based enterprises (economy). Rapley (2006) argues that attempts to make postdevelopment practical are still in their infancy, yet scholars are providing real-world examples of postdevelopment thinking in practice (Dombroski, 2015; Gibson-Graham, 2005; McKinnon, 2011). This research builds on the work of Ireland and McKinnon (2013) on climate change adaptation and adds to the growing body of research that attempts to identify and promote the diverse practices that local communities engage in as they adapt to climate change.

Chapter 8: Summary and Conclusion

The preceding chapters unpacked the implementation and consequences of adaptation interventions in two sites in Iloilo, Philippines. They detailed who was involved in the interventions, how they were selected, what the impacts of the projects were on people's capabilities, and the diverse adaptation strategies already underway in local communities. This final chapter weaves together the threads from the previous chapters to provide a summary of the findings and highlights the key contributions of the thesis to climate change adaptation. It is divided into the following parts. The first part revisits the key research problems that the thesis attempted to address. The second part summarises each of the preceding chapters and highlights their main findings. The third part provides a brief discussion on the possible implications of the research findings for adaptation policy and practice. Finally, the last section outlines possible avenues for further research on adaptation and explains the original contributions of this thesis.

8.1 A Review of the Key Research Questions

Climate change is expected to impact communities and ecosystems in a myriad of ways both locally and globally. The IPCC warns that the impacts of climate change will be adverse most especially for the most vulnerable groups who have the least capacity to adapt (IPCC, 2014). Furthermore, climate scientists contend that there is evidence of greater impacts of climate change than originally forecasted by the IPCC, and that the climate system will undergo changes in the coming century regardless of reductions in greenhouse gas emissions (Matthews & Caldeira, 2008; Parry et al., 2008). As the inevitability of climate change becomes clear and its impacts are felt, adaptation is increasingly being considered as essential to reducing people's vulnerability to climate change.

Climate change adaptation can be any action, process, or outcome that helps a system better cope with, mitigate, or adjust to the hazards, risks, and opportunities associated with climate change (Smit & Wandel, 2006). While initially seen as a marginal policy option for responding to climate change, adaptation is now seen as a crucial supplement to mitigation, and has become a key part of the development agendas of many countries, NGOs and international development agencies (Ayers & Dodman, 2010). Despite the growing importance being placed on adaptation, little attention has been given to the negative effects of adaptation policies and practices on local communities (Remling, 2018). A number of studies have demonstrated that adaptation interventions often fail to address the needs of the most vulnerable groups (Eriksen et al., 2015; Nightingale, 2015; Schipper, 2007). In a number of cases, adaptation interventions have benefited some groups but not others. In others, interventions have undermined the livelihoods of the most marginalised members of communities, exacerbating inequality and undermining their climate resilience (Robbins, 2019; Taylor, 2014). Such studies demonstrate that adaptation has important justice implications. Justice

issues concerning adaptation involve, among a number of things, "who gains and who benefits from adaptation strategies… and the legitimacy of collective and governance responses" (Adger et al., 2017, p. 371).

It is against this background that this thesis critically assessed and analysed the ways in which adaptation is planned and implemented at the local level. It drew upon the theoretical frameworks of just adaptation, capabilities and postdevelopment to examine justice implications of the interventions and explore possible pathways for adaptation beyond current mainstream practices. The three frameworks do not sit neatly with one another as the first two define and categorise adaptation justice in a very specific way while postdevelopment advocates an open-ended and diverse approach. However, through a detailed examination of two cases, I demonstrated that this epistemological tension is not a limitation but rather an asset. The experimental, generative, and hopeful approach of postdevelopment helped bring to the fore diverse adaptation imaginaries that may serve as possible pathways for the future. These less obvious alternatives to techno-managerial forms of adaptation would not have been recognised and empowered with the rigid normative frameworks of just adaptation or the capabilities approach. The epistemological tension progressed the thesis beyond recounting the injustices of adaptation to mapping out its possibilities and opportunities. The thesis utilised two case studies to look for possibilities within already existing adaptation practices in specific localities. It heeds the call of scholars who stress the importance of recognising and valuing locally-based and context-specific adaptation initiatives (Dodman et al., 2010; Ireland & McKinnon, 2013; van Aalst et al., 2008). Utilising all the three frameworks (something that has never been done in the past), this thesis contributes to knowledge in the field by questioning widely held assumptions about what constitutes 'just adaptation' and articulating potential ways forward.

Through two case studies, this thesis explored two important categories of adaptation intervention − resettlement and in-situ adaptation. Resettlement involves the permanent relocation of communities from areas exposed to environmental hazards to less exposed locations. This mode of adaptation is highly controversial. Previous studies have highlighted the misery and impoverishment suffered by those who have been resettled for other reasons (Rogers & Xue, 2015; Scudder, 2011; Wilmsen & Webber, 2015). Resettlement undoubtedly confronts issues of justice as, in practice, it "tends to privilege the objectives of elites, is an expression of particular power relations, and typically results in distributive injustice" (Wilmsen & Rogers, 2019, p. 120). Nonetheless, in recent years, resettlement has been discussed, legitimised and used as a tool for responding to climate change in the Global South (De Sherbinin et al., 2011; Hino et al., 2017). Furthermore, there has been little dialogue between the literature on resettlement and climate justice (Ibid.). The other category of adaptation intervention explored in this thesis − in-situ adaptation − involves helping people adapt to a changing climate so they can survive and prosper in their existing locales and communities. According to Cubie (2016, p. 99), more research needs to be conducted

to ensure that "in-situ adaptation measures are responsive and respectful to the rights of those who are unable or unwilling to leave areas of high risks." This thesis contributes to the existing literature by providing critical insights into the planning, implementation and impacts of these two important types of adaptation. It not only provides real-world examples of the unjust and maladaptive effects adaptation interventions can produce, but also demonstrates how a postdevelopment perspective can be used to recognise and support innovative, community-driven forms of adaptation.

The early climate justice literature that emerged in the 1990s relies heavily on a Rawlsian definition of justice, which focuses on the fair distribution of material and social benefits among people over space and time (Rawls, 1971). However, more recent contributions have criticised the distribution-based approach for its failure to account for the wider social, cultural and institutional conditions that produce unjust distributional outcomes. Young (1990, p. 2), for instance, argues that "it is a mistake to reduce social justice to distribution." Fraser (1998, p. 5) likewise suggests that justice requires attention to both participation and recognition and that "justice requires both, as neither is sufficient." This thesis, therefore, deployed a trivalent conceptualisation of justice that gives equal weight to the issues of distributive, procedural and recognition. A trivalent view of justice emphasises the nested nature of these three dimensions of justice; participation and recognition are thoroughly tied to distributive concerns. It is impossible to understand adaptation justice without taking the three into consideration. Scholars argue that little research has examined the distributive outcomes of adaptation interventions on the ground (Archer et al., 2014; Shi et al., 2016). This thesis addresses this gap and more as its trivalent approach facilitates a deeper understanding not only of the impacts of adaptation policies and projects but also the root causes of the injustice.

The first research question focused on the distributive justice of the adaptation interventions carried out by the NGOs and local government in Iloilo. It asked: how are the impacts of climate change adaptation interventions distributed? Focusing on distributive justice helped identify who the winners and losers were from the adaptation interventions. However, the thesis did not subscribe to the traditional frameworks of distributive justice as the mere "allocation of wealth, rights, honours and other benefits" (Cullen, 1992, p. 15). Instead, it turned to another framework − the capabilities approach – to provide a more holistic assessment of the distributive justice of the interventions. The adaptation projects were judged not simply in terms of the distribution of income or resources, but also in terms of how the distributions affected people's potential for functioning and flourishing. This thesis specifically looked at whether the interventions helped augment people's capabilities of life/health (were they being well-nourished and kept safe), knowledge (were they being informed about climate change), work (were they being sustained by work and livelihood) and friendship (were they able to cultivate relationships). Justice entails the capability "to transform goods into the potential for a fully functioning life" (Schlosberg, 2012b, p. 166).

Knowing how adaptation interventions affect people's well-being and functioning is useful to design future adaptation projects that address or redress existing inequalities (Kronlid, 2014), but it is not enough. Paavola et al. (2006) argue that the successful design of adaptation policies, without considering other dimensions of justice such as participation and recognition, is highly unlikely. The second research question, therefore, focused on the procedural and recognitional justice aspects of the adaptation interventions. It asked: who is targeted for the climate change adaptation interventions and what factors play a role in their selection? This focus on procedural and recognitional justice expanded the scope of the inquiry to explore why and how adaptation interventions often perpetuate vulnerability and produce unjust outcomes. The thesis uncovered why some groups were able to participate in and shape adaptation decisions and benefit from their implementation, and why some groups were not. It also explained why some groups remained vulnerable to extreme weather events after the interventions while the resilience of other groups was bolstered, and demonstrated how power and politics shaped these outcomes. In doing so, the thesis responded to the call of critical adaptation scholars for more research analysing how power and politics shape adaptation outcomes at the local level (Mikulewicz, 2018; Nagoda & Nightingale, 2017).

The third research question stems from two observations. The first is that climate adaptation efforts are unlikely to recede over time. Susskind (2010, p. 220) maintains: "cities have no choice but to adapt." Similarly, McNamara and Buggy (2017, p. 443) contend that over the last decade or more, "governments, donors, researchers and practitioners rush to implement initiatives to moderate harm from actual or projected climatic changes and associated impacts." The second observation is that a vast majority of adaptation interventions and policies have conceptualised vulnerability as exposure to natural hazards and, as a result, have advocated mainly infrastructure-, technology-, and market-based solutions (Mikulewicz, 2018; Nagoda & Nightingale, 2017). While these measures have the potential to build people's resilience, research has already shown that they are rarely egalitarian and often result in unjust outcomes (Marino & Ribot, 2012; McCarthy, 2014; Taylor, 2014). The third research question, therefore, sits at the confluence between the necessity of adapting to climate change on the one hand and the limitations of the mainstream approach to adaptation intervention on the other. It asked: what are the diverse and locally-based ways that communities are responding to the pressures of climate change? Using a postdevelopment lens, the thesis uncovered the unexpected and innovative ways the communities in Iloilo engaged with development agencies and pursued their own forms of adaptation, which may lead to more ethical and equitable outcomes.

