

Challenges and opportunities for sustainable post- disaster resettlement in the Philippines

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Abstract

The catastrophic effects of natural hazards cause temporary or permanent displacement of people. In the aftermath of a disaster, resettlement is often implemented to reduce future risks. People are also resettled when they cannot go back to their place of origin due to detrimental changes in environmental conditions. This study examines people's experiences in post-disaster resettlement in the Philippines. The country is highly vulnerable to natural hazards and a vast number of people are displaced by disasters and thus forced to resettle every year. The study builds upon Scudder and Colson's seminal framework that identifies four successive stages in the resettlement process. It uses qualitative research methodology to provide a case comparison analysis of resettlement following the 1991 eruption and subsequent lahars of Mt. Pinatubo, the 2006 Mt. Mayon eruption, Typhoon Sendong in 2011 and Typhoon Yolanda in 2013.

The study shows that access to government services and employment, distance from social ties, places of origin and work, resettlers' participation in the resettlement process, and resettlement governance affect resettlement outcomes. These factors influence how quickly people settle in their new home and move through the different resettlement stages. The study also finds that if the social, cultural, and economic needs of the resettlers are neglected, it is then hard to reach the long process of development and incorporation. Thus, this study raises a need to ensure the resettler's participation in decision-making throughout the resettlement process, to enable a more organic and sustainable resettlement.

Key words: disaster, displacement, post-disaster resettlement, resettlers, livelihood

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Chapter 1. Introduction

The temporary or permanent displacement of a vast number of people caused by natural hazards has become more prevalent over recent years (Davis & Alexander, 2016). Reports show that natural hazards have caused 24.9 million new internal displacements in 2019 (Internal Displacement Monitoring Centre [IDMC], 2020). In order to avoid continued or expanded vulnerability to natural hazards, resettlement is often implemented (Oliver-Smith, 1991). Resettlement is also carried out when people cannot go back to their original dwellings anymore because of the destructive change in environmental conditions brought about by the natural hazards themselves (Oliver-Smith & Hansen, 1982). For example, areas affected by the 1991 Mt. Pinatubo eruption and lingering lahars in the Philippines rendered surrounding environs unlivable and untillable due to the pyroclastic deposits from the volcano which kept the land hot for 5 to 10 years (Tayag & Punongbayan, 1994).

However, various scholars perceive resettlement through relocation as the worst approach to post-disaster recovery (Oliver-Smith, 1991; Quarantelli, 1985). This is because it does not capture economic, political, or sociocultural factors that people associate themselves with in their places of origin (Oliver-Smith, 1991). Resettlement, according to Quarantelli (1985) is “moving a way of life, not only of where people live, but where they work, where they play, where they worship, and where they carry out the multiple integrated functions that constitute social life” (p.90). It is an intricate process and thus disaster authorities need to be more aware of the appropriate solutions in post-disaster resettlement.

With this, sustainable ways of rebuilding and recovery are significant (Luchi, 2014; Keraminiyage & Piyatadsananon, 2013). This goes beyond providing shelter and housing, as social aspects are equally important in the place where people live (Luchi, 2014). This aligns with the concept of “building back better”, which proposes an integrated way of addressing post-disaster reconstruction challenges (Davis, 1975; Haas, Kates & Bowden, 1977; Cuny, 1983; Kennedy, Ashmore, Babister & Kelman, 2008).

It has been widely recognised that success or failure of resettlement efforts depend upon a holistic set of factors which include physical, economic, legal, and social aspects (Quarantelli, 1985; Oliver-Smith, 1991; Cernea, 1997). While presenting different factors that could lead to sustainable resettlement has been commonly discussed and studied in the research space, there is little focus on determining how these factors affect resettlement projects in different resettlement stages.

With this in mind, this study aims to analyse post-disaster resettlement in the Philippines over the past three decades and how it affects the condition of human lives. The Philippines recorded over four million people displaced by disaster in 2019 only, one of the highest figures worldwide (IDMC, 2020). The country has high vulnerability to natural hazards due to its geographical location and its physical, socio-economic, and political environment (Luna, 2011). In the aftermath of a disaster, the

Philippine government and other implementing agencies usually put in place the resettlement of people away from hazard prone areas (Yee,2018; Cuaton, 2019). However, this often poses a lot of challenges and hardships for those who are resettled when it comes to adjusting to their new “home” (Thomas, 2015).

The study is particularly guided by the following questions:

- What are the factors that contribute and hinder the sustainability of resettlement?
- How do these factors affect the resettlement stages reached in a resettlement project?
- Why do most resettlement projects fail to reach expected stages of development and incorporation?
- What are some lessons for enhancing post-disaster resettlement policies?

Using secondary data, this study approaches these questions with a case comparison analysis, investigating four disastrous events that happened in the Philippines from 1991 to 2013. These are the 1991 Mt. Pinatubo eruption and subsequent lahars, the 2006 Mayon volcanic eruption, Typhoon Sendong in 2011, and Typhoon Yolanda in 2013. All of these events have forced a large number of people to resettle.

Chapter 2. Review of Related Literature

2.1 Major actors and their various roles and interests in resettlement

The intensity of internal displacement requires the involvement and coordination of many different actors. In the aftermath of a disaster, there are different groups, authorities and organisations that implement the resettlement projects. Proper collaboration among these actors is imperative to maximise the use of resources, capacities, and skills (Kellenberg, 2009).

According to the United Nations Guiding Principles on Internal Displacement, national governments and local authorities are mainly responsible for the protection of internally displaced people (IDPs) during resettlement (United Nations High Commissioner for Refugees [UNHCR], 1998). The Philippine Disaster Risk Reduction and Management Act of 2010 (the legislation on disaster preparedness, response, and recovery) also stipulates that the government, specifically the National Economic and Development Authority (NEDA), should lead any resettlement activities in the country. When a disaster occurs, the government prioritises helping the affected population to bounce back and sustaining the functions of government (International Labour Organisation [ILO], 2015). Local governments have an advantage in identifying and understanding their own community's needs and resources (Kellenberg, 2009). Moreover, Shaw & Sinha (2003) stated that resettlement that is handled by the government tends to be more sustainable as compared to those handled by other organisations who tend to leave the site after a certain time period.

Nonetheless, the contribution of non-governmental organisations (NGOs) is also beneficial in improving the overall wellbeing of resettled households. Vakil (1997) defined NGOs as “self-governing, private, not-for-profit organisations that are geared towards improving the quality of life for disadvantaged people” (p.2060). This could be through the provisioning of resources not locally available in the community. This was the case in Pakistan after the extreme flooding in 2010. In their study, Jamshed, Rana, McMillan & Birkmann (2019) ascertained that communities resettled by NGOs had increased resilience by being provided with livelihood opportunities, livelihood skill development based on local market demands, training in the maintenance and operation of various facilities of the modern village, and more comprehensive educational opportunities, especially for women.

The role of the international community is also crucial in enhancing the resettlement conditions of IDPs. During a severe flooding incident in Mozambique in 2000, international NGOs were considered as central organisations in humanitarian aid operations. In post-disaster activities including resettlement, national agencies and organisations appeared to rely on INGOs' resources, expertise and centrality in the humanitarian aid network since INGOs tend to have more logistical capacity, precise information, and financial sources (Moore, Eng & Daniel, 2003). INGOs also have a high degree of influence in humanitarian response and development and sustaining their legitimacy is important to them (Action Against Hunger, 2017; Accountability Charter, 2014).

Along with the government, NGOs, and INGOs, the private sector is also a significant stakeholder in post-disaster resettlement. During disasters, private companies provide support to affected people through mobilising their resources, employees, and suppliers (ILO, 2015). For instance, some companies, particularly those in the engineering and construction sector, were involved in the recovery phase after Typhoon Yolanda passed through the Philippines in 2013. Technical housing-development competence and equipment, site development, housing design, and construction were some of the private sector's contributions in resettlement. During the resettlement process, they developed partnerships with local people and government agencies (ILO, 2015).

Aside from external support groups, resettlement can also be managed by the resettled communities themselves. This is called an owner-driven approach wherein the beneficiaries gain full control in housing reconstruction. People plan and implement resettlement activities by themselves since they recognise that they need protection from natural hazards (Luna, 2001). In a study about post-tsunami housing reconstruction in Sri Lanka, results showed that beneficiaries preferred an owner-driven approach rather than a donor-driven approach. In an owner-driven approach, Sri Lankan communities were more satisfied in terms of house durability and location, integration of beneficiary requirements in the design stage, land size, and the availability and flexibility of space (Karunasena & Rameezdeen, 2010).

2.2 Resettlement stages

Scudder & Colson (1982) discussed that relocation occurs in four phases. These are the recruitment stage, transition stage, stage of potential development and handing over or incorporation stage. In the recruitment stage, the decision that people should be relocated is made by implementing agencies. The location and process of resettlement is also determined. In this stage, it is important for the authorities to understand the sociocultural aspects of those who will be resettled. They should also identify how these aspects will impact people's reactions to their relocation and the new environment.

The next stage is the transition stage. This phase represents the first time that the population at risk becomes involved in the process of relocation. Here, the majority of resettlers tend to be conservative and focus on their own interests and problems to lessen the likelihood of experiencing additional stress. This stage usually takes more than two years.

The stage of potential development comes next. An indicator of this is the enhancement of the standard of living of a large proportion of the resettled population. This can be measured through an increase in health differentials, social stratification, and class structure. Increased initiative and risk-taking are also observed in this stage. However, this stage is rarely achieved in many resettlement areas.

The incorporation stage is the last resettlement phase. It is also called the handing over stage because in this phase, local administration and development is handed over to a second generation within the resettled population. This stage can be reached when external agencies' operations and support is phased-out and when local government agencies take over their responsibilities. However, like the stage of potential development, this stage is also rarely realised (Scudder & Colson, 1982).