The thesis critically interrogated and re-imagined climate change adaptation. The first part questioned commonly-held assumptions about adaptation such as that "expert-rule and market-driven" approaches as the best way forward (Turhan, 2016, p. 144) or that "every adaptation to

climate change will be beneficial" (Eriksen et al., 2011, p. 17). It detailed how the adaptation interventions worked, who was involved, and what impacts there were on the local residents. The second component of the research identified possible alternatives to the mainstream norms of adaptation. These alternatives consisted of (1) people's clever engagement with politics, (2) their multiple pathways for achieving sustainable livelihoods and (3) their diverse forms of knowledge about climate and their environment that may have previously been unvalued but are potential adaptation pathways. By integrating these two components, this thesis furthered our understanding of climate change adaptation. Not only did it uncover patterns of oppression and social exclusion that can render climate adaptation interventions ineffectual; it also discovered locally diverse ways that people adapt to climate change that reflect care and support for others' well-being. It is my hope that by challenging the taken-for-granted assumptions about adaptation as apolitical, technical issue with well-defined solutions and articulating alternatives to mainstream practices, this thesis can accelerate the process of imagining new visions for how to respond to climate change in the future.

8.2 Summary and Key Findings

Chapter 1 introduced the research problem and the research questions. It highlighted the emergence of adaptation especially in the majority world where numerous projects are being funded in its name. The chapter cautioned that actions taken in response to climate change are likely to produce winners and losers and, therefore, involves questions of justice (Graham et al., 2015; Shi et al., 2016). It traced the evolution of the conceptualisation of justice in the literature, from an initial focus on its distributive aspects to its expansion to include its procedural and recognitional components. The chapter also introduced two other analytic frameworks: the capabilities approach and postdevelopment theory. The capabilities approach was used in Chapter 5 to assess the distributional justice of the interventions in Iloilo by studying their effects on people's everyday lives and in Chapter 6 to explore procedural and recognitional justice by looking at who gets recognised and gets to take part in the adaptation projects. Postdevelopment theory was used in Chapter 7 to investigate and imagine new locally-driven ways of pursuing adaptation.

Chapter 2 reviewed the theoretical frameworks used in the literature to conceptualise justice. It began by reviewing the literature on 'just adaptation', placing it in context within the wider literatures on environmental and climate justice (Wilmsen & Rogers, 2019). The discussion showed that early engagements with questions of justice in these literatures were based primarily on a Rawlsian (distributive) conception of justice. It provided a few examples of the dominant approaches to climate justice that are based on a distributive framework such as historical responsibility, per capita equity, and the rights-based approaches. The chapter also highlighted the limitations and challenges of the distributive approach and detailed how recent research has veered

from this dominant path, with scholars such as Young (1990), Fraser (1998), and Schlosberg (2012) bringing the issues of participation and recognition to the fore. These contributions contend that a failure to recognise, respect and value vulnerable members of communities and meaningfully involve them in decision making processes are a key cause of distributive injustice and maladaptation. The thesis, therefore, heeded the call for more research using a multifaceted conception of justice that thoroughly ties together recognition and participation with distributional concerns (Bulkeley et al., 2014; Schlosberg, 2007).

Even so, a trivalent conception of justice is still only a partial theory of justice as it does not specify how to assess the justice of interventions based on their effects on people's lives. It does not adequately answer the question "what should we look at, when evaluating whether an adaptation intervention has been just or not?" The chapter followed the recommendations of scholars who propose a capabilities approach to assessing the justice of adaptation interventions (Grasso, 2007; Holland, 2017; Schlosberg, 2012a). They argue that changes in people's capabilities brought about by adaptation interventions is a useful way of assessing whether they were (un)just intervention. The capabilities approach focuses on what people are able to do and achieve based on their capacity to convert resources into meaningful outcomes in their lives, and moves beyond the standard approach of focussing solely on the (re)distribution of resources and risks (or the *goods* and *bads*) produced by policies and projects. Following this logic, the thesis evaluated adaptation justice in terms of the opportunities that the interventions provided to people to improve their climate resilience and livelihoods.

The capabilities approach, however, has a number of limitations. One of its shortcomings is that it makes normative assumptions regarding what people should value based on a particular theorist's perspective. By proposing a 'list' of capabilities, it imposes a specific hierarchy as to what is important to observe or not observe regardless of context. Apart from this universalist tendency, the way that the capabilities are defined and articulated is also quite fixed and narrow. For instance, the narrow conceptualisation of work in terms of waged labour alone as well as the work/play distinction are both problematic. The thesis, therefore, also drew on insights from the diverse economies literature to better recognise the different types of labour that people do to sustain themselves and their communities. Despite its limitations, the capabilities approach provides a rich and multidimensional tool for assessing the adaptation justice.

This thesis adapted Kronlid's (2014) capabilities framework to assess the distributive justice of the projects on Iloilo. It did so by choosing four items from Kronlid's nine-item list that were more relevant to the objectives of the projects. Recognising that Kronlid's (2014) framework does not account for procedural and recognitional justice, and drawing on the work of Nussbaum (2000) and Paavola et al. (2006), three additional items were added to the analytical framework: voice, participation and empowerment. By synthesising the insights of these different conceptions of

justice with the capabilities approach, I produced a new analytical framework to assess how the adaptation interventions in Iloilo enhanced and inhibited people's capabilities and, in doing so, identify their just and unjust aspects.

While a capabilities framework can provide insights into the patterns and possible causes of injustice, it is less useful in terms of identifying local and heterodox forms of adaptation that too often escape the attention of researchers and practitioners. Chapter 2, therefore, finished by turning to postdevelopment theory. It discussed how the mainstream approach to adaptation has sidelined particular knowledges, voices, and practices. It identified three broad entry points for re-imagining climate adaptation from a postdevelopment perspective − politics, knowledge, and economy. It argued for the need to study how people creatively exploit available openings in politics to advance their own agendas, the importance of non-capitalist economic practices and relationships, and emphasised the need to value local knowledge systems. These postdevelopment insights were used in Chapter 7 to identify and analyse a number of local and innovative responses to climate change in Iloilo.

Chapter 3 outlined the epistemological and ontological perspectives, research design, and methodological tools that were used to address the research questions. The research questions and objectives of the thesis align with a transformative worldview, one that emphasises issues such as inequality and oppression and serves as a voice for change and transformation. Such philosophical positioning requires the use of mixed methods research design (Mertens, 2009). The study opted to engage key characteristics of Creswell's (2014, p. 110) 'transformative mixed methods' approach; "a lens… that recognises the non-neutrality of knowledge, the pervasive influence of human interests and issues such as power and social relationships." The research methodology was chosen to focus on the issues of power, vulnerability and social exclusion, in particular, the experiences of marginalised groups when engaging with adaptation interventions. Surveys were conducted to garner an overview of the communities' perceptions of (in)justice as well as important information about the composition of households and the livelihoods. Then, qualitative research tools were applied to explore *why* people perceived the adaptation interventions to be (un)just. These qualitative research tools included interviews with key stakeholders in the adaptation projects, participant observation of community meetings, field walks, and analysis of secondary data. The interviews generated deeper insights into how local residents experience adaptation interventions. The participation observation sessions helped uncover the procedural dynamics present during community meetings and consultations. The field walks provided a glimpse into the diverse and locally-based adaptation strategies employed by the communities. Finally, secondary analysis was conducted to better understand the policies and procedures of the implementing agencies vis-à-vis the actual outcomes in practice. Mixed methods helped achieve data triangulation and enabled me to tell a richer and more nuanced story about adaptation justice in Iloilo.

Chapter 4 presented the study sites, the social demographic profile of their residents, and an overview of the adaptation interventions that have been implemented by the NGOs and the local governments. It introduced the Philippines, a disaster-prone country subjected to numerous adaptation interventions. The chapter also described the case study areas. It began by explaining why the province of Iloilo was chosen; namely, because it shares similar challenges to many other areas of the Philippines and the Global South more broadly. Iloilo is considered highly vulnerable to the impacts of climate change and is consequently the target of various adaptation programmes (Uy et al., 2011). Furthermore, the Iloilo government has enforced a comprehensive legal framework on climate change and has been highly lauded as an example of best practice in adaptation governance in the Philippines (Sunstar Iloilo, 2019). For these reasons, Iloilo was an important and interest place to carry out the two case studies.

The chapter then described how and why the two adaptation interventions were chosen as the focus for two case studies. Two important types of adaptation interventions were investigated – a resettlement project in San Isidro and an in-situ adaptation project in Tambaliza. The village of San Isidro was constructed as part of the IFCP and required the resettlement of 3,500 households. Its resettlement programme has been widely lauded and is proposed as a possible model for the resettlement of another 10,000 households in the future (Philippine News Agency, 2017). Meanwhile, Tambaliza is an island that was devastated by Typhoon Haiyan and was the target of several adaptation interventions by humanitarian and development organisations. Tambaliza is also known for its transparent and participatory approach to adaptation governance, and has been praised nationally for its attempts to widen the participation of its residents in local government programmes (Galing Pook, 2009). These factors made San Isidro and Tambaliza interesting places to explore the issue of just adaptation.

Chapter 4 also provided a brief account of the social demographic profile of the residents in both areas. This helped determine the different levels of climate vulnerability within the target communities. In San Isidro, there were more women and elderly residents and people within low incomes in the housing projects managed by Concern Italy, Houses4Humanity, and Care Foundation than Dutch Hospitality, for example. Differences in pre-existing vulnerability were also observed in Tambaliza. For example, the residents of Proper and Banban were the most educated and had more diverse sources of income (i.e. aside from fishing and farming) than the residents of the five other sitios. Most of them were employed as teachers, construction workers or factory workers and had higher average incomes than those living in the other sitios. On the other hand, Botlog and Punting had the greatest proportion of elderly people and people with disability. They also had lower incomes, were heavily reliant on resource-dependent sources of livelihoods such as fishing and farming, and were living in precarious housing conditions. This data demonstrated the

pre-existing inequality between the resettlers in San Isidro and across the different sitios of Tambaliza. Furthermore, it demonstrated the differences in the socio-demographic profiles of those allocated to the various NGOs operating in Iloilo. Recognising this pre-existing inequality is important for ensuring scarce resources are to be directed to those most in need. It is also important for assessing whether the interventions produced just outcomes. The United Nations warns that "when climate hazards actually hit, disadvantaged groups suffer disproportionate loss of income and assets (physical, financial, human and social)" (Islam & Winkel, 2017, p. 7). The adaptation interventions of the NGOs and the local governments should have ideally targeted the disadvantaged groups in order to raise their adaptive capacities to those of more advantage members of the target communities.