Various scholars acknowledge that one of the strengths of Scudder and Colson's framework is that it is a useful tool in presenting resettler's behaviour across the resettlement phases (for example, see Das, 1996; De Wet, 1988 & Koenig 2002). According to Das (1996), this was made possible by conceptualising resettlement in a temporal context. The model also considers how the challenges that people experience in their resettlement limit their coping strategies to resolve these obstacles (De Wet, 1988). It also implies that some resettlement projects turn out to have better outcomes than others and that recognising the social components involved in resettlement can lead to its ultimate sustainability (Partridge, 1989). The framework presents not just the experiences of resettlers in different phases but also demonstrates the issue of power relations within the resettled population and the broader political and economic structures that manifest during the resettlement process. However, further analysis of this issue is needed (Koenig, 2002). Another advantage of the framework is that it also covers involuntary resettlement (Cernea, 2004).

The significance of further developing economies in resettlement sites is also highlighted in the framework. Cernea (1995) draws on Scudder and Colson's framework to describe a resettler's income curve upon displacement. According to Cernea, income flow involves different stages: slow income growth before resettlement; a decreasing trend upon resettlement which remains flat during their transition to the resettlement site, and then a potential increase in income during the recovery stage. Cernea uses these phases to argue that restoration of income levels of the resettlers prior to resettlement cannot be achieved simply by compensating lost assets.

On the contrary, scholars have also critiqued the model. One of the main limitations is that it could generalise how resettlers react to different resettlement stages, thereby overlooking the differences of responses across various situations (De Wet, 1988 & Partridge, 1989). Cernea (2004) also noted that the model does not apply to resettlement projects that do not reach stages of potential development and incorporation and does not show the potential effects of unsuccessful involuntary resettlement. Furthermore, Scudder and Colson's framework focuses on the stress dimension of displacement and resettler behaviour and response in each stage, but does not fully capture the essence of displacement, which can be better explained by economic, cultural, and social impoverishment (Cernea, 1995). He added that there is a need to integrate stress into the impoverishment model to allow for the transition from merely describing the traumas experienced in resettlement to determining trends and recommending actual solutions to the problems.

2.3 Resettlement challenges and opportunities

Cernea (1997) discussed that during resettlement, displaced populations deal with eight impoverishment risks. These are landlessness, joblessness, homelessness, marginalisation, food insecurity, loss of access to common property resources, increased morbidity, and community disarticulation. The intensity of these risks varies depending on various circumstances. To appraise these issues, Cernea (1997) developed the risk and reconstruction model. Here, specific risk-reversal strategies supported by adequate funding are suggested for the reconstruction and improvement of the livelihoods and wellbeing of displaced peoples.

The first risk, landlessness, is where people lose both natural and man-made assets. In consequence, Cernea (1997) suggests that land-based re-establishment would ensure that people be provided with the same type of land they had in their original dwellings. An example is converting unproductive land in resettlement sites into arable land, which the settlers can use for the cultivation of food crops (Cernea, 1997). This strategy is more effective than just compensating the resettlers with cash, which is usually not sustainable. Providing secure land tenure is also important, as was evidenced in the case of Jimani, Dominican Republic. Two years after a debris flow in the area, land titles were awarded to the residents and new houses were constructed further from the hazard prone area, which then reduced their overall vulnerability to these hazards (Doberstein & Stager, 2013).

Another risk brought about by resettlement is joblessness. Job loss caused by displacement badly affects the economic and psychological wellbeing of people. The resettlers do not usually feel this problem immediately because some of them are involved in recovery projects within the community after a disaster. However, these project-related jobs are not sustainable. Cernea's (1997) model suggests the implementation of activities which can bring stable incomes for the resettlers. One way is through providing the resettlers with vocational training where they can acquire new skills. Because this does not assure them of getting jobs, the provision of actual employment following the skills training is also important. However, this is challenging because implementing agencies often lack the adequate resources for such a long-term investment. A lack of commitment and interest can also be observed from the resettler's perspective as there could be a mismatch between the skills that they want to learn and the ones being offered by the implementing agencies. Resettlement in Indonesia following the 2004 tsunami revealed that the availability of long-term support in providing sources of incomes for the resettlers was seen as one of the most significant factors in influencing how people developed their economic resilience going forward. The income-generation needs of the resettled communities are sustained through skills training, business mentoring, and lending programmes provided by public and private organisations (Sina, Chang-Richards, Wilkinson & Potangaroa, 2019).

Resettlement also leads to the risk of homelessness. This could become worse if resettlement in emergency shelter facilities, temporary relocation camps, and permanent housing are inadequately planned. The concept of homelessness goes beyond losing physical housing. It encompasses a sense

of identity that a home provides and that reflects deep-seated historical, social, and cultural heritages. Cernea (1997) noted that appropriate preparation and sufficient funding for housing reconstruction is essential. Resettlement policies should also include improvement in housing conditions such as larger houses and lot sizes, the use of more durable materials in housing construction, and the availability of basic needs and services. These enhancements elicit the interest of the resettlers and even encourage them to use personal savings to complement compensation on a voluntary basis (Cernea, 1997). In Jimani, Dominican Republic, permanent housing was constructed in the resettlement site with reinforced concrete blocks and were designed with a second floor, which could serve as a safe area for residents in the event of additional flooding. These housing improvements reduced the resident's vulnerability to debris flow (Doberstein & Stager, 2013). This was also evident in a case study in Muhipler village in Gediz, Turkey wherein the lot size given to the people in the resettlement site was sufficient and this allowed them to be actively involved in the resettlement process through the development and expansion of their dwellings (Oliver-Smith, 1991).

Aside from the above risks, resettlement could also cause further marginalisation whereby families lose economic control and their social status declines. Human capital is wasted, and most people become counterproductive in the resettlement site as they cannot apply the previous skills that they have. For instance, farmers may no longer use traditional farming strategies due to the lack of arable land in the resettlement site (Zulauf, 2012). With this, Cernea (1997) suggests social inclusion in the risk and reconstruction model. Similarly, Doberstein & Stager (2013) explain how community involvement in resettlement decision-making, such as choosing resettlement sites and housing design is imperative for sustainable post-disaster vulnerability reduction.

Resettlers may also have to deal with increased morbidity and mortality. Displacement causes social stress, insecurity, and psychological trauma, which then poses a serious decline in health. People also become vulnerable to epidemic diseases due to unsafe water sources and poor drainage systems in some resettlement sites. It is therefore vital to employ better sanitation practices and health care for the displaced. This can be done by providing a safe and sufficient water supply, adequate sewerage and sanitary waste systems, and a dialogue around contextually-appropriate hygiene and sanitation practices in the area (Cernea, 1997). Taking the case of resettlement as part of the government's flood protection programme in Latin America, Correa (2011) pointed out that the health of resettled families improved due to the adequate sanitary conditions provided in new resettlement sites.

Resettlement also increases the risk of food insecurity. It may take years to rebuild regular food production capacities at a relocation site. This results in a decline in food crop availability, followed by undernourishment and hunger. Adequate nutrition should thus be ensured during resettlement through the establishment of sufficient food sources for resettlers as well as raising awareness of how to sustain food supplies (Cernea, 1997). In his research in Ethiopia, Zeleke (2016) found that the resettlement programme implemented by the government helped to increase household crop production and

positively influenced food security in the area through increased livestock production and utilisation of fertilisers.

Loss of access to common property (for example, public quarries, grazing land and schools) also serves as a risk when being resettled. Government relocation programmes do not usually account for this as they prioritise the provision of physical houses (Cernea, 1997). Consequently, displaced groups tend to add pressure on the host population's common property resources. This creates a negative relationship between the host population and resettlers. The restoration of community assets should therefore be implemented (Cernea, 1997). In a longitudinal study by Dias, Keraminiyage & De Silva (2016) in Sri Lanka, it was revealed that the establishment of spaces for social gatherings and activities is an indicator of long-term satisfaction of the affected communities after the 2004 Indian ocean tsunami.

Lastly, social disarticulation is also likely to occur during resettlement. Forced displacement disintegrates social organisation patterns and disperses kinship groups, which result in the loss of social capital. This, however, is still disregarded by planners due to their lack of understanding of the deeper sociocultural and psychological aspects of the resettlers' needs. The risk and reconstruction model thus proposes community reconstruction through giving the resettlers access to their existing social ties or through the establishment of new groups in the new site (Cernea, 1997). This could be formal groups where members are elected or appointed or informal groups where people organically organise themselves into groups that they personally identify with. Likewise, Ingram, Franco, Del Rio & Khazai (2006) emphasise in their study about post-tsunami resettlement in Sri Lanka that constant community consultation processes, support and updates are critical in helping minimise uncertainty in resettlement sites.

Cernea's (1997) risk and reconstruction model has been widely used in resettlement research and projects. However, other scholars question the model's applicability and adequacy. For example, Xiao, Liu, & Feldman (2018) argue that livelihood reconstruction should also cover urbanisation and capitalisation trends, both of which are not reflected in Cernea's model. Also, some components of the framework are not suitable to other cultures. For instance, Xiao et al. (2018) in their assessment of the risk and reconstruction framework in China found that the land-based reestablishment that Cernea proposed is not applicable to some cases in the country. Another shortcoming of the model is that it does not address unequal power relations in terms of the identification of resettlement sites and the selection of beneficiaries. The model also only suggests tokenistic involvement of the resettlers rather than their genuine participation in developing and adjusting to their new home (Edington, 2014).

2.4 Factors affecting resettlement outcomes

2.4.1 Physical factors

One of the main problems faced after a disaster is the lack of vacant or unused relocation land available for affected communities (Quarantelli, 1985). This impedes the reconstruction of new houses and the sustainability of the resettlers' incomes on the new site (Zulauf, 2012).

Failure to properly assess the resettlement site and a lack of concern for the environment and economy is another issue. Instead of prioritising community and environmental welfare and development, post-disaster resettlement sites are often selected with other considerations, known as "speedy solutions". Some examples are easing acquisition of land and the rapid building of houses to maximise the use of resources. Hence, the disaster-affected communities can then face other threats to their survival without compounded vulnerability. For instance, resettlers could encounter another kind of hazard in the resettlement site caused by substandard materials being used in housing construction (Oliver-Smith, 1991).

Distance from resources also affects the success or failure of resettlement (Quarantelli, 1985). One example is the distance of the resettlement site from the resettler's school and workplace. According to Cernea (1997), longer average distances to travel and higher costs of transport are common constraints due to concerns on affordability. On the other hand, the provision of services that have not been made available at old sites attracts people to the new resettlement site, such as multi-purpose gyms and a marketplace (Oliver-Smith, 1991).

Housing design and construction are other factors. Oliver-Smith (1991) discusses that people tend to abandon the resettlement site due to their discontent with the housing layout. Poor layout of the houses can also trigger psychological trauma after a disaster. Results of a study conducted by Zulauf (2012) showed that the residents of Santa Maria in Nicaragua experienced daily psychological stress in the resettlement site due to unfamiliarity with the arrangement of the surroundings, lack of privacy, and lack of access to land.

2.4.2 Legal and political factors

In many countries, the persistence of inappropriate resettlement implementation is due to the lack of national policy and legal frameworks that provide the rights and entitlements of displaced people (Cernea, 1997). Consequently, there have been recurring cases of resettlement without considering the needs of the resettlers themselves.

Legal factors affecting resettlement outcomes also include land ownership. For instance, land titles are uncertain in some countries as there are tracts of land that are considered as communal

property. This complexity in land ownership delays the whole resettlement process as other stages of resettlement such as the construction of houses and other facilities on new sites depend on the identification of and right to land. Governments and other implementing agencies therefore try to avoid resettlement as much as possible (Quarantelli, 1985).

It is easier for the government to avoid resettlement than initiating or endorsing it (Quarantelli, 1985). This is because territoriality, structures of leadership and relationships between groups affect resettlement (Oliver-Smith, 1991). Furthermore, current social and power structures are violated because the resettlement process proceeds within a constricted time period. As a result, it becomes difficult to ensure fair participation in resettlement decisions (Luchi, 2014).

Gaps identified in policies affect resettlement outcomes. First is that there is limited consultation with the resettled communities in terms of decision-making regarding their resettlement (Oliver-Smith, 1991). The weak relationship between implementing agencies and resettling communities is therefore a common cause of relocation failure (Cernea, 1997). If resettlers are not given a chance to make decisions and influence the resettlement process, they will have little sense of ownership and accountability in their new dwellings (Oliver-Smith, 1991). Furthermore, Keraminiyage & Piyatadsananon (2013) identify in their study that there is often a discrepancy between the priorities and perspectives of policy makers and resettled communities, which can then affect the different phases of post-disaster resettlement projects. In their case study in Thailand, it was found that the policymakers and resettlement implementers prioritised land availability and accessibility, thus overlooking the socio-economic and cultural concerns of the resettlers.

2.4.3 *Economic factors*

After being transferred to the resettlement site, resettlers often suffer from unemployment or underemployment, which results in long-term economic and psychological impacts (Cernea, 1997). Employment problems of those who are resettled are usually underestimated in the first place by planners and policy makers, then becoming more severe over time (Badri, Asgary, Eftekhari & Levy, 2006).

The results of a study showed that families who had different income sources prior to relocation became more reliant on just one source of income after being resettled (Badri et al., 2006). This makes households more vulnerable to periodic fluctuations of their incomes and almost unable to secure permanent income (Zulauf 2012). Cernea (1997) suggests that the resettlement site should allow for the restoration of income sources for displaced people. Some effective ways of doing this include determining the same types of land from the previous sites to allow for a continuity in skill value, converting land that allows for the production of more valuable crops suitable to the new site, and the diversification of economic activities. Agricultural land access is essential in ensuring a household's livelihood security. It also makes them less vulnerable to food insecurity (Zulauf 2012).

Another factor is the higher housing standard in some resettlement sites, which results in a higher cost of living over time (Zulauf 2012). This was evident in Badri et al.'s (2006) study which showed that adapting a new lifestyle in the relocation site added new expenses in the household budget of the majority of the respondents. For instance, due to lack of agricultural land in the relocation site, many families now have to buy goods which they used to provide for their own before the disaster. In such instances, their self-sufficiency weakens. Additionally, people who used to live in simple homes with no electricity or sanitation now have to pay for water and electricity bills regularly in their new dwellings. Because of this, resettled communities will need more money for daily sustenance (Zulauf, 2012). To solve this, Badri et al. (2006) recommended training and technology transfer to enhance the production capacity, establish new economic activities and businesses suitable to the new environment to diversify income sources, and provide additional financial assistance for the most vulnerable communities.

2.4.4 *Social factors*

The distance from kin or the original dwelling is another factor affecting resettlement outcomes. Quarantelli (1985) highlights that social relationships and support groups are at the cornerstone of people's social lives. Social connections are indeed vital in people's relationships with their broader environment. Social ties reinforce people's sense of belonging in their environment in which collective constructs of reality and adaptation patterns are created (Oliver-Smith, 1991). In involuntary resettlement, social organisation patterns and interpersonal relationships in the communities are often destroyed, resulting in a loss of social capital. Moving people away from their familiar environments and significant social networks therefore causes adverse effects to their overall wellbeing (Quarantelli, 1985; Cernea, 1997). However, this issue is still unrecognised and largely unaccounted for by authorities (Oliver-Smith, 1991).

Another reason for unsuccessful resettlement implementation is the insufficient understanding of communities' cultural needs. Quarantelli (1985) emphasises that people have diverse cultural values and beliefs and these affect resettlers' adjustments in their new site. Additionally, people are likely to engage in activities that are tied up with their cultural identity. They ultimately behave in ways that will preserve their cultural values (Oliver-Smith, 1991; Wallace, 1956).

The advantages of indigenous knowledge and experience in the local environment are also often not recognised (Oliver-Smith, 1991). It is thus important to consider and determine the characteristics of communities to be resettled especially because there are diverse cultural values and beliefs as well as various perceptions about different levels of the government (Quarantelli, 1985). Recognising and meeting their deeper social, emotional, and psychological needs provides a sense of security to the resettlers (Davis, 1978).

Chapter 3. Methodology

This study on post-disaster resettlement in the Philippines adopts a qualitative research methodology to explain what factors affect resettlement outcomes and how these influence the various stages of resettlement. This type of research helps address the problem not just through a single lens, but through multiple lenses that enable the interpretation of various dimensions of a particular issue (Baxter & Jack, 2008).

To help achieve this, this research employs a case study approach. One of the advantages of using case study research is that it provides a detailed understanding of the context of a phenomenon. This approach helps to link the interpretation of the results of the study with more generalisable findings (Cavaye, 1996).

However, the findings of particular case studies are often tied to specific research contexts and environments; a limitation that has been emphasised well in the literature (Yin, 1984). Hence, this research focuses on multiple cases. Cavaye (1996) emphasised that logical replication is possible in case study research by using the same settings and by finding similar outcomes across cases. Taking this into consideration, this project examines the same set of factors through a case comparison approach that allowed for an investigation across four disastrous events that happened in the Philippines from 1991 to 2013. These are the Mt. Pinatubo eruption in 1991, the Mt. Mayon eruption in 2006, Typhoon Sendong in 2011 and Typhoon Yolanda in 2013. These events represent the most fatal disasters in the recent history of the Philippines, which have caused the displacement of numerous individuals and families throughout the country.

3.1 Data collection

This research draws on various secondary data. These include public documents such as journal articles, organisational reports, and news articles. The researcher also looked at legal documents such as legislation and the implementing rules and regulations.

The use of online databases such as ProQuest, ScienceDirect, Scopus, and Google Scholar allowed for the gathering of materials pertinent to the subject matter. Relevant data were identified using keywords such as "post-disaster resettlement," "resettlement in the Philippines," "displacement", "disasters" and "relocation". Due to the limited sources specific to the study, the researcher also referred to the references section of the materials collected and used them as an additional source of data.

Furthermore, the researcher approached key stakeholders with expertise and/or experience with disasters in the Philippines. These "experts" recommended documents such as books, journal articles and reports from the organisation that they worked for during the particular disaster covered in

this research. These materials were added to the list of possible sources that the researcher then accessed for data collection.

Lastly, the researcher also referred to personal experiences when handling post-disaster resettlement in the Philippines. This was done by looking at the different resettlement implementing organisations that the researcher had worked with and encountered during projects. This list became an additional resource for this study. Organisational reports on resettlement efforts were obtained from the websites of the implementing agencies.

These data sources provided descriptions of people's situations in post-disaster resettlement settings, which then revealed different factors that affect resettlement outcomes. It also helped to identify the different implementing agencies involved and their ways of implementing resettlement projects, which influenced the stages of resettlement in the various case studies.

3.2 Data analysis

The data collected were evaluated using thematic analysis, an approach that defines, organises, evaluates, and documents data patterns (Braun & Clarke, 2006). First, the researcher took note of any ideas related to resettlement outcomes and generated some initial codes and themes. Then, following Scoones' (1998) sustainable livelihood framework (see Figure 3-1), the researcher analysed whether the factors affecting resettlement outcomes reflect natural, human, social, physical, financial or political processes.