The final section of Chapter 4 examined the rationale and goals of the interventions that were meant to address climate change in Iloilo. Climate change and the city's location and flood-prone terrain were blamed by the implementing agencies as the reasons why the province is prone to typhoons and storm surges. After all, the country is home to 7,109 islands and is located along the typhoon belt in the Pacific (Porio, 2014). Consequently, an average of 20 typhoons enter the Philippines and "five of which shall be destructive" (Padagdag, 2018, p. 9). In response, the local government and the NGOs have highlighted the need to build people's adaptive capacities to climate change. A careful review of the NGOs' adaptation programmes revealed that the interventions were intended to cater to the needs of the most vulnerable groups. For instance, the resettlement associated with the IFCP was designed as a development project in its own right. It sought to mitigate future flood damages so that a more sustainable and climate resilient community was created (DPWH, 2005). The resettlement action plan (RAP) also claimed that the local government recognised the rights of the vulnerable and that programmes should be positively biased in their favour. Similarly, the NGOs in Tambaliza were committed to involving vulnerable groups and helping them better adapt to climate change. For example, First Response Ireland stated that it conducted additional verification to ensure that the elderly and people with disabilities were targeted for assistance first. All three NGOs also stressed that their adaptation programmes sought to actively involve residents in consultations and planning sessions. These findings suggest that, on paper, the adaptation interventions identified and targeted those in the community most vulnerable to the effects of climate change. But how did things turn out in practice?

Chapter 5 addressed this question. It analysed the distributive justice of the NGOs projects; how the benefits and burdens of the adaptation interventions were distributed. It utilised the capabilities frameworks (discussed earlier) to assess the interventions according to their impact on people's capabilities. It assessed whether the adaptation interventions contributed to the enhancement of life and physical health, knowledge, work and friendship. By reviewing policy documents and adaptation intervention plans of the NGOs, these four capabilities were drawn from the literature

and adapted to the specific context of the two study sites. It found that the benefits of the adaptation interventions were unfairly distributed: the capabilities of the wealthiest and most politically connected households were more likely to be enhanced compared to those of the poorer and more politically marginalised households. In San Isidro, for example, residents from Dutch Hospitality reported better access to basic services and higher quality of housing compared to the residents from other NGOs. They were also more engaged in several information-education sessions and were more involved in alternative income-generating activities. Likewise, in Tambaliza, the residents of the richer sitio − Proper, Banban and Guinmisahan − reported the highest levels of satisfaction with access to basic services. On the other hand, the residents of Botlog and Punting – the poorest sitios most exposed to extreme weather events − lamented about the lack of potable water, unreliable electricity, and inadequate access to medicines. The uneven distribution of the benefits of the climate adaptation interventions, coupled with the finding from Chapter 4 that some groups already have higher baseline vulnerability levels compared to others, worked to compound the risks posed by climate change among the most marginalised in San Isidro and in Tambaliza. For instance, the residents from Concern Italy and Care Foundation reported that flooding continued to be a problem in their areas after being resettled. The residents of Botlog and Punting complained about the lack of income generating activities that could help better adapt to climate change. The interventions further reinforced existing power structures and inevitably contributed to growing inequalities within the communities. While the findings of the chapter capture the distributions of vulnerability and inequality that resulted as a consequence of the adaptation interventions, it still begs the question of what processes produced this unjust distribution of benefits and burdens?

To address this question, *Chapter 6* turned to the issues of procedural and recognitional justice. The procedural and recognitional components of justice were assessed in terms of their contribution to the enhancement of the following capabilities: voice, participation, and empowerment. While the NGOs subscribed to the principles of participation and recognition on paper in their planning documents, the chapter described how these good intentions were subverted by local politics and power relations. In San Isidro, the residents of Concern Italy, Houses4Humanity, and Care Foundation had the least voice and were not adequately recognised or involved in the planning of adaptation interventions. They also felt they were sufficiently included in the empowerment or capacity-building initiatives that were meant to enhance the climate resilience of residents. They also complained about opaque selection mechanisms in the housing projects and the special preference given to allies, friends and family of local politicians. Consequently, households who were not necessarily vulnerable to flooding or who met the national requirements for resettlement were accommodated in superior housing projects while the most vulnerable were relegated to substandard houses with inadequate infrastructure services. In a similar way, the thesis revealed that there were preconditions for achieving recognitional justice in Tambaliza such as membership in POs and participation in previous projects of the NGOs. These preconditions adversely hampered

the participation of residents from Botlog and Punting who struggle to attend these projects due to work and family responsibilities. Interviewees also stated that barangay officials tended to prioritise their own family and friends when negotiating with the NGOs about the location of projects. The skewed participation of people from the different sitios in the community engagement processes, combined with the power of local officials, had real impacts on the distribution of resources as shown in Chapter 5.

In addition to exploring the consequences and possible causes of injustice, this thesis also attempted to answer the question 'how do we move forward?' To do this, *Chapter 7* used a postdevelopment lens to uncover and explore innovative, community-led forms of adaptation in Iloilo. It revealed how the local residents exploited openings in the political, economic, and knowledge systems to pursue forms of development and adaptation that address their needs and aspirations. The chapter presented a number of examples of how the people of Iloilo used local knowledge, clever engagement with politics, and non-capitalistic forms of economic activity to adapt to climate change whilst enhancing their livelihoods. In San Isidro, the residents of Dutch Hospitality did not see themselves as passive subjects of the adaptation intervention, rather they asserted their rights to take control of the planning and implementation of their own resettlement. Instead of resorting to confrontational protests, they forged positive relationships with the local government so that they could make their voices heard. Collaborating with the government and NGOs was also a fruitful tactic for the residents of Tambaliza, resulting in a community-based disaster plan that accurately reflected their needs and concerns. The residents of Botlog also demonstrated that they do not have to rely on government and NGO assistance every time a disaster strikes. They mobilised community resources and labour to re-build their houses through the spirit of *bayanihan,* a Filipino term referring to the practice of working together to achieve a particular task.

Chapter 7 also emphasised the diverse non-capitalist economic practices and relations that people draw upon to adapt to climate change. In San Isidro, the residents of Dutch Hospitality set up their houses in innovative ways to they could engage in income-generating activities, such as the selling of food and pre-loved goods. They did not look to scale their businesses or to earn big profits by out-competing the neighbour's business. Rather, they supported their neighbours' entrepreneurial activities and saw their own businesses as a hobby, as a source of supplementary income and a way of providing a valuable community service. In Tambaliza, the residents of Botlog and Punting shared how they often received gifts of fish and other excess catch from their neighbours. In spite of the fact that they were dependent on the market for sustenance, they also demonstrated a concern to protect the fishing commons through their active involvement in the implementation of MPAs. The residents in both study sites also take part in community-based finance schemes that helped them save money through their accessible and straightforward membership processes. These non-

capitalist activities and relations not only helped them support each other's livelihoods, they also fostered solidarity, mutual support, and a sense of community.

Finally, Chapter 7 revealed how residents utilised both traditional forms of knowledge and modern science in preparing for climate-related hazards. In San Isidro, Dutch Hospitality houses were made from a combination of advanced concrete blocks (for the structure) and traditional bamboo to support the roof. The NGO also collaborated with industry and university experts in designing low-cost, climate-resilient houses for the future. In Tambaliza, residents drew on traditional forms of knowledge to help them forecast and prepare for incoming typhoons and storm surges. They observed animal behaviours, wind direction, cloud patterns and height of waves in making their meteorological predictions. However, the residents were also open to scientific knowledge provided to them in the disaster preparedness seminars offered by the NGOs. The chapter demonstrated how a postdevelopment lens can be used to identify heterodox forms of adaptation. It also provided a number of practical examples of locally-embedded, just, and livelihood-enhancing forms of adaptation. In doing so, it helps us imagine how we might move beyond the top-down, managerial, one-size-fits-all approach of many development agencies and governments.

8.3 Discussion

It is now widely acknowledged that the impacts of climate change will only intensify over the coming years. Climate change adaptation interventions are now being planned and implemented all around the world to increase the climate resiliency of vulnerable communities. However, as these efforts to continue apace, there is a growing recognition that adaptation interventions can produce various unintended consequence, aggravating the climate vulnerability of some people and exacerbating pre-existing inequalities. As such, critical research into the underlying assumptions, processes, and impacts of climate change adaptation is now more important than ever. This thesis sought to address this gap in the literature, thoroughly interrogating and unpacking climate change adaptation in order to better understand its conceptualisation, implementation, and consequences.

This thesis was comprised of two main components. First, it provided a critical examination of current adaptation practices and their effects on the most vulnerable members of targeted communities. Second, it explored new ways of pursuing adaptation that are just, equitable, and address the needs and aspirations of the most vulnerable. Two communities in Iloilo were studied because they are both vulnerable to the impacts of climate change and have been targeted for adaptation interventions. The thesis used mixed methods including surveys, interviews, participant observation, and analysis of secondary sources to unpack people's lived experiences of adaptation interventions through the theoretical lens of 'just adaptation', a novel adaptation of the capabilities approach, and postdevelopment. This thesis is unique in that it combined these three distinct

theoretical frameworks, which rarely engage with one another, to analyse the justice implications of a number of real-world adaptation interventions. In doing so, it provided insights in the adaptation process that would have been missed by using any of these frameworks in isolation.