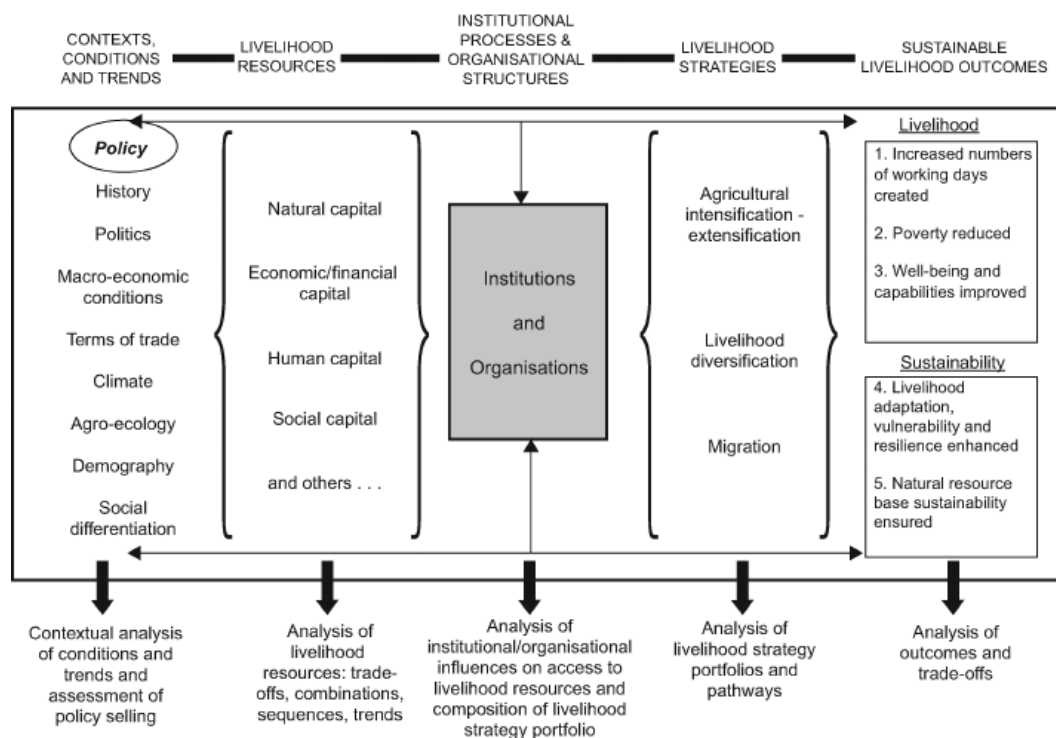


Figure 3- 1 Sustainable rural livelihoods: a framework for analysis (Scoones, 1998)

Different colour codes helped distinguish these factors: green for natural, yellow for human, orange for social, pink for physical, purple for financial and blue for political. From these, the researcher then categorised the factors into sub-themes (see Table 3-1 below). After that, these factors were compared with Cernea's eight impoverishment risks wherein similarities and differences were identified. The researcher also identified which stage in the relocation process the certain factor belongs to, using Scudder and Colson's framework as a guide (see Appendix A for detailed categorisation of themes per case study). Lastly, the researcher compared the results of one case with the other cases and these were used to make the interpretations in the findings.

Table 3- 1. Data collection matrix

Factors affecting resettlement outcome		Relocation Process			
		Recruitment Stage	Transition Stage	Stage of Potential Development	Handing Over/ Incorporation Stage
Natural	Access to land				
	Ability to live in safe areas				
Human	Health				
	Skills				
	Knowledge				
Social	Social ties and networks				
Physical	House quality				
	Protection means				
Financial	Source of income and savings				
Political	Political representation				
	Access to government services				

3.3 Positionality

This research adopts an outsider positionality since the researcher does not have first-hand experience in being resettled. Although the researcher was involved in planning, implementation, monitoring, and evaluation of a permanent resettlement project in the Philippines for four years, her knowledge of the resettlement process is limited to just one of the four disasters presented in this study. It is also important to note that the researcher did not conduct actual fieldwork for all the case studies. Merriam et al. (2001) stated that an outsider's perspective may be different from that of the insider's views. However, it is also considered as a valid understanding of the situation being studied because having an outsider positionality could offer an objective lens in determining what was not apparent to insiders in some cases, and this can be helpful in recommending ways to improve the resettlement process in general.

Chapter 4. Research Findings

4.1 Typhoon Sendong case study

Typhoon Sendong (international name: Washi) hit the Philippines on December 2011 and affected 698,882 people in total. The typhoon led to 1,268 deaths, 6,071 injured persons, and 181 missing persons. The National Disaster Risk Reduction and Management Council (NDRRMC) Philippines reported 51,144 damaged houses (13,585 totally damaged and 37,559 partially damaged) around the country. Cagayan de Oro (CDO) City was one of the hardest-hit cities by the typhoon, wherein more than half of the population (461,877) was displaced (IDMC, 2013).

Table 4-1 below provides an overview of the different resettlement sites designed to house those affected by Typhoon Sendong. It also lists the implementing agencies and the corresponding number of houses provided. There were a total of 2,487 permanent houses in four resettlement sites included in this case study. A combination of local and regional government agencies, national and local non-governmental organisations (NGOs), and private groups managed the resettlement projects.

Table 4- 1. Resettlement sites in CDO

Resettlement site	Implementing agency	Type	Number of permanent houses
Calaanan resettlement site Barangay Canitoan, CDO	Habitat for Humanity Philippines (HFHP)	National NGO	160
Calaanan resettlement site Barangay Canitoan, CDO	Gawad Kalinga (GK)	National NGO	271
Calaanan resettlement site Barangay Canitoan, CDO	Oro Habitat for Humanity (OH)	Local NGO	240
Calaanan resettlement site Barangay Canitoan, CDO	Filipino-Chinese Chamber of Commerce (FCCC)	Private group	300
Ecoville resettlement site Barangay Lumbia, CDO	Xavier University	NGO/Academic Institution	518
Indahag resettlement site Barangay Indahag, CDO	CDO Local government unit	Local government	590
Macapaya resettlement site Barangay Camaman-an, CDO	National government NHA (Region X) regional office	Regional government	408

4.1.1 *Recruitment stage*

4.1.1.1 Natural resources: access to land

Four months after Typhoon Sendong swept through CDO, displaced families were able to transfer to their permanent houses at the Calaanan resettlement site (Carrasco, Ochiai & Okazaki, 2016a). This became possible due to the availability of land which the CDO local government purchased for their social housing programme before the typhoon had even occurred (Carrasco, Ochiai & Okazaki, 2017).

4.1.1.2 Political resources: access to government services

Access roads, community facilities such as community centres, health facilities, schools, transportation routes, and commercial areas were also available in the Calaanan resettlement site (Carrasco et al., 2016a; Carrasco et al., 2017).

However, post-Sendong resettled families in Calaanan resettlement site had limited involvement in the decision-making process and had limited control in the planning and construction stages. This was due to the top-down resettlement approach where the implementers decided on all aspects of the resettlement (Carrasco et al., 2016a; Carrasco et al., 2017). Implementing agencies also prioritised achieving the completion timeline, budget limit, and technical standards rather than addressing the resettled communities' cultural or social concerns (Carrasco et al., 2016a; Carrasco et al., 2017). Because of this, implementers had limited understanding of the beneficiaries' needs and local conditions and failed to consider their concerns (Carrasco et al., 2016a).

4.1.2 *Transition stage*

4.1.2.1 Natural resources: access to land and ability to live in safe areas

The families in all the resettlement sites faced some challenges after being resettled. One major issue was the government's failure to properly assess hazards at the Calaanan resettlement site due to the pressure to rapidly relocate the survivors from Sendong. Some houses were built in landslide-prone areas and required further relocation after being damaged by heavy rains (Carrasco, Ochiai & Okazaki, 2016b; IDMC, 2013). Because of this, a number of housing units in the Calaanan site remain unoccupied (Carrasco, Ochiai & Okazaki, 2016b).

In terms of land ownership, residents in all resettlement sites were awarded occupancy rights to live in a house through the usufruct arrangement. However, this indicated that the local government keeps ownership of the house and lot (Carrasco et al., 2017; Santiago, Manuela, Tan & Sañez, 2017).

There was also no legal framework to facilitate the formal transfer of property rights to beneficiaries (Carrasco et al., 2016b).

4.1.2.2 Political resources: access to government services

Access to basic needs and situations in the resettlement sites also became another problem for the families. A lack of electricity, lack of water, and poor transport conditions were reported in the Macapaya resettlement site (Santiago et al., 2017). According to IDMC (2013), 69% of displaced persons had to pay for potable water. Macapaya residents also complained about long-distance travel and high travel costs to the CDO central business district.

4.1.2.3 Physical resources: quality of housing

The resettlers also raised concerns with housing design and construction. For instance, spaces for kitchen or laundry areas and separate rest and storage space were not provided in the permanent houses in Calaanan resettlement site (Carrasco et al., 2016a). Furthermore, residents in the same site had a negative perception of housing materials used since it lacked proper ventilation and thermal insulation (Carrasco et al., 2016a; Carrasco et al., 2017). Many restrictions were also placed on adopting locally suitable solutions for the design and construction of permanent housing in the Macapaya resettlement site (Santiago et al., 2017).

4.1.2.4 Financial resources: sources of income and saving

Access to employment and alternative sources of income was a challenge for the resettled families in the Calaanan site. Because of this, the resettlers had a negative perception about their economic stability in the resettlement site (Carrasco et al., 2017).

The residents of Macapaya, Indahag and Ecoville also experienced the same problem as they still relied on their work in the city, which was far from the resettlement site (Santiago et al., 2017; IDMC, 2013). There were also no projects implemented where the residents could acquire alternative sources of income at the Macapaya and Indahag sites (Santiago et al., 2017).

According to IDMC (2013), families with businesses or stores in their original residence had lower income because their established social connections were some 15km away from the permanent resettlement site. Displaced persons were further disadvantaged when looking for jobs because of lost documents such as high school or university diplomas after the typhoon (IDMC, 2013).

4.1.2.5 Social resources: social ties and networks

Carrasco et al. (2017) reported in their study that residents had a positive perception of their neighbourhood environment and community life in the Calaanan resettlement site. In Ecoville, the active involvement of an NGO in the recovery process entailed active participation from the residents. A continued engagement between the residents and the NGO was observed through the skills training that the NGO provided for the residents aside from funding houses. Moreover, residents in the Ecoville resettlement site raised the importance of homeowner's associations (HOAs) in the community recovery process (Santiago et al., 2017).

4.1.2.6 Political resources- political representation

There were different situations in terms of the relationship between authorities and communities in the resettlement site. In the government-led resettlement site, Macapaya residents entrusted the NHA regional office to lead the recovery process. According to the residents, NHA, together with other stakeholders, could help improve their access to basic services in the resettlement site (Santiago et al., 2017).

On the other hand, some of the residents complained about social and political discrimination as they were not eligible for resettlement assistance. CDO local government officials tagged these people not as typhoon survivors but as migrants due to the political patronage system in the area. This means that the residents were suspected of being "hakot migrants" or people who came to CDO when politicians persuaded them to settle on public land to protect their electoral block votes (IDMC, 2013).

4.1.3 *Stage of potential development*

Based on Scudder and Colson's relocation process, the post-Sendong resettlement could be considered to have reached the stage of potential development. Santiago et al. (2017) state in their study that residents in Ecoville, Indahag and Macapaya resettlement sites indicated that there are still many developments that are needed to make the resettlement community more liveable and sustainable. Their study also highlights that there is a small percentage (14%) of resettled families who were able to increase their income statuses in the two years after the disaster.