A review of the project documents revealed that the local governments and the NGOs had the best of intentions and strong justifications for intervention, especially in the aftermath of Typhoons Frank and Haiyan in the two study areas. Content analysis of the policy and adaptation plans of the government and the project evaluation reports of the NGOs were conducted to better understand the rationale, objectives and intended targets of the adaptation interventions. The findings reveal that the NGOs were cognisant of the risks generated by pre-existing structural and recognitional injustices – in particular, the uneven distribution of income, wealth and climate risks in the target communities – and were committed to addressing these issues. However, their assessment of pre-existing injustices had an important blind spot – political power imbalances at the local level. As the examples in both case studies have shown, it was expedient for the NGOs to work with well-established and better-off community members and local officials. In San Isidro, households with more financial capability to service loans were more likely selected for the superior housing program of Dutch Hospitality. In Tambaliza, the NGOs prioritised organised groups, active residents and allies of local politicians in determining who gets access to their adaptation interventions. Smith (2009) calls this practice 'betting on the strong' – concentrating resources and help on people and in areas with better existing conditions to showcase success. Consequently, there was a mismatch between who needed the adaptation interventions and where they ended up in practice. The failure of agencies to implement needs-based and impartial adaptation interventions consequently created a significant disconnect between people's needs and the adaptation interventions that were provided. This, in turn, had a disproportionate effect on the most marginalised groups and impoverished them further. This suggests that a careful understanding of the inequalities ahead of the design and implementation of the adaptation programmes is not sufficient to ensure just adaptation. It does not necessarily follow that a strong contextual understanding of people's differential socio-economic conditions and exposure to climate change leads to just processes or outcomes.

The thesis also uncovered the nested nature of the different dimensions of justice. Distributive justice depends on procedural justice, which, in turn, depends on recognitional justice. If one is not recognised, one cannot participate. At the same time, both recognition and participation are necessary to achieve distributive equity. Hence the root cause of distributive injustice lies at the interface between procedural and recognitional injustice. In both case studies, the people who were recognised and were able to meaningfully engage in decision making and planning processes tended to report enhanced capabilities. For example, the residents of Dutch Hospitality in San Isidro reported being more involved in planning their relocation compared to those resettled by other

NGOs. Because they were given ample opportunities to influence their relocation, they eventually ended up with better quality houses compared to other resettlers. In Tambaliza, the more affluent and politically powerful sitios were able to participate and express their concerns more than the vulnerable sitios, leading to better access to services and higher living standards among their residents. This finding demonstrates that equitable distribution of the benefits of adaptation is not possible without recognition and meaningful participation.

The thesis also reveals that an important impetus behind people's unequal recognition and participation is politics. Local politics and power relations helped determine people's ability to benefit from the adaptation interventions and projects. In San Isidro, politics shaped who got relocated and the NGO project they were allocated to. In Tambaliza, politics influenced which sitios were prioritised, how people were allocated to the different NGOs, and what measures they could participate in. Despite this, the NGOs took inadequate steps to mitigate the influence of politics and circumvent local officials when deciding where and how to roll out their projects. As a result, several respondents complained that the benefits of the adaptation interventions only trickled down to a powerful few, such as those who were financially capable of servicing housing loans and those who had personal connections to local politicians. Because decisions on who is 'deserving' and 'undeserving' of adaptation assistance is determined by politics, more attention needs to be given to it when planning and implementing future interventions in order to mitigate its negative influence.

The two case studies demonstrate how power and politics can distort the well-intentioned aims of adaptation programmes and suggest that more work needs to be done to broaden our understanding of adaptation as more than an adjustment to biophysical risk that needs techno-managerial and perfectible approaches. While adaptation actions and decisions are clearly political, adaptation has mainly been regarded as a technical and apolitical endeavour (Eriksen et al., 2015; Ojha et al., 2016). What's more, in practice, adaptation is construed in narrow terms as a form of adjustment to biophysical changes that require "engineered and technological options " (Noble et al., 2014, p. 836). On the contrary, this study highlights that climate change adaptation is always subject to machinations of external factors such as power and politics. It shows that climate change adaptation is clearly a political endeavour that is embedded within pre-existing intra-community power relations. Climate adaptation is a deeply political process that can be easily subverted by the interests of the powerful, resulting not only in the sub-optimal allocation of scarce adaptative resources but also exacerbation of pre-existing inequalities and injustices.

While this thesis illuminates and reinforces the several issues already raised in the literature on adaptation such as its unequal outcomes (Sovacool & Linnér, 2016; Thomas & Twyman, 2005) and potential for maladaptation (Adger & Barnett, 2009; Barnett & O'Neill, 2010), it also points out a number of complexities associated with exploring adaptation interventions which have not been

explored in the past. One example is how adaptation justice is context dependent. The findings of the study reveal how difficult it is to judge whether adaptation interventions of the NGOs were 'just' or 'unjust'. For instance, the resettlement programme can be considered just from the perspective of the residents of Dutch Hospitality and unjust from the perspective of everyone else. Moreover, the thesis findings also suggest that reality is also not as straightforward as the simple enhancement or impediment of people's capabilities. A single intervention may enhance the capabilities of some members of a community while undermining those others. For example, while the resettlement programme of Dutch Hospitality significantly improved people's access to basic services, it also undermined their trust and relationships with their neighbours. In Tambaliza, the residents of Botlog and Punting were subjected to numerous disaster trainings and simulations. While assisting residents to prepare for climate impacts is useful, it does little to guarantee the long-term resilience of their livelihoods. The thesis demonstrates that reality is more nuanced than a binary of just/unjust or the enhancement/blocking of people's capabilities.

The thesis also deconstructed critical narratives about adaptation interventions in the literature that portray adaptation as forms of domination or oppression (Eriksen et al., 2015; Nightingale, 2017). The findings of the study highlight the diverse ways that people adapt to climate change that demonstrate care and support in times of climatic stress. For example, the fisherfolk communities in Tambaliza demonstrated how people engage in ways that care and support the well-being of others and the commons. They engaged in sharing, gifting, and other types of reciprocal relationships, most especially with the marginalised members of their community. Adaptation officials prioritised far-away sitios like Botlog and Punting in the disaster preparedness trainings and workshops that they organised, but not in other in other aspects of their intervention programmes. In San Isidro, while the activities of Dutch Hospitality may not perfectly fit the parameters of justice in relation to the other residents of the resettlement site, they are nevertheless producing desirable outcomes for their own residents. The above examples demonstrate that adaptation interventions have certain merits and benefits; they do not have to be halted. Instead, this thesis points to the need to re-imagine alternative ways of doing climate change adaptation – ways that do not deploy universal conceptions of 'justice' and 'empowerment' nor subscribe to the myth that adaptation projects can exist outside of politics and external agendas. While the thesis has demonstrated that it is impossible for adaptation practitioners to be rid of the influence of politics and other external factors, it also argues that adaptation efforts should not be entirely abandoned.

Finally, the thesis extends the critical adaptation literature such as political ecology and climate justice studies that focuses purely on critiquing adaptation interventions (Ribot, 2014; Sovacool & Linnér, 2016; Taylor, 2014). By bringing together the disparate literatures of adaptation justice and postdevelopment that have seldom been brought together, the thesis moves beyond critique and reveals possible alternatives to techno-managerial forms of adaptation. It draws on

postdevelopment theory to uncover the clever and spontaneous adaptation practices that exist in specific communities in Iloilo. To date, much of the research on adaptation is framed on a deterministic and positivist worldview that reflects developmentalist paradigms (Ireland & McKinnon, 2013; Taylor, 2014). For example, the World Bank has called for the need to scale up people's ability to manage extreme weather events in ways that "safeguard future growth and poverty reduction" (Mikulewicz & Taylor, 2020, p. 626). Such preoccupation with techno-managerial approaches to adaptation precludes the emergence of diverse and spontaneous adaptation innovations within communities. This thesis thus brings to light the adaptation initiatives that are often occluded or ignored by mainstream techno-managerial approaches. By proposing an analytical framework that articulates the diverse and locally-based adaptation responses of communities, the thesis makes a significant contribution to the scholarship on postdevelopment and climate change adaptation. In the edited volume 'Postdevelopment in Practice', Klein and Morreo (2019) claim that while there are already diverse forms of postdevelopment in practice that is underway, there is a need for more scholarship that acknowledges and renders visible postdevelopment initiatives. This thesis adds to the diversity of the examples provided in the volume – some of which include the recovery of Indigenous economies, the documenting of community economies, and the reclaiming of radical subjectivities against patriarchy - that demonstrate sites where postdevelopment is in practice. This thesis shows that adapting to climate change is another example of postdevelopment in practice that is underway. It proposes an analytical framework to recognise how local groups are responding to climate change and presents concrete examples in Iloilo.

By discussing how the local residents are exploiting possible openings in politics, economy, and knowledge, the study finds that there exists multiple adaptation strategies and pathways beyond the techno-managerial and mainstream approaches. These are driven by community members themselves and build on existing skills, knowledges, experiences and resources within these communities. The findings also indicate that these innovative and locally embedded adaptation practices are not necessarily at odds with mainstream approaches. For example, the residents of Tambaliza showed that they rely on both scientific and traditional knowledges to make decisions about how to respond to the environmental issues they face. While they utilise animal behaviours and cloud formations as indicators of extreme weather events, they also apply the scientific concepts and ideas they learn from the NGOs in responding to typhoons. Moreover, the residents of Dutch Hospitality demonstrated the value of engaging and forging relationships with local authorities and NGOs. As a result of their productive institutional relationships, they were able to direct much-needed resources such as equipment and personnel to help them with their resettlement. The community savings group is another case in point: it demonstrates how community members themselves can successfully appropriate and take ownership of mainstream adaptation interventions so long as they are meaningfully involved. The thesis therefore shows how a postdevelopment lens can open up space to recognise that people have the capacity and means to determine how best to

adapt to climate change, that NGOs and government agencies can actively support. Through this lens, one can see the residents of Botlog or Dutch Hospitality not as passive victims of disasters or resettlement but as agents capable of responding to climate change through their own resources and relationships. The thesis ultimately suggests that by supporting people's local and place-specific everyday adaptation responses, adaptation practitioners have an opportunity to co-produce multiple adaptation pathways to reduce the likelihood of maladaptation in the future.

8.4 Recommendations for Future Research

The thesis has a number of limitations which provides a basis for future studies. While it has explored adaptation interventions from a justice and a capabilities lens, the study could have examined these issues from other lens such as gender, age, ethnicity, and religion. As Moser and Stein (2016, p. 182) state, vulnerability "can be economic, political, social and psychological in nature and can affect different groups, especially women and children". Moreover, while the study examined inequalities in adaptation interventions and outcomes within communities, it does not provide an in-depth understanding of the power differentials that exist between local communities and the adaptation practitioners. In addition, the thesis has only begun to scratch the surface of what just adaptation might mean and entail from the perspective of the capabilities approach. I have also only discussed four capabilities related to distributive justice of climate change adaptation – a list that is only partial and not exhaustive. Lastly, while the thesis has provided empirical examples of adaptation practices through a postdevelopment lens, more theoretical reflections and analysis are needed moving forward. These limitations point to further gaps that need to be filled by future research.