4.2 **Typhoon Yolanda case study**

In November 2013, Super Typhoon Yolanda hit the Philippines and affected about 16 million people. According to the NDRRMC, the typhoon caused 6,300 deaths and injured 28,689 people. 1,062 other individuals have been reported missing since then. Reports also show that a total of 1,140,332 houses were damaged, including 550,928 that were totally destroyed and 589,404 that were only partially damaged (NDRRMC, 2013).

Tacloban City, on the island of Leyte, was one of the hardest-hit cities. Thousands of families were displaced (City of Tacloban, 2014). The neighbouring town of Tanauan was the second most damaged area (Yi et al., 2015). Most of those affected in both Tanauan and Tacloban were ultimately relocated by the national government and local and international NGOs. Table 4-2 below provides an overview of the two resettlement sites considered in this study.

The Tacloban North resettlement site sits 30km away from the city centre and received most of the government-led resettlement efforts. However, there were also resettlement projects led purely by NGOs as well as NGO-led resettlement projects in partnership with the Tacloban local government unit (LGU) and the NHA (Arroyo & Astrand, 2019).

Table 4- 2. Resettlement sites in Leyte

Resettlement site	Implementing agency	Type	Number of permanent houses
Tacloban North resettlement site Tacloban, Leyte	Mixed local NGOs and INGOs, Tacloban LGU and the National Housing Authority	Local and international NGOs in partnership with local and national government	1131
Tanauan resettlement site Tanauan, Leyte	Gawad Kalinga, Tanauan LGU and the National Housing Authority	Local NGO in partnership with local and national government	465

4.2.1 Recruitment stage

4.2.1.1 Natural resources: ability to live in safe areas

The Tacloban City government prioritised resettling informal settlers living in coastal areas, which were considered the most at risk population (Luchi & Maly, 2016). A month after the typhoon, the Philippine president's "no-dwelling zone" policy prohibited the construction of houses within 40 meters of the shoreline. This policy did not allow for informal settlers to go back and build houses in their places of origin (Yee, 2018).

4.2.1.2 Natural resources: access to land

The lack of available land for resettlement became one of the main challenges of the recruitment stage in Tacloban (Thomas, 2015; Arroyo & Astrand, 2019 & Walch, 2017). Most of the identified government-owned tracts of lands lacked legal titles, were being used for agricultural purposes, lacked access to roads, and/or were exposed to other hazards like flooding (Thomas, 2015; Arroyo & Astrand, 2019). In fact, out of 87 hectares of government-owned land initially identified for

resettlement, only 25 hectares were eventually deemed appropriate for residential use. City officials thus had to find additional private land to meet resettlement demands (Thomas, 2015).

Due to a high demand in land for resettlement, private land prices rose ten-fold, which the government was not able to control (Walch, 2017). Furthermore, the construction boom associated with the rebuild of the affected areas around Leyte resulted in a scarcity of resources. This caused the escalation of labour and construction material costs (Arroyo & Astrand, 2019). A shift from agricultural to residential land-use was therefore essential. However, it took approximately six months to finalise due to tedious bureaucratic processes that involved the issuance of various documents from numerous agencies (Arroyo & Astrand, 2019).

On the other hand, access to land was not a problem for the Tanauan resettlement site that NGO GK managed. GK identified and purchased land for resettlement and donated this to the Tanauan local government (Arroyo & Astrand, 2019). The government eventually developed the site (Opdyke, 2017).

4.2.1.3 Political resources: access to government services

In many instances, resettlers' rights to full and informed consent and participation in the relocation process is rarely fulfilled in government-led resettlement sites. Beneficiaries have no involvement in resettlement planning, which includes the choosing of resettlement locations as well as the type and design of houses (Arroyo & Astrand, 2019). In her study, Thomas (2015) states that most of the beneficiaries from Tacloban complained that the resettlement site is too far from the city centre where sources of incomes, schooling, and social networks are predominately located. Moreover, some resettlers were not even informed of when they would transfer to the resettlement site (Thomas, 2015).

4.2.1.4 Physical resources: house quality

Due to the national government's top-down approach to resettlement, the changing needs of resettlers were not taken into account. For example, the type of houses provided in Tacloban did not allow for vertical or horizontal expansion (Arroyo & Astrand, 2019).

4.2.2 *Transition stage*

4.2.2.1 Financial resources: source of income and savings

The delay in identifying a suitable resettlement site in Tacloban impeded the provision of economic assistance for resettlers (Thomas, 2015). Resettlement to the Tacloban North site eventually took place before the site became accessible through public transportation. This prevented the resettled families from accessing jobs in the city centre (Thomas, 2015; Luchi & Maly, 2016). Access to education

facilities also proved difficult at the Tacloban North resettlement site. The existing schools in the area were already overpopulated and could not accommodate children who relocated. In consequence, some families had to send their children back to their old schools in the city, which also meant additional costs for transportation (Luchi & Maly, 2016). For many government-led resettlement initiatives, sustainable relocation entailed providing permanent housing, particularly in the form of concrete houses, with little consideration for the other dimensions of the survivors' livelihoods (Bradley, Sherwood, Rossi, Guiam, & Mellicker, 2017).

Economic opportunities for resettled families also became a challenge in the Tanauan resettlement site (Atienza, Eadie & Tan-Mullins, 2016). As most of the resettlers were fisherfolk, many of them informally established a second shelter along the coast to sustain their daily livelihoods (Bradley et al., 2017; Opdyke, 2017). Others decided to abandon the relocation site and returned to their place of origin to work and send their children to school (Atienza et al., 2016). To address this issue, GK implemented skills training for the Tanauan resettlers after securing funds from another NGO, Citibank Foundation. Some of the courses include carpentry, baking, farming, masonry, and making hollow blocks and handicrafts (Arroyo, 2019).

4.2.2.2 Political resources: access to government services

Resettlers in Tacloban North were also not able to access basic services such as water, electricity, and sanitation facilities (Thomas, 2015; Luchi & Maly, 2016). They also complained about a lack of access to health care (Atienza et al., 2016).

On the other hand, access to water did not become a problem for families resettled from Tanauan since the local government installed water pumps and faucets in the resettlement site (Atienza et al., 2016). However, they did raise groundwater contamination issues (Opdyke, 2017).

4.2.2.3 Natural resources: access to land and ability to live in safe areas

Those resettled in the government-led Tacloban North site benefitted from a usufruct arrangement where resettlers could stay at the site for as long as they wanted to, considering that they did not lease or sell the houses (Opdyke, 2017). However, because most of those resettled were informal settlers, having a house they legally owned was considered a significant benefit of the relocation process (Cuaton, 2019). On the contrary, the land titling process in the Tanauan resettlement site had not occurred within three years after resettlement. During that time, several beneficiaries raised concerns as to whether or not this would still even be possible (Opdyke, 2017). This happened because the government owns the land where the resettlement site sits (Ibon Foundation, 2015). Additionally, while those who relocated to the Tanauan site appreciate that they are no longer exposed to storm surges, they now have to deal with flooding (Opdyke, 2017; Atienza et al., 2016).

4.2.2.4 Social resources: social ties and networks

Cuatón (2019) found that living close to relatives gave resettlers a sense of safety and security. In a similar vein, moving away from their place of birth or original dwelling made the resettlers feel significantly more uncomfortable (Cuatón, 2019). For instance, a resettler in the Tacloban North resettlement site stated that typhoons such as Yolanda are “once in a lifetime disasters” but forced resettlement meant that disasters henceforth became an everyday matter (Yee, 2018).

4.2.2.5 Human resources: skills

Qualified beneficiaries in the Tanauan resettlement site followed the GK implemented “sweat equity scheme” (Opdyke, 2017; Atienza et al., 2016). The resettlers rendered 1500 hours of labour in the building of their house as well as in helping build their neighbour’s house. They also underwent a values formation workshop which aimed to develop their “sense of community” and instil long term housing maintenance skills (Opdyke, 2017). GK practices this scheme in all of their housing projects, whether following disasters or not, as it serves as a form of reciprocal contribution between the beneficiaries, their new houses, and the implementing agency (Atienza et al., 2016). Arroyo (2019) found that the values formation workshops helped Tanauan resettlers increase their sense of self-confidence, strengthened their ties with their neighbours, and elicited their willingness to help other people.

4.3 Mayon Volcanic Eruption case study

A number of ash explosion events occurred at Mayon Volcano in August 2006 (National Disaster Coordinating Council [NDCC], 2006a). Three months later, Typhoon Reming brought heavy rains which triggered lahar flows. The lahars caused 1266 deaths and damage to agricultural and residential properties amounting to approximately PHP 608 billion (Paguican, Lagmay, Rodolfo & Rodolfo, 2009; Orense & Ikeda, 2007). The NDCC (2006b) reported that a total of 43,873 people were forced to evacuate their homes throughout the different municipalities of Albay.

Due to the combined threats from volcanic eruptions and lahars, the Provincial Disaster Coordinating Council (PDCC) implemented permanent resettlement for people living in the high-risk areas of Camalig, Santo Domingo, Daraga, Legazpi and Guinobatan municipalities. Affected families were transferred to the Tagaytay resettlement site in Camalig, Albay, which was located 10km away from the centre of the town of Camalig and 17km away from the volcano (Usamah & Haynes, 2012). Table 4-3 provides an overview of this resettlement site.

Table 4- 3. Resettlement sites in Albay

Resettlement site	Implementing agency	Type	Number of permanent houses
Tagaytay Resettlement Site Camalig, Albay	Neighbouring Association for Shelter Assistance (NASA)	Local NGO	114
Tagaytay Resettlement Site Camalig, Albay	The International Organisation of Migration (IOM)	International NGO	350
Tagaytay Resettlement Site Camalig, Albay	The Italian Government	Foreign government	125
Tagaytay Resettlement Site Camalig, Albay	A government official	Private	125
Tagaytay Resettlement Site Camalig, Albay	Habitat for Humanity	Local NGO	136
Tagaytay Resettlement Site Camalig, Albay	Camalig LGU	Local government	115

4.3.1 Recruitment stage

4.3.1.1 Political resources: access to government services

The construction of the Tagaytay resettlement site started in 2006 and became ready for occupancy in 2010. Local and international NGOs, foreign government aid services, and a private donor all contributed to the funding of the project (Usamah & Haynes, 2012).