More research is needed to further unpack contemporary adaptation practices and uncover new ways and more ethical ways of increasing the climate resilience of the most vulnerable members of at-risk communities. More research needs to be done to recognise disparities in decision-making and distribution of benefits within adaptation programmes, as adaptation is always and everywhere embedded within existing social contexts which involve power relations and contestations. Attention should be given to two particular areas: (1) a thorough investigation of injustices and exclusions that incorporate more nuanced understandings of the power and politics and (2) an analysis of the several initiatives in pursuit of adaptation justice. For the first possible area of study, more research needs to be conducted to analyse the origins of vulnerability and to pay more attention to power asymmetries at the local level. Mikulewicz (2018, p. 25) suggests that "power should be analysed with a focus on both its material and discursive dimensions." This involves asking questions such as: how is adaptation being used for capital accumulation by elites? Why are certain individuals or groups more able to promote their own interests than others? Another possible

avenue for future research is understanding the power relations between development agencies such as NGOs and the communities they are tasked with helping. Power relations between local residents and outside actors play an important role in shaping people's adaptative capacities and must be scrutinised further. For the second recommended area of study, research should document and analyse the initiatives that actors in state, market and society take to promote a socially-just approach to climate change adaptation. More case studies are needed that document who or what agencies lead these campaigns, who they collaborate with, what frameworks they use to define and analyse climate justice, what barriers they face and what impacts they have on policy making and planning.

Second, more research is needed to explore the applicability of the capabilities approach as an evaluative framework for adaptative interventions, in particular, their justice dimensions. While this approach has been widely applied within the environmental and energy literatures (Day et al., 2016; Gardoni & Murphy, 2009; Holland, 2008), Kronlid (2014, p. 6) asserts that "the capabilities approach is a promising yet underdeveloped model for exploring human well-being in the context of climate change adaptation." Therefore, more research is needed to demonstrate how the capabilities approach can be further developed to better understand the ethical implications of adaptation policies and projects. Based on a list of capabilities drawn from the capabilities literature (Kronlid, 2014), this thesis utilised four capabilities (life and physical health, knowledge, work and friendship) in assessing justice in the context of climate change adaptation. However, the relationship between the other capabilities in Kronlid's framework (self-integration, coherent self-determination, transcendence, other species, and mobility) and adaptation justice were not explored and therefore merit further attention in the future. Moreover, there has been a movement towards co-production and other more participatory approaches to designing and evaluating development programmes (Schischka et al., 2008). For example, Alkire (2002) described the value of using focus groups in her capabilities-based analysis of three Oxfam projects in Pakistan, arguing that it provides opportunities for the marginalised to voice their opinions. Stewart (2001, p. 1192) concurs by arguing that "the strength of Alkire's participatory approach… appears to have more legitimacy than the imposition of a set of values by an outsider". Future studies could thus explore the possibility of co-designing the data collection processes with community members themselves so that people's capability lists will be produced and assessed from their own perspectives. Another possible application of the capabilities approach would be to analyse the multi-dimensional capability deprivations people face in achieving adaptive capacity to climate change. Future research should also explore how factors other than income (such as gender, health, tenure security, or employment) relate to the enhancement or inhibition of people's capabilities.

Finally, more research needs to be conducted to explore how postdevelopment approaches can be applied specifically to adaptation. In the concluding chapter of 'Postdevelopment in Practice', Klein and Morreo (2019, p. 324) invite scholars to "think and communicate moments and experiences of

postdevelopment already in train within and towards the pluriverse". Scholars argue that postdevelopment is undergoing a metamorphosis from an angry corpus of critiques to a collection of works that seek out possibilities and opportunities (Gibson-Graham, 2005; McGregor, 2009). This turn in the literature opens up a range of interesting research questions, like: What other locally-based and context-specific climate change adaptation practices are people from different parts of the world engaged in? And how are these activities translating to more just and ethical adaptation pathways? While Ireland and McKinnon (2013) have identified a number of local adaptation actions in Nepal and Bangladesh, more examples on how local groups are responding to climate change in other contexts need to be studied and promoted. While this is clearly an invitation to highlight postdevelopment in practice, Klein and Morreo (2019) also contend that postdevelopment *theory* is also necessary in guiding and reflecting upon postdevelopment practice. As such, theoretical questions such as "where has postdevelopment come from?" and "where can postdevelopment be headed?" are crucial in helping one think whether something may or may not be postdevelopment in practice. Future studies that either extend current theoretical insights or consider new theoretical work in relation to postdevelopment practice are therefore necessary. Another possible area for future research is to explore how postdevelopment approaches may be incorporated and integrated into the everyday practices of governments and NGOs. Is such an integration even possible in a practical sense? Racelis (2008, p. 196) warns that "failure to institutionalise forms of community empowerment in larger government or donor systems and to make them part of social policy may only reinforce entrenched inequalities of asset and power distribution…" Is there any evidence that postdevelopment approaches are already being institutionalised in adaptation planning and implementation around the world? McGregor (2009) argues that attempts to institutionalise postdevelopment practices are still in their infancy but some evidence can now be seen in global civil society events and development industry reports, indicating a burgeoning interest in the approach. Another important thing to consider is the effects of the locally-based and community-driven climate change adaptation practices. To what extent does the greater prevalence of locally-based everyday adaptations of community members affect their well-being? Is there a relationship between external pressures from the market, state and other NGOs and people's locally-based adaptation strategies? Issues of cost, equity, and efficiency of the community-driven adaptation practices need to be taken into consideration. These areas provide fertile ground for future research.

8.5 Contributions of the Thesis

Albert Einstein once said, "the significant problems we face cannot be solved at the same level of thinking we were at when we created them." 'Business as usual' simply will not do if we are to achieve just adaptation for the world's most vulnerable groups. As the impacts of climate change are increasingly recognised, there is growing recognition that mainstream approaches to adaptation

are short of their goals of helping the most vulnerable prepare for accelerating climate change. Current climate change adaptation interventions have helped a few groups of people steer their lives towards a climate-resilient future while leaving some of the most vulnerable behind. Relocating communities, building infrastructure projects, and promoting market-based solutions are not enough. We have to re-think the ways we have been doing adaptation and identify a new set of practices that are guided by an ethics of care, solidarity and compassion. This can help ensure that we leave no one behind.

This thesis employed a 'radical' approach to adaptation because it attempted to explain the possible causes of people's vulnerabilities and articulate possible alternatives to the mainstream approach of top-down, managerial projects. It makes two important contributions to the literature on climate justice and adaptation. First, while Shi et al. (2016, p. 135) stress that the first step for a research agenda towards just adaptation is "empirically measuring and assessing outcomes related to justice and equity of recent and on-going adaptation planning efforts", this study goes beyond this by advancing a multifaceted understanding of just adaptation, both in terms of its theoretical framings and its analysis of real-world adaptation practices. A multifaceted conceptualisation of justice requires not only an understanding of unjust distribution and a lack of recognition but also the way the two are tied together in social and political processes. It therefore demonstrated the need to expand our theoretical framework for thinking about and studying adaptation justice. By revealing some of the causes of people's inability to participate and benefit from adaptation decisions, it moved the discussion of adaptive justice into the realm of politics and power. In doing so, it addressed a recognised gap in the existing just adaptation literature (Mikulewicz, 2018). Second, it demonstrated how a postdevelopment lens can help uncover and give credit to the multiple and diverse ways of adapting that have not been considered legitimate or credible in the past. The study found that community members respond to climate change through collective action such as the practice of *bayanihan* to re-build the damaged houses of Botlog, by community mobilization such as how the residents of Dutch Hospitality directly engaged with and built productive relationships with the state, through gifting and relations of reciprocity with one another in Tambaliza as well as in utilising both traditional and scientific forms of knowledge to inform decisions and actions. The thesis thus ventured into new territory, imagining how climate adaptation can be done differently, and providing practical real-world examples of this. It also showed how such an approach can account for the complexities of local politics, non-capitalist forms of economic activity and how traditional knowledge system can be deployed, rather than silenced, to achieve just adaptive outcomes. By enlarging the field of legitimate and credible adaptation thought and practice, it showcased alternative ways of doing adaptation, especially in the developing world context.

The thesis also contributes to the existing research on climate change policy and practice in the Philippines. Previous studies on climate change adaptation in the Philippines are heavily focused on apolitical approaches, such as characterising exposure to hazards (Jose & Cruz, 1999; Perez et

al., 1999; Yumul Jr et al., 2011), identifying vulnerability levels (Porio, 2011, 2014; See & Porio, 2015) , and enumerating types of adaptation activities (Allen, 2006; Jamero et al., 2017; Uy et al., 2011). Having engaged in this mode of analysis in the past , I now realise the need to conceptualise vulnerability and adaptation as more than just as bundle of risks that can be reduced through top-down development and adaptation projects. This thesis is an attempt to step back from these mainstream approaches to adaptation and re-conceptualise adaptation as a highly political process with highly uneven (and sometime unjust) impacts across and within communities. It uncovered the political roots of people's vulnerability and explained how these have exacerbated pre-existing social inequalities at the local level.

Finally, the thesis is important for helping international and government agencies, NGOs, adaptation practitioners, and community members reflect on and improve their own practices and modes of thinking. The postdevelopment analyses on climate change adaptation in the two study areas reveals the complex and unexpected ways in which people exploit possible openings in politics, economy, and knowledge to create alternative adaptation pathways that are aligned with their own agendas and interests. The significance of these findings raises important questions about the norms and practice of adaptation. In particular it demonstrates the importance of valuing grassroots political actions, informal economic practices, and traditional knowledge systems. Mainstream adaptation approaches tend to be inflexible due to the constraints of demonstrating results, meeting targets, securing ongoing funding, and delivering to deadlines. But this thesis also demonstrated that the postdevelopment and mainstream approaches are not necessarily incompatible. Indeed, the people of Iloilo demonstrate they can be complementary. Adaptation trajectories can be diverse *and* just. The possibilities are endless.