In coordination with the Camalig local government, the donors set certain criteria in identifying, screening, and assessing the potential beneficiaries for resettlement. Beneficiaries who qualified included those residing in hazard-prone areas, who did not have other properties located in safe areas, and who had monthly family incomes below the poverty threshold based on poverty data from the National Economic and Development Authority (NEDA). The NGOs and private donors also advised that whole barangays could not move together in the resettlement site (Usamah & Haynes, 2012).

The Camalig local government also built houses in the same resettlement site (Labayo, 2019). They resettled an indigenous tribe called Ati. Ati people come from the municipality of Santo Domingo, which was declared a permanent danger zone. Together with local people, the Ati tribe was resettled in Camalig, which is 20km away from their place of origin (Labayo, 2019).

4.3.1.2 Natural resources: ability to live in safe areas

The Department of Environment and Natural Resources (DENR) conducted a geohazard assessment to confirm the Tagaytay Resettlement site's safety from lahars, floods, landslides, and liquefaction. Housing designs were also complied with the regulations and requirements of the Department of Social Welfare and Development (DSWD) and Municipal Engineers Office in terms of the engineering and design of the new buildings. The beneficiaries felt satisfied with the housing construction because it provided them with a sense of security from natural hazards (Usamah & Haynes, 2012).

4.3.1.3 Political resources: political representation

Prior to resettlement, the government informed beneficiaries about the plans, rules, regulations, and rights regarding resettlement. However, the beneficiaries were not involved in decisions regarding site selection, the design of their houses, the beneficiary selection criteria, the location of their house in the resettlement site, or the process of securing sources of income at or near the site (Usamah & Haynes, 2012).

4.3.2 *Transition stage*

4.3.2.1 Natural resources: access to land

Resettled beneficiaries acquired housing contracts that guaranteed their right to occupy a lot at the relocation site for up to 99 years and extendable. Obtaining legal documents enhanced the security of land tenure of the beneficiaries since they had no access to land ownership before (Usamah & Haynes, 2012; Labayo, 2019).

4.3.2.2 Political resources: access to government services

During this stage, the DSWD conducted seminars and house-to-house visits which provided information to the beneficiaries about the type of houses as well as their rights and responsibilities in the resettlement site (Usamah & Haynes, 2012).

However, the lack of access to essential services in the site became a challenge for the resettlers. The beneficiaries of local and international NGOs, foreign government and private donors did not have access to electricity in the site for almost a year (Usamah & Haynes, 2012). Those local government-resettled families also experienced the same problem. Aside from electricity, the Ati people raised that they could not access water, food, or transportation, which hindered their adjustment to their new environment (Labayo, 2019).

4.3.2.3 Physical resources: house quality

While the beneficiaries felt content with the durability of the houses, they were not satisfied with the housing size and layout. According to them, the houses were too small and too close to each other, which caused noise, privacy, and ventilation issues. Because of this, they built fences and planted trees in their neighbourhood (Usamah & Haynes, 2012).

4.3.2.4 Financial resources: source of income and savings, and human resources: health, skills, and knowledge

Sustainable access to financial and human resources was also a contributing factor to resettlers' adjustment in their new housing sites. One major change was the shift from a lifestyle that focused on primary production for self-consumption to a lifestyle where they needed to use cash to support their everyday lives. There was, however, a lack of opportunity to secure new skills and incomes. In consequence, resettlers were still dependent on employment and schools in their original settlement, which was 4 to 12kms away from the resettlement site. They therefore had to spend additional money on their daily transportation to go to work and to send their children to school (Usamah & Haynes, 2012).

Living in the resettlement site also had negative effects on the economic life of those resettled by the Camalig local government. The Ati people were traditional healers who mainly relied on selling traditional medicine. However, in the resettlement site, there were no tracts of lands that they could cultivate for growing herbs and medicinal plants. Since there were no employment alternatives, they could not earn money to sustain their basic needs (Labayo, 2019).

4.3.2.5 Social resources: social ties and networks

Each block of houses in the Tagaytay resettlement site has resettlers from different places. This disruption of pre-existing social ties has made it harder for resettlers to adjust to their new homes. The organic leaders in the site have tried to establish new groups such as youth groups, cooperative, carpentry association, catering, and handicraft business groups. However, this continues to prove difficult due to the continued mobility of the resettlers between the resettlement site and their old dwellings (Usamah & Haynes, 2012).

4.4 Mount Pinatubo eruption and lingering lahars case study

The Mount Pinatubo eruption in June 1991 and subsequent lahar flows resulted in significant damage to life, houses, and agricultural lands, particularly in the Central Luzon region. Reports showed that the disaster impacted more than 1 million people, causing 617 deaths and 195 injured persons, with 23 unaccounted for since then. The volcanic eruption and lahars also destroyed 110,426 houses,

of which 39,960 were totally damaged, and 70,466 partially damaged houses (UN Department of Humanitarian Affairs, 1991).

Some of the Mt. Pinatubo eruption affected areas became unliveable and untillable. This was due to the pyroclastic deposits from the volcano, which tends to remain hot for 5 to 10 years after the eruption (Tayag & Punongbayan, 1994). Taking this into account, a considerable number of survivors and their families needed urgent resettlement assistance, which made it challenging to find suitable resettlement sites (Tariman, 1999). Following the eruption, the government created a resettlement policy and immediately extended resettlement assistance to the survivors (Tariman, 1999). The Mount Pinatubo Commission (MPC) led and implemented the resettlement project (Gaillard, 2015), and this consisted of resettlement for people living in lowland and upland areas near the volcano. However, all of the resettlers had different characteristics and needs, thereby requiring different resettlement approaches. Due to the broad range of approaches, this study only covers lowland resettlement sites and does not include the resettlement of uplanders, which comprised of about 10% of Pinatubo evacuees (Tariman, 1999).

The province of Pampanga in Central Luzon became one of the hardest-hit lowland areas. Lahars displaced almost half of the population of the province (Tariman, 1999). Table 4-4 provides an overview of the selected resettlement sites in Pampanga. There are a total of 3,457 permanent houses built on four resettlement sites included in this case study. Aside from MPC-managed resettlement, NGO-managed sites are also presented in this study.

Table 4- 4. Resettlement sites in Pampanga

Resettlement site	Implementing agency	Type	Number of permanent houses
Bulaon resettlement site San Fernando, Pampanga	Mount Pinatubo Commission & Pampanga local government unit	National and local government	970
Pio resettlement site Porac, Pampanga	Mount Pinatubo Commission & Pampanga local government unit	National and local government	1879
Promised Land site Bacolor, Pampanga	Social Action Centre of Pampanga (SACOP)	Non-government organisation	176
Buensuceso resettlement site, Arayat, Pampanga	Andres Soriano Foundation (ASJRF)	Non-government organisation	432

4.4.1 Recruitment stage

One of the MPC-managed sites is the Pio resettlement site located in Porac, Pampanga. This is 10 to 15kms away from the resettlers' former villages. The site was acquired through a private donation in 1992 (Arroyo, 2019). The Department of Public Works and Highways (DPWH) developed the site and it became ready for occupancy in 1995 (NEDA, 1996).

Another is the Bulaon resettlement site located in San Fernando, Pampanga. The MPC collaborated with the provincial government of Pampanga to implement the resettlement project (Tariman, 1999). The Pampanga local government acquired the site in 1994 and it became ready for development in six months. For the site development, national government agencies provided roadways, drainage, and water supply (NEDA, 1996). It then became ready for occupancy the year after that (Tariman, 1999).

On the other hand, it only took two months for SACOP to acquire the Promised Land resettlement site in Bacolor, Pampanga. Another NGO-managed resettlement site is the Buensuceso resettlement site located in Arayat, Pampanga (NEDA, 1996).

4.4.1.1 Natural resources: ability to live in safe areas

Safety from lahars and good accessibility to water sources were the basis for choosing the Bulaon resettlement site (Gaillard, 2015). The Philippine Institute of Volcanology and Seismology (PHIVOLCS) declared that it was safe from lahars. Moreover, proximity to the resettler's original dwellings and safety from health hazards were also considered in site selection (Tariman, 1999).

4.4.1.2 Political resources: political representation

The Social Services Administration of the MPC, together with the DSWD and relevant LGUs validated and identified the beneficiaries for resettlement assistance (Tariman, 1999, Quiambao, 2015). The extent of the volcanic eruption damages, house ownership and household units became the basis for beneficiary selection (Tariman, 1999).

The selection criteria highlighted five priorities. The first priority for resettlement assistance were families who had lost both of their houses and their means of subsistence. This was followed by families who lost their houses but not their main means of subsistence. The third priority was families who were sharers or renters in the destroyed houses. Following this, were families who lived in high-risk areas but were not directly affected yet. The last priority for the resettlement assistance was families less severely impacted by the volcanic eruption. All of the families who qualified were resettled on a voluntary basis (Tariman, 1999).

According to Quiambao's (2015) study, the resettlers at the Pio site were involved in the resettlement planning process. They were the ones who gave the official name of the site, the Pio Model Community, which they eventually called Tokwing. They also changed the odd-even numbering scheme of the houses and housing blocks proposed by the MPC. According to the residents, if they followed the MPC's house numbering scheme, they could have trouble finding houses. Because of this, they proposed a simple numbering system of the houses and housing blocks in the resettlement site. The

resettlers also retained a layout of houses similar to that of their former village so they could stay near their relatives and old neighbours (Quiambao, 2015).

The Bulaon resettlers, however, had no involvement in the decisions regarding site layout and house design. These resettlers were left with no choice but to accept what the government had already planned for them (Tariman, 1999; Gaillard, 2015). In research on post-eruption resettlement covering the Bulaon site, 88% of the study participants said that they were not involved in the resettlement process (Gaillard, 2015). Site planning and design became the responsibility of the engineering offices of the LGUs (NEDA, 1996).

In the NGO-sponsored sites, the resettlers were also not consulted regarding site selection, design and layout, available on-site facilities and services, and housing size or materials. Rather, the NGOs hired private contractors for site planning and design (NEDA, 1996).