Appendices

Appendix 1: Survey Questionnaire (San Isidro Resettlement Site)

Interviewer Name: _____ Date of Interview: _____ Time: _____

I. Personal Information

1. Name of Respondent

2. Place of PREVIOUS Residence: (Barangay, City)

3. Home Association:

1 – Dutch Hospitality	2 – Concern Italy	3 – Houses4Humanity
4 – Care Foundation		_____

4. Respondent's Age

5. Sex of Respondent

1 – Male   2 – Female

II. Household Information

6. Total number of household members

7. Number of males

8. Number of females

9. Number of children

10. Number of household members earning

11. Number of senior citizens (60 and above)

III. Life Before Resettlement

12. What are the major sources of your household's livelihood in your PREVIOUS area of residence? (Encircle all answers)

1 – Farming	2 – Fishing	3 – Military / Police	4 – Government
5 – Small Business / Self-employed / Free lance	6 – Driver	7 – Teacher	8 – Employee (construction / factory/ mall)
9 – OFW Remittance	10 – Retired	11 – None	12 – Other _____

BEFORE Relocation, did your household have…

13. Did your household have? (Encircle all)	14. On a scale of 1 to 3, how would you rate the quality of each? (Encircle)		
	Inadequate	**Neither adequate nor inadequate**	**Very adequate**
a. Electricity	1	2	3
b. Water	1	2	3
c. Sewerage/ Toilet	1	2	3
d. Public Transport	1	2	3
e. Access to Medicine / Health Services	1	2	3
f. Access to Education	1	2	3

15. What was the ownership status of your house in your previous area of residence?

1 – Owner	2 – Renter	3 – Sharer

16. Did this household have enough to eat BEFORE you were relocated?

1 – Not enough to feed this household	2 – Household had enough	3 – Had more than enough to eat

17. Which of the following statements best describe your household income & expenses BEFORE you were relocated?

1 – We earn less money than we spend each month	2 – We earn about the same amount of money that we spend	3 – We earn more money than we spend each month

18. How much approximately WAS the TOTAL monthly income of your household before relocation?

Php _____

19. Did you feel safe in your PREVIOUS area of residence?

1 - No	2 – Yes

20. Construction materials of the roof (your previous house):

1 – Makeshift / tarp	2 – Light (Cogon / Nipa/ Wood)	3 – Half iron & Half concrete
4 – Tile Concrete/ Clay Tile	5 – Galvanized iron/ Aluminum	

21. Construction materials of outer walls (your previous house):

1 – Makeshift / Salvaged	2 – Light Materials (Bamboo / Cogon / Nipa/ Aluminum)	3 – Semi-concrete (half concrete and half wood)
4 – Wood	5 – Concrete/ Brick/ Stone	

IV. Life After Resettlement

22. What are the major sources of your household's livelihood NOW? (Encircle all answers)

1 – Farming	2 – Fishing	3 – Military / Police	4 – Government
5 – Small Business / Self-employed / Free lance	6 – Driver	7 – Teacher	8 – Employee (construction / factory/ mall)
9 – OFW Remittance	10 – Retired	11 – None	12 – Other _____

Access to Basic Services: do you **CURRENTLY** have…?

23. Do you have? (Encircle all)	24. On a scale of 1 to 3, how would you rate the quality of each? (Encircle)		
	Inadequate	**Neither adequate nor inadequate**	**Very adequate**
a. Electricity	1	2	3
b. Water	1	2	3
c. Sewerage/ Toilet	1	2	3
d. Public Transport	1	2	3
e. Access to Medicine / Health Services	1	2	3
d. Access to Education	1	2	3

25. What is the ownership status of your house NOW?

1 – Owner	2 – Renter	3 – Sharer

26. Did this household have enough to eat AFTER you were relocated?

1 – Not enough to feed this household	2 – Household had enough	3 – Had more than enough to eat

27. Which of the following statements best describe your household income & expenses AFTER you were relocated?

1 – We earn less money than we spend each month	2 – We earn about the same amount of money that we spend	3 – We earn more money than we spend each month

28. How much approximately is the average monthly income of your household NOW?

Php _____

29. Overall, do you think your standard of living has improved after you moved here?

1 – Got Worse	2 – Same	3 – Improved

30. Kindly elaborate on your answer for Q30. Why do you say so?

31. Do you feel safe in this relocation site?

1 - No	2 – Yes

32. Did you receive any compensation for your relocation?

1 - No	2 – Yes

33. Construction materials of the roof (your CURRENT house):

1 – Makeshift / tarp	2 – Light (Cogon / Nipa/ Wood)	3 – Half iron & Half concrete
4 – Tile Concrete/ Clay Tile	5 – Galvanized iron/ Aluminum	

34. Construction materials of outer walls (your CURRENT house):

1 – Makeshift / Salvaged	2 – Light Materials (Bamboo / Cogon / Nipa/ Aluminum)	3 – Semi-concrete (half concrete and half wood)
4 – Wood	5 – Concrete/ Brick/ Stone	

35. Have you raised concerns over any issue regarding your relocation to anyone?

1 – No	2 – Yes

36. How did the Government handle your complaint?

1 – Inadequately	2 – Adequately

37. How did the Home Association/ NGO handle your complaint?

1 – Inadequately	2 – Adequately

V. Flooding Experience (BEFORE Relocation)

38. In your previous residence, how many days does your house remain flooded in a year?

39. Approximate depth of flooding in feet? (Before relocation)

40. Major problems faced during floods: (Before relocation). Please encircle all:

1 – Destruction of house and assets	2 – Price rise in commodities	3 – Non-availability of food, medicine, and other supplies	4 – Disruption of communication
5 – Non-availability of local transport	6 – Disruption of electricity and water	7 – Non-availability of fuel	8 – Others _____

41. In your previous residence, to what extent was your house damaged on each flooding occasion?

1 – Fully damaged	2 – Partially damaged	3 – Minor damage	4 – No damage	

42. In your previous residence, whom did you rely upon to help you deal with floods / climate disasters? Check all:

1 – Government	2 – Public Facilities (school, hospital)	3 – Military / Police	4 – Civil Sociey & NGOs
5 – Church	6 – Employer	7 – Neighbor	8 – Friends
9 – Family / Relatives	10 – No One		

VI. Flooding Experience (AFTER Relocation)

43. How many days does your CURRENT house remain flooded in a year? (*If no flooding, write N/A*)

44. Approximate depth of flooding in feet? (*If no flooding, write N/A*)

45. Major problems that you currently face during floods: Please encircle all:

1 – Destruction of house and assets	2 – Price rise in commodities	3 – Non-availability of food, medicine, and other supplies	4 – Disruption of communication
5 – Non-availability of local transport	6 – Disruption of electricity and water	7 – Non-availability of fuel	9 – **No Flooding**

46. In your CURRENT residence, to what extent is your house damaged on each flooding occasion?

1 – Fully damaged	2 – Partially damaged	3 – Minor damage	4 – No damage	

47. In your CURRENT residence, whom do you rely upon to help you deal with floods / climate disasters? Check all:

1 – Government	2 – Public Facilities (school, hospital)	3 – Military / Police	4 – Civil Society & NGOs
5 – Church	6 – Employer	7 – Neighbor	8 – Friends
9 – Family / Relatives	10 – No One		

VII. Questions on Distributive Justice

To what extent do you agree or disagree with the following statement:

	Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
48. I feel that there are equal benefits for EVERYONE in this relocation site.	1	2	3	4	5
49. I feel that the programs in this relocation site help those who are most in need.	1	2	3	4	5
50. I feel that relocation has improved the lives of the poor in this community.	1	2	3	4	5
51. **EVERYONE** (women, children, elderly) in my community receives the same level of help/support in preparing for typhoons.	1	2	3	4	5
52. I feel that **EVERYONE** (women, children, elderly) in my community is given enough training to prepare for typhoons.	1	2	3	4	5
53. I feel that the government treats me with dignity and respect.	1	2	3	4	5

VII. Questions on Procedural Justice

THINK ABOUT YOUR RELOCATION EXPERIENCE: To what extent do you agree or disagree with the following:

	Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
54. I feel that I was able to take part and participate in the resettlement process.	1	2	3	4	5
55. I feel that the government listened to the people in my community before we were relocated.	1	2	3	4	5
56. The government has made/ are going to make changes in their relocation strategies because of the action taken by my community.	1	2	3	4	5
57. Do you think the authorities take ENOUGH time to consider their decisions carefully?	1	2	3	4	5
58. I have participated in activities that involved planning for relocation.	1	2	3	4	5
59. I have participated in trainings and capacity-building sessions.					
60. I feel that the government treats me with dignity and respect.	1	2	3	4	5
61. I feel that I have been provided with ACCURATE information on typhoons.	1	2	3	4	5
62. I feel that I have been provided with sufficient information on typhoons in a timely manner.	1	2	3	4	5

VIII. Questions on Recognitional Justice

THINK ABOUT YOUR RELOCATION EXPERIENCE: To what extent do you agree or disagree with the following:

	Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
63. The government asked for my opinion/ suggestion when planning my relocation.	1	2	3	4	5
64. I have been invited to a meeting/forum where I could make suggestions about my relocation.	1	2	3	4	5
65. Do you think the authorities consider the views of ALL (women, children, elderly) before making decisions?	1	2	3	4	5
66. Do you think that the authorities give opportunities for citizens to express their views before making decisions?	1	2	3	4	5

Thank you very much for your time!

Appendix 2: Survey Questionnaire (Tambaliza; In-Situ Community)

Interviewer Name: _____ Date of Interview: _____ Time: _____

I. Personal Information

1. Name of Respondent

2. Location: **(Sitio, Barangay)**

3. Respondent's Age

4. Sex of Respondent
       1 – Male   2 – Female

II. Household Information

5. Total number of household members

6. Number of males

7. Number of females

8. Number of children

9. Number of household members earning

10. Number of senior citizens (60 and above)

III. Livelihood, Access to Services, and Household Income and Expenditures

Life BEFORE the Adaptation Interventions of the NGOs:

11. What are the major sources of your household's livelihood? (Encircle all)

1 – Farming	2 – Fishing	3 – Military / Police	4 – Government
5 – Small Business / Self-employed / Free lance	6 – Driver	7 – Teacher	8 – Worker (construction / factory)
9 – Regular employee	10 – OFW Remittance	11 – Retired	12 – Unemployed
13 – Other _____			

12. Which of the following do this household have access to? (Encircle all)

1 – Telephone	2 – TV	3 – Radio
4 – Newspaper	5 – Mobile Phone	6 – Internet

13. Does your household have? (Encircle all)	14. On a scale of 1 to 3, how would you rate the quality of each? (Encircle)		
	Inadequate	Neither adequate nor inadequate	Very adequate
a. Electricity	1	2	3
b. Water	1	2	3
c. Sewerage/ Toilet	1	2	3
d. Public Transport	1	2	3
e. Access to Medicine / Health Services	1	2	3
f. Access to Education	1	2	3

15. What is the ownership status of your house?

1 – Owner	2 – Renter	3 – Sharer

16. Do this household have enough to eat?

1 – Could not feed this household	2 – Household has enough	3 – Has more than enough to eat

17. Which of the following statements best describe your household income & expenses?

1 – We earn less money than we spend each month	2 – We earn about the same amount of money that we spend	3 – We earn more money than we spend each month

18. How much approximately is the average monthly income of your household? Php _____

Life AFTER the Adaptation Interventions of the NGOs:

19. What are the major sources of your household's livelihood? (Encircle all)

1 – Farming	2 – Fishing	3 – Military / Police	4 – Government
5 – Small Business / Self-employed / Free lance	6 – Driver	7 – Teacher	8 – Worker (construction / factory)
9 – Regular employee	10 – OFW Remittance	11 – Retired	12 – Unemployed
13 – Other _____			

20. Which of the following do this household have access to? (Encircle all)

1 – Telephone	2 – TV	3 – Radio
4 – Newspaper	5 – Mobile Phone	6 – Internet

21. Does your household have? (Encircle all)	22. On a scale of 1 to 3, how would you rate the quality of each? (Encircle)		
	Inadequate	**Neither adequate nor inadequate**	**Very adequate**
a. Electricity	1	2	3
b. Water	1	2	3
c. Sewerage/ Toilet	1	2	3
d. Public Transport	1	2	3
e. Access to Medicine / Health Services	1	2	3
f. Access to Education	1	2	3

23. What is the ownership status of your house?

1 – Owner	2 – Renter	3 – Sharer

24. Do this household have enough to eat?

1 – Could not feed this household	2 – Household has enough	3 – Has more than enough to eat

25. Which of the following statements best describe your household income & expenses?

1 – We earn less money than we spend each month	2 – We earn about the same amount of money that we spend	3 – We earn more money than we spend each month

26. How much approximately is the average monthly income of your household? Php _____

IV. Housing

Life BEFORE the Adaptation Interventions of the NGOs:

27. Do you feel safe in your area of residence?

1 - No	2 – Yes

28. Construction materials of the roof:

1 – Makeshift / tarp	2 – Light (Cogon / Nipa/ Wood)	3 – Half iron & Half concrete
4 – Tile Concrete/ Clay Tile	5 – Galvanized iron/ Aluminum	

29. Construction materials of outer walls:

1 – Makeshift / Salvaged	2 – Light Materials (Bamboo / Cogon / Nipa/ Aluminum)	3 – Semi-concrete (half concrete and half wood)
4 – Wood	5 – Concrete/ Brick/ Stone	

Life AFTER the Adaptation Interventions of the NGOs:

30. Do you feel safe in your area of residence?

1 - No	2 – Yes

31. Construction materials of the roof:

1 – Makeshift / tarp	2 – Light (Cogon / Nipa/ Wood)	3 – Half iron & Half concrete
4 – Tile Concrete/ Clay Tile	5 – Galvanized iron/ Aluminum	

32. Construction materials of outer walls:

1 – Makeshift / Salvaged	2 – Light Materials (Bamboo / Cogon / Nipa/ Aluminum)	3 – Semi-concrete (half concrete and half wood)
4 – Wood	5 – Concrete/ Brick/ Stone	

V. Flooding Experience

33. How many days does your house remain flooded in a year? (*If no flooding, write N/A*)

34. Approximate depth of flooding in feet? (*If no flooding, write N/A*)

35. Effect of floods on your household:

1 - High	2 - Medium	3 - Low	4 – No impact

36. Major problems that you currently face during floods: Please encircle all:

1 – Destruction of house and assets	2 – Price rise in commodities	3 – Non-availability of food, medicine, and other supplies	4 – Disruption of communication
5 – Non-availability of local transport	6 – Disruption of electricity and water	7 – Non-availability of fuel	9 – **No Flooding**

37. Damage to house on each flooding occasion?

1 – Fully damaged	2 – Partially damaged	3 – Minor damage	4 – No damage

38. In your CURRENT residence, whom do you rely upon to help you deal with floods / climate disasters? Check all:

1 – Government	2 – Public Facilities (school, hospital)	3 – Military / Police	4 – Civil Society & NGOs
5 – Church	6 – Employer	7 – Neighbor	8 – Friends
9 – Family / Relatives	10 – No One		

VI. Questions on Climate Change Adaptation Projects:

CLIMATE CHANGE refers to increased frequency and magnitude of rainfall AND drought, as a result of global warming.

39. Do you feel well informed about the range of DRR/CCA projects in your community?

1 - No	2 - Yes

40. In general, do you think the climate adaptation projects brought mainly positive, negative, or no significant change to your community?

1 – Negative	2 – No Significant Change	3 – Positive

41. Do you feel that enough is being done by the public authorities to address climate change / prevent flooding in your area?

1 - No	2 – Yes

42. In the past 3 years, have you done anything personally (either directly or indirectly) to reduce climate risk or risks resulting from climate change?

1 - No	2 – Yes

43. What are the coping strategies used by your household/family in response to Climate Change like sea level rise, monsoon rains and floods? (Verbatim Answers)

VII. Questions on Distributive Justice

To what extent do you agree or disagree with the following:

	Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
44. I feel that the adaptation programs equally benefit everyone in my community.	1	2	3	4	5
45. I feel that the adaptation programs help those who are most in need.	1	2	3	4	5
46. I feel that the adaptation programs improve the lives of the poor in my community.	1	2	3	4	5
47. Everyone in my community received the same level of help/support in preparing for typhoons.	1	2	3	4	5
48. I feel that everyone in my community is given enough training to prepare for typhoons.	1	2	3	4	5

VIII. Questions on Procedural Justice

THINK ABOUT YOUR EXPERIENCE WITH THE NGOS' CLIMATE ADAPTATION PROJECTS: To what extent do you agree or disagree with the following:

	Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
49. The NGOs asked for my opinion/ suggestion when planning climate adaptation projects.	1	2	3	4	5
50. The NGOs have made/ are going to make changes in their adaptation projects because of the action taken by my community.	1	2	3	4	5
51. Do you think the NGOs take ENOUGH time to consider their decisions carefully?	1	2	3	4	5
52. I have participated in trainings and capacity-building sessions.					
53. Do you think NGOs consider the views of ALL sides before making decisions?					
54. I feel that the NGOs listened to the people in our community as they craft climate adaptation projects.	1	2	3	4	5
55. I feel that I have been provided with ACCURATE information on typhoons.	1	2	3	4	5
56. I feel that I have been provided with sufficient information on typhoons in a timely manner.	1	2	3	4	5

IX. Questions on Recognitional Justice

THINK ABOUT YOUR EXPERIENCE WITH THE NGOS' CLIMATE ADAPTATION PROJECTS: To what extent do you agree or disagree with the following:

	Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
57. The government asked for my opinion/ suggestion when planning climate adaptation projects	1	2	3	4	5
58. I have been invited to a meeting/forum where I could make suggestions about climate adaptation projects.	1	2	3	4	5
59. Do you think the authorities consider the views of ALL (women, children, elderly) before making decisions?	1	2	3	4	5
60. Do you think that the authorities give opportunities for citizens to express their views before making decisions?	1	2	3	4	5
61. I feel that I was able to take part and participate in the climate adaptation projects.	1	2	3	4	5
62. I feel that the government treats me with dignity and respect.	1	2	3	4	5

Thank you so much for your time!

Appendix 3: Interview Guide (San Isidro Resettlement Site)

Respondent No: _____
Interviewer: _____
Research Assistant: _____
Venue: _____
Date: _____
Start Time: _____
End Time: _____

    I.   Socio-demographic Information
1. Name
2. Current Residential Address
3. Age
4. Civil Status
5. Number of Children
6. Size of the household
7. Occupation

    II.   **Experience with Climate Change related events (e.g. Typhoons, Sea Level Rise, etc.)**
1. Have you experienced climate-change related events in the past? What are these?
2. How did the local community respond to the events?
3. How did the government respond to the events?
4. How did groups, NGOs, and civil society respond?

    III.   Before Resettlement
1. Can you describe your livelihood experience before being resettled?
   a. What were your major sources of livelihood?
   b. What types of work were you engaged in?
   c. Did you have access to any livelihood development programs? Who provided these services, and were these helpful?
2. Did you have access to trees, vegetation, river, and other natural resources before being resettled?
   a. If yes, please tell me more about it. What types of natural resources were available? How productive were these resources?
   b. If no, how did you get your food and other resources?
3. Did you have access to electricity, water, and sanitation services before being resettled?
   a. How did you like / dislike these services?
   b. Have they been adequate to support your livelihood? Why or why not?
4. Did you have access to any health care facilities before you were resettled?
   a. What type of services and how often did you avail of such services?
   b. Are you happy with these services? Why or why not?
5. Did you have access to education services (for you or your children) then?
   a. What type of services and how often did you avail of such services?
   b. Are you happy with these services? Why or why not?
6. Social Networks: How would you describe the type of relationship that you had with others (neighbors, friends, and family) in your previous area of residence?
   a. Did you have people to rely on for personal problems / concerns? Who were these?
   b. Were you involved in community activities / projects? What were these?

    IV.   Resettlement Process

1. When were you relocated, and what happened?
2. Did you know anything about the area where you will be relocated? How did you get this information?
3. Was there any consultation or negotiation about the planned resettlement? To what extent were you involved in the decision making process?
4. Were you given any compensation?
    a. What type?
    b. Did you have to pay anyone in order to obtain this compensation?
    c. Are you satisfied with the amount provided? Why or why not?
5. Did you freely agree to be relocated? How did you make this choice and why?
6. Is there any system in place where you can raise concerns regarding your relocation?
    a. Who should you talk to?
    b. Have you heard anything after you raised your concerns? How long did it take them to respond?
    c. Are you happy with how they handled your complaint?