4.4.2 *Transition stage*

To help the resettlers adapt to their new environment, the government conducted values formation seminars to instil the proper conduct expected within each resettlement site. Different assemblies were also held to inform beneficiaries about their roles and responsibilities in the resettlement site. These included keeping their neighbourhoods clean, safe, and organised, the payment of electric and water bills, and membership fees contribution for the HOA and for maintaining local service facilities (Tariman, 1999).

The MPC clarified in the meetings that the Certificate of Occupancy was not the formal title, but rather, simply a proof of ownership of the house and lot. The resettlers only received this after following all the terms and conditions that the MPC set. In the meetings, the beneficiaries also became aware of the government resettlement plans such as facilities and services available in the resettlement site and how to access these (Tariman, 1999).

The resettlers in all sites were notified regarding the mode of house ownership. In both the government and NGO-developed sites, a 25-year loan amortisation arrangement was made for the new houses (NEDA, 1996). There was no interest rate during the first five years of the amortisation period. However, 1% and 3% interest rates per year became applicable from the 6th year until the 25th year of the loan repayment schedule in Pio and Bulaon resettlement sites respectively (Tariman, 1999). Bulaon residents felt concerned that they could not afford this (Gaillard, 2015). Also, results from the study of the Philippine Business for Social Progress on rehabilitation options and alternatives for Mt. Pinatubo victims showed that beneficiaries became hesitant to occupy any houses and were unsure about their capacity to pay the loan amortisation (Tariman, 1999). In the Buensuceso and Promised Land sites, the residents were expected to pay a graduated amortisation with 12% and 20% interest rates respectively (NEDA, 1996).

4.4.2.1 Political resources: access to government services

Policies that require the provision of complete facilities and services guided the development of the government-led resettlement sites, which was meant to help improve the living conditions of the resettlers (NEDA, 1996). However, since the resettlers had limited involvement in the decision-making process of the resettlement itself, access to on-site resources became a challenge (Gaillard, 2008).

The Bulaon and Pio resettlement sites had schools from pre-school to primary and secondary levels (NEDA, 1996). The availability of schools up to tertiary level in the Pio site was instrumental in resettlers' recovery. In their old dwellings, only grade school education was available. Accordingly, they have been able to save money on transportation. Residents also recognised that free access to high school education has greatly helped them in the long-term (Quiambao, 2015). A basketball court and a small playground were also built near the schools. Both sites also had a large market facility, but this eventually became non-operational due to water and electricity shortages, and the high rental rates for stalls. Additionally, the MPC provided on-site health clinics. Pio resettlers felt satisfied with the regular clinics held on site (Quiambao, 2015). However, Bulaon residents were not satisfied with the health services due to the provision of insufficient equipment and health workers (NEDA, 1996).

On the other hand, there were no health clinics, park and recreational facilities, and markets on the NGO-developed sites. The Promised Land site also lacked schools, and students residing in this site went to school in the same town as they had before (NEDA, 1996).

All houses in both sites have access to electricity through the installation of primary and secondary electric posts (NEDA, 1996; Tariman, 1999). However, paying for the monthly electric bill of approximately PHP 200-PHP 300 became a challenge for most of the residents (NEDA, 1996).

In terms of access to water, all sites were provided with water supply systems. However, residents in Buensuceso and Bulaon resettlement sites were not fully satisfied as they experienced water supply problems in the site, such as seasonal water shortages. Residents also did not have enough access to potable water (NEDA, 1996).

Moreover, communal facilities such as churches and multi-purpose buildings were provided in Bulaon, Pio and Buensuceso resettlement sites. Resettlers felt satisfied with the availability of multi-purpose buildings, which served as venues for different on-site events. In Bulaon, the building also served as an evacuation centre (NEDA, 1996). Road access was also available in both the government and NGO sites. While Buensuceso residents felt satisfied with this, the narrow road and lack of sidewalk reduced resident's satisfaction in the Promised Land site (NEDA, 1996).

4.4.2.2 Financial resources: source of income and savings

Results from the 1995 MPC commissioned household and employment profile showed that a large number of Bulaon resettlers were unemployed and unskilled (Tariman, 1999). With this, the MPC ensured that the government-built sites could provide jobs for the resettlers through building productivity centres (NEDA, 1996; Gaillard, 2015). The government also gave incentives such as tax cuts to private sector entrepreneurs, provided that 75% of their total workforce would come from the resettlers (Tariman, 1999).

In the Pio resettlement site, productivity centres were also provided but it became a storage area afterwards since large businesses were not interested in investing due to its remote location (NEDA, 1996, Quiambao, 2015). There was also a livelihood centre in Buensuceso built by the NGO, which was used in clothing production (NEDA, 1996).

4.4.2.3 Human resources: skills and knowledge

There was, however, a skills mismatch between the expertise of the resettlers and the newly generated jobs within the productivity centres. Because of this, different government agencies also provided skills training to the resettlers. Some of the courses include cosmetology, ceramics production, hotel and restaurant service and food handling, vocational trades, practical education for out-of-school youth, and small-scale trading (Tariman, 1999, Quiambao, 2015).

Despite all of these programmes, restoration of livelihoods in the resettlement site was still a challenge for the resettlers (Gaillard, 2015; NEDA, 1996; Arroyo, 2019). Ways of immediately earning money to access basic needs were limited (Tariman, 1999), and many families felt that their living conditions had deteriorated after the eruption of Mt. Pinatubo (Gaillard, 2015). Some resettlers from Pio had a hard time finding work and most of them needed support to secure their source of income. A lot of the resettlers were formerly engaged in livestock and farming but after being resettled, they had to shift to micro-enterprises like food processing, trading, and furniture production (Arroyo, 2019). Because of this, some resettlers became dependent on relief goods for months in order to survive (Quiambao, 2015).

4.4.2.4 Physical resources: house quality

Two types of houses were made available to resettlers: contractor-built houses and self-built houses. Some residents who availed self-built houses in the Pio resettlement site expressed that they were highly satisfied with the houses because they were able to construct houses that were large enough to accommodate their whole family. They also had the chance to reuse some materials from their old house in the construction of their new house (NEDA 1996, Quiambao, 2015). However, by the early 2000s, the resettlers in Bulaon and Pio with contractor-built houses expressed that they were not

satisfied with the housing design. In particular, they raised the concern that it was too hot inside the house. Additionally, there were insufficient bedrooms and the toilets and kitchens were too small (Gaillard, 2015; NEDA 1996; Quiambao, 2015). Because of this, most of them constructed additional rooms or built another floor in the house (Gaillard, 2015; Quiambao, 2015). The resettled families in Bulaon also complained about small lots provided to them, having no space to build a garden. The site was also different from their original village more generally (Gaillard, 2015; NEDA 1996). At the Pio site, resettlers also raised concerns about the substandard houses built by the contractors because in many cases, housing specifications were not followed due to time pressure (Quiambao, 2015).

4.4.2.5 Natural resources: access to land

A year after their resettlement, people raised concerns about the lack of farmland in the Bulaon resettlement site since some of them were farmers (Gaillard, 2015). As a result, some of the resettlers started to go back to their original village or went to other places to look for economic opportunities (Gaillard, 2015; NEDA, 1996).

The government resettlement assistance followed a usufruct arrangement (Tariman, 1999). However, occupancy rights issues remained unresolved in the MPC resettlement sites and the beneficiaries did not receive ownership rights as of 1996 (NEDA, 1996). In the Pio resettlement site, house ownership certificates were awarded to the resettlers in 2003. However, as of 2014, the actual land titles had still not been provided to them (Quiambao, 2015).

4.4.2.6 Social resources: social ties and networks

A study on post-eruption resettlement in 2004 revealed that cultural backgrounds and traditions affected people's adjustment to their resettlement programmes. At the Bulaon resettlement site, the resettlers' deep attachment to their place of origin was observed. People from Bulaon maintained regular ties with their former village. Gaillard's (2015) study revealed that Bulaon resettlers still go back to Bacolor town to go to church and attend special occasions like *fiestas* and birthdays. They even named the schools, churches, and other facilities in the resettlement site after that of their native town (Gaillard, 2015). The name of the organisation called the Bacolor Women's Association formed in the resettlement site was also associated with the old village (Tariman, 1999).

Overall, they had a hard time adapting to the new structures within the resettlement site. As a result, more than half of them wanted to return to their place of origin (Gaillard, 2015). Indeed, most resettlers considered resettlement as just a temporary need. On average, they occupied houses in the sites for only up to four years (NEDA, 1996).

On the other hand, resettlers in the NGO sites preferred to stay near the location of their original houses. They felt satisfied that the resettlement sites were located within their home province (NEDA,

1996). This was also the same for Pio resettlers, who stated that living near their relatives and kin provided them with a sense of security, support, and belonging, which made it easier for them to adjust to the resettlement site. The close proximity between the resettlement site and the original site meant that it became easier for them to visit their old homes. They were also familiar with the local language and government officials since they were still living in the same town. This prevented further anxiety for the resettlers during an already unsettling time (Quiambao, 2015).

People's organisations, mostly HOAs, were established in resettlement sites to reinforce the cohesion of the resettled population (NEDA, 1996; Tariman, 1999, Quiambao, 2015). There were also other sectoral organisations like the Bulaon Vendors Association, the Women's Association, multi-purpose cooperatives and youth clubs (Tariman, 1999).

HOAs also organised various committees in the resettlement site. The different committees were food, shelter, livelihood, health, education, peace and order, disaster assistance, electric service, water, sports and recreation, and environmental protection (Tariman, 1999).

4.4.3 *Stage of potential development*

4.4.3.1 Political resources: political representation

The findings of Quiambao's (2015) study revealed that Pio resettlers were able to slowly recover 23 years after the 1991 Pinatubo eruption and subsequent lahars. Resettlers had much better lives than they had before and already considered themselves as part of their new community. This was due to their involvement in resettlement planning, the opportunity to make decisions about their houses (location in the site, layout, housing expansions), distance from their relatives and their old houses, and having better education systems in the resettlement site. The Pio resettlers also took part in the municipal elections and some of them were elected as town officials.