V.   Life After Resettlement
1. Can you describe your current livelihood experiences?
    a. What are your current sources of livelihood?
    b. What types of work are you currently engaged in?
    c. Do you currently have access to any livelihood development programs? Who is providing these services, and are these helpful?
2. What are the types of natural resources that are available in this new area? Do you have access to these? How productive are these resources?
3. Do you currently have...
    a. Adequate housing and shelter? Please explain.
    b. Access to basic services such as electricity, water and sanitation? Please elaborate.
    c. Access to health care services and medicines? Please explain.
    d. Access to educational services? Please explain.
4. How would you describe the community that you are part of in this resettlement area?
    a. Do you have people to rely on for personal problems / concerns? Who are these?
    b. Are you involved in any community activities / projects? What are these?
5. What are the challenges you are currently facing in your new area?

Appendix 4: Interview Guide (Tambaliza)

Respondent No: _____
Interviewer: _____
Research Assistant: _____
Venue: _____
Date: _____
Start Time: _____
End Time: _____

    I.   Socio-demographic Information
1. Name
2. Current Residential Address
3. Age
4. Civil Status
5. Number of Children
6. Size of the household
7. Occupation

    II.   Experience with Climate Change related events (e.g. Typhoons, Sea Level Rise, etc.)

1. Have you experienced climate-change related events in the past? What are these?
2. How did the local community respond to the events?
3. How did the government respond to the events?
4. How did groups, NGOs, and civil society respond?
5. To what degree were local community members able to organize themselves after every climate-related events?

    III.   Climate Change Adaptation Projects in the Community

1. Local Community Initiatives
    a. What are the initiatives of your community members to prepare you for climate change, typhoons, etc.?
    b. In general, do you think these community climate adaptation projects brought positive, negative, or no significant change for your community? Please explain how your household benefitted or did not benefit from these projects.
    c. Who do you think benefitted from the projects? Why? In your opinion, how did they benefit?
    d. Who do you think were severely affected by the projects? Why?

2. Government Initiatives
    a. What are the measures, policies, and projects taken by the government to prepare you for climate change, typhoons, etc.?
    b. In general, do you think these community climate adaptation projects brought positive, negative, or no significant change for your community? Please explain how your household benefitted or did not benefit from these projects
    c. Who do you think benefitted from the projects? Why? In your opinion, how did they benefit?
    d. Who do you think were severely affected by the projects? Why?
    e. Do you feel that enough is being done by the government agency to respond/prevent flooding in your area? Why or Why Not?

3. Personal Initiatives
    a. In the past 3 years, have you done anything personally (either directly or indirectly) to reduce climate risk or risks resulting from climate change?
    b. If yes, what are these?
    c. If not, why not?

4. What new services came during/ after/ because of the climate adaptation projects?
   a. Are these beneficial to your household? How are they beneficial or not beneficial?

5. Were you made aware of the climate adaptation projects before these were implemented?
   a. Do you think that everyone received information? How?
   b. Do you think that people were genuinely consulted? Why / why not?
   c. Do you have the opportunity to share your ideas with people who make policy decisions?

6. Did you participate in any of the climate adaptation projects?
   a. If yes, how?
   b. Do you think you, your neighbors, and other community members should participate in projects like this? How (in what capacity)? Why?

7. What did you think was good about the project/s and how it was done?

8. What did you think was NOT good about the project/s and how it was done?

9. Have you experienced any type of disturbance due to the climate adaptation projects? If yes, what are these?

10. Did any community member seek for your help regarding the impacts due to the implementation of the climate adaptation project? If yes, please explain.

11. Do you think the climate adaptation projects present a threat to future generations? How?

12. Did the community members receive compensation if they have lost assets due to climate adaptation projects?

13. Do you have any suggestions for how the project/s could have been done better / differently?

Thank you very much for your time!

Appendix 5: Interview Guide (Government / NGO Officials)

Respondent ID: _____
Interviewer: _____
Research Assistant: _____
Venue: _____
Date: _____
Start Time: _____
End Time: _____

I.   Socio-demographic Information
1. Name
2. Age
3. Civil Status
4. Size of the household

II.   Work Information
1. Is your organization / department involved in climate change adaptation?
    a. If yes, what does it do?
    b. If no, should it be?
        i. For what reasons?
        ii. What prevents this work if you feel it is needed?
2. What is your role / job in the climate change adaptation programs/projects of the government?
    a. Who do you work with?
    b. What were the primary outcomes of your work?
3. How did you get involved in climate change planning? How long have you been in this position?
4. What is your educational and professional background? What do you consider your primary area of expertise, and how does this relate to your current role?

III.   Climate Change Adaptation Projects of the NGO/ Government

1. What policies, projects, and interventions has the NGO/city started to implement to address climate change?
    a. Which among these are the most successful? Why?
    b. Which among these needs improvement? Why?
2. What public and private actors are involved in the process of developing climate change adaptation plans, policies, and projects in Iloilo City? What is the method of selection for inclusion in the planning / policy development process?
3. How is the information communicated to the local community members?
4. What are the main priorities of the climate adaptation plan? How were these priorities decided / selected?
5. How were different / conflicting viewpoints handled in the planning process?
6. What information / forms of expertise were most valuable during the planning process? Which ended up more difficult to incorporate?
7. Do you think the current climate adaptation initiatives are equitable? Why / Why Not?
8. Do you think your community is well prepared and ready for climate change related events?

IV.   Risk & Vulnerability

1. Are there any sectors of society that seem very vulnerable to climate change? (e.g. agriculture / fisheries/ etc.)
    a. Where do you think the responsibility for responding primarily lies?
    b. Who do you think should pay for these actions?
    c. What role do you think your department / group should play?
2. Are there any places that seem very vulnerable?
    a. Where do you think the responsibility for responding primarily lies?
    b. Who do you think should pay for these actions?
    c. What role do you think your department / group should play?
3. Are there any groups of people that seem very vulnerable? (e.g. elderly, women, etc.)
    a. Where do you think the responsibility for responding primarily lies?
    b. Who do you think should pay for these actions?
    c. What role do you think your department / group should play?

V. Decision-Making & Responsibility

1. In general, do you think decision making on climate adaptation is effective at present?
    a. Why / Why not?
    b. How do you think can this situation be improved?
2. Who do you think are your constituents / community stakeholders?
    a. How does your department/ group engage with these groups?
    b. Which groups do you communicate with frequently?
    c. Are there groups which you wish to engage more in the future? Why do you say so?

Thank you very much for your time!

PARTICIPANT INFORMATION STATEMENT

PhD Research Project:
Assessing Justice and Re-Imagining Alternatives to Climate Change Adaptation: the Case of Iloilo, Philippines

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	Email address: 19134074@students.latrobe.edu.au
Course of Study	PhD in Community Planning & Development
Supervisors	Name: Dr. Katharine McKinnon
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	Name: Dr. Brooke Wilmsen
	Email: b.wilmsen@latrobe.edu.au

Dear Maam/ Sir:

You are invited to take part in this research project because you are part of a community that has either experienced climate change adaptation interventions or is currently preparing for the impacts of climate change in the future. This research project interrogates the prospects for just and fair climate change adaptation programmes.

This Participant Information Sheet tells you about this research project and explains the methods and types of data collection involved. Please take time to read this information sheet carefully. Ask questions about anything that you don't understand or want to know more about. Participation in this research is voluntary. If you don't wish to take part, you don't have to. However, if you wish to participate, you will be asked to sign the **"Consent Form"** section.

In order to participate, you must:
- Be 18 – 60 years old
- Have experienced flooding / climate change-related events in the past
- Have undergone or been part of any climate change adaptation interventions in the community

If you agree to participate, an interviewer will conduct a short 20 minute survey in your place of residence. The survey will obtain general information about your household, your past experiences with flooding / climate risks, as well as your assessment of climate change adaptation interventions in your community. The information that will be collected will serve as input for this Ph.D. study. All data collected will be treated confidentially and used solely for academic purposes.

Aside from a small token of appreciation for your time and participation, your insights may provide an opportunity to contribute to research that might help inform development policy and interventions for crafting just and fair climate change adaptation programmes in your community. On the other hand, there are very little / almost no physical risks involved in taking part in this project. However, this survey can take up some of your time, especially if you feel you have other more important / urgent things to do than to answer this survey.

Any information obtained for the purpose of this research project that can identify you will be treated as confidential and securely stored. We have put in measures to maintain your confidentiality throughout this research process. These include the following:
- Each participant will be assigned a unique identification code. Only researchers involved in the project can identify the participant from this subject code.
- A paper copy of the subject codes will be kept in a locked cabinet in the researcher's office, which only she will have access to.

- An electronic copy of the data (which only identifies participants by their subject code) will be stored in a secure computer folder. This folder will require a unique username and password to access information, which is only known to the research team.

After the project ends and the information is analysed, a report will be written up. This report summarises the results of the whole study. A copy of this report can be mailed to or emailed to you if you are interested. Personal data that has been collected in the course of this research will be made available to you upon your request. Following this, the project team will seek to publish this as an article in relevant journals, as well as present the findings in conferences. Please note that only group data will be reported and you will not be individually identified in any of the reports.

You have the right to withdraw from active participation in this project at any time. You are asked to complete the "**Withdrawal of Consent Form**" or to notify the researcher by email or telephone that you wish to withdraw your consent for your data to be used in this research project.

If you do withdraw your consent during the research project, the study team will not collect further personal information from you, although personal information already collected will be retained to ensure the results of the research project can be measured properly. You should be aware that data collected by the team up to the time you withdraw will form part of the research project results. If you do not want them to do this, you must tell them before you join the research project.

Any questions regarding this project may be directed to Justin Charles See, PhD Student of the School of Humanities and Social Science, on 19134074@students.latrobe.edu.au or +61 449198732. Alternatively, you may direct any questions through the Research Assistants working with Justin.

If you have any complaints or concerns about your participation in the study that the researcher has not been able to answer to your satisfaction, you may contact the Senior Human Ethics Officer, Ethics and Integrity, Research Office, La Trobe University, Victoria, 3086 (P: (+61) 03 9479 1443, E: humanethics@latrobe.edu.au).

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