4.4.3.2 Financial resources: source of income and savings

In 2014, children of the resettlers had been able to finish college and get jobs that contributed to their family's finances. This increased the resettlers' purchasing power to acquire the things that they need or want. This has given them a sense of recovery since the disaster. The growing number of businesses is another evidence of this process. Some of the small businesses such as small grocery stores, eventually grew into larger-scale enterprises like larger grocery stores (Quiambao, 2015).

4.4.4 *Incorporation stage*

4.4.4.1 Political resources: political representation

In 1995, a year after the establishment of the Buensuceso resettlement site, national government and NGOs delegated the responsibility for the management of recreation facilities and multi-purpose centres to the HOAs. In parallel, the LGUs handled public safety and the maintenance of roads and drainage, while water and electricity services were provided by local utility services. This process was initially planned in the resettlement policy by the MPC at the inception of the resettlement project (NEDA, 1996). However, in the late 1990s and early 2000s, those resettled in government sites still voted in the electorate of their original village. They also retained their village councils, which overlapped with the new leadership structure in the resettlement site (Gaillard, 2015).

Chapter 5. Discussion

Several political, cultural, psychological, economic, and legal factors foster and hinder resettlement sustainability (Quarantelli, 1985). This chapter discusses the various aspects that influence resettlement outcomes based on the four case studies presented: the 1991 Mt. Pinatubo eruption and subsequent lahars, the 2006 Mayon volcanic eruption, Typhoon Sendong in 2011, and Typhoon Yolanda in 2013. It also covers the resettlement stages reached in each case.

5.1 Factors that contributed to the sustainability of resettlement

5.1.1 *Access to government services*

During the recruitment stage, resettlers' access to government services appeared to be significant in all four cases. The implementing agencies carried out site identification and acquisition, site development, and beneficiary selection. Through the government and other implementers' assistance, the resettlers were able to access resources not locally available. For instance, the resettlers benefited from the resources that the implementing agencies provided such as land and houses which they lost from the disasters. As Benson & Twigg (2007) point out, people affected by disasters often need outside assistance to recover from the devastation caused by disasters. Scudder & Colson (1982) also indicate that the stress brought by resettlement limits people's coping mechanisms in a way that they often have to depend on government or other implementing agencies' resources to help rebuild their lives after a disaster.

The resettlement implementers also ensured the resettlers' ability to live in safe areas after the Yolanda, Sendong, and Pinatubo disasters. This was through site assessment and implementation of a "no dwelling zone" policy in hazard-prone areas (Usamah & Haynes, 2012; Yee, 2018a). This contributed to the resettlers' sense of security from natural hazards (Usamah & Haynes, 2012) and echoes the study results of Jamshed et al. (2019), where a site's safety from natural hazards was shown to facilitate the improvement of resettlers' overall situations.

In the transition stage, the usufruct arrangement in resettlement was common across all four cases. The findings of this study suggest that obtaining occupancy rights improved the resettlers' security of tenure, especially those who were informal settlers prior to resettlement (Usamah & Haynes, 2012; Labayo, 2019). This supports Quarantelli's (1985) notion that people significantly value land and house ownership in many societies, which facilitate their smooth transition to new resettlement sites after a disaster.

In the Pinatubo resettlement, the implementers provided schooling for resettlers up to the tertiary education level. Families' access to these services helped their children finish school, which then contributed to the families' income in the long run (Quiambao, 2015). This reflects Freire's (1998)

concept of “cultural revolution” where people become subjects of their own freedom and empowerment through education and this eventually becomes part of development more broadly.

5.1.2 Proximity to social networks, place of origin and place of work

Resettlers' social ties and networks also affected their ability to adjust in the resettlement sites (see Cuaton 2019; Quiambao, 2015). In both the Pinatubo and Tacloban case studies, the resettlers' proximity to their relatives and kin provided them with a sense of security within the site. In the Pinatubo case study, the proximity of Pio resettlement site to the resettlers' place of origin also helped them to easily adjust to their new life (Quiambao, 2015). This allowed them to visit their former neighbourhood easily. It also helped that they were already familiar with the local language and government officers in the area. According to Quarantelli (1985), this is because people tend to do activities they are familiar with, which is strengthened by their cultural values and beliefs. Oliver-Smith (1991) also notes that leadership structures and social connections serve as an important role in people's relationships with their environment.

5.1.3 Resettlers' participation in the resettlement process

In the Pinatubo case study, Pio resettlers' voices were considered in decision-making process. The resettlers were able to decide on the location of their houses in the resettlement site, the size and layout of the houses, and the number scheme. They were also able to decide on the official name of the resettlement site. Since there was a self-built housing option in the Pinatubo resettlement, the resettlers made all the construction-related decisions according to their needs. They also had control over the materials they used in construction and were able to reuse some of the materials from their old houses. As a result, the resettlers felt highly satisfied with the size, design, layout, and quality of their houses (Quiambao, 2015).

This echoes Oliver-Smith's (1991) argument that people's participation in resettlement planning and implementation is a key factor to resettlement sustainability. In his study of post-disaster resettlement in Guatemala, he found that resettlers were able to influence decision-making in their resettlement, which enabled the formation of an organically evolving type of leadership, sense of competence and ownership of the site. The resettlers were also able to demand the government to provide their needs in the resettlement site through rallies. This is an example of transformative participation, which involves the empowerment of the local people. When this happens, meaningful and genuine participation can be achieved (White, 1996).

5.2 Factors that hindered the sustainability of resettlement

5.2.1 Resettlement governance

In most of the resettlement projects, implementing agencies adopted a top-down approach to resettlement. This means that implementers made decisions for all aspects of the resettlement – who is eligible for resettlement assistance, where the resettlers should transfer, and what on-site services they needed. Beneficiaries of the Sendong, Yolanda, and Mayon resettlement projects had limited involvement in decision-making, especially during the planning stage. They were not consulted regarding the type and design of the houses, the materials used for housing construction, the location of their houses in the site, and the ways in which they could secure sources of income at the new site. The implementers simply informed the resettlers about these, the mode of house ownership, and their rights and responsibilities within the resettlement site.

Consequently, the implementers overlooked beneficiaries' needs and the local context-specific conditions in all four case studies. The resettlers were not satisfied with the size and layout of the houses. Most of them complained about the poor quality of houses provided to them. According to the resettlers, there was insufficient room for other essential functions such as a kitchen and laundry areas, the houses were too small to accommodate their whole family, and houses had poor ventilation. The lot provided was also small and did not allow space for backyard gardening (Gaillard, 2015; NEDA 1996). Aysan and Oliver (1987) found that in the 1970 Gediz post-earthquake resettlement in Turkey, many issues that the resettlers raised concerning poor site selection, inadequate housing design and construction emanated from a lack of consultation with the resettlers themselves, and a lack of understanding their needs and capacities. This caused problems in resettlement, which would ultimately lead to the abandonment of the site altogether (Oliver-Smith, 1991). Cernea (1997) also acknowledged that resettlers lose interest and sense of ownership in the units provided to them if resettlement policies do not simultaneously facilitate the improvement of housing conditions.

Furthermore, resettlement implementers for the Sendong, Yolanda, and Mayon resettlement projects prioritised timely completion and focused on providing houses to beneficiaries. This compromised the site's safety from other hazards in the Sendong and Yolanda resettlement projects. For instance, some houses in the Sendong resettlement (Calaanan site) were built in landslide-prone areas and some houses in the Yolanda resettlement (Tanauan site) were built in flood-prone areas. This resulted in further resettlement of the beneficiaries. Quarantelli (1985) argued that there is often a mismatch between resettlement implementers' perspectives and that of the resettlers. Implementers tend to make decisions on resettlement based on their technical point of view, which is different from the priorities of the resettlers themselves (Quarantelli, 1985; Oliver-Smith 1991). According to Oliver-Smith (1991), this happens when the implementers do not involve the resettlers in the resettlement process and fail to recognise their needs and local knowledge. For instance, implementers prioritise the construction of houses, while the needs of the resettlers are neglected, causing a negative impact on

the resettlers' overall wellbeing. This is because implementers usually focus on physical housing and thus fail to capture the very concept of home for the resettlers where their historical, social and cultural identities are deeply attached (Cernea, 1997).

5.2.3 *Disruption of social links*

Oliver-Smith (1991) highlights that social factors such as distance from relatives or original dwellings could affect resettlers' adjustment in the resettlement site. In the Mayon case study, the disruption of the resettlers' established social links made their adjustment in Tagaytay site more difficult. Resettlers in the Yolanda case (Tacloban site) also felt uncomfortable when they left their place of origin. This is contradictory to the Pinatubo case (Pio site) discussed above, where the resettlers adapted in their new lives with relative ease because they had been relocated nearer to their families and their original dwellings. As Cernea (1997) notes, forced displacement disintegrates patterns of social organisation and causes a loss of social capital. Uprooting the resettlers from their familiar surroundings and vital social ties adversely affect their behaviour and overall wellbeing (Quarantelli, 1985; Cernea, 1997). In many cases, this can cause further forms of disaster for the resettlers (Oliver-Smith, 1991; Quarantelli, 1985). This was evident in the Tacloban case study, where a resettler stated that typhoons such as Yolanda were "once in a lifetime" disasters, but forced resettlement meant dealing with disasters on a daily basis.

5.2.4 *Lack of access to basic needs and services*

In the Mayon, Yolanda, and Sendong case studies, the resettlers did not have access to water and electricity in the resettlement sites. In the Pinatubo case, the resettlement implementers provided water and electricity. However, the resettlers faced challenges in using these facilities as they experienced water shortages at the Buensuceso and Bulaon resettlement sites and affordability problems in paying for electricity bills in all sites. Because of such hurdles, the resettlers had a hard time adjusting in their new life as these resources that they needed for daily living were either not available or not accessible. This resonates with Oliver-Smith's (1991) notion that resettler's lack of access to resources heightens the hardship that they experience within the site.

In addition, Quarantelli (1985) argues that any resettlement initiative entails economic or financial consequences. Indeed, the results of this study across the four cases show that the most common challenge that resettlers faced was the securing of financial resources because the location of their jobs prior to resettlement was far away from the resettlement site. They had to therefore spend additional money on transportation. The added expenses made it more challenging for them to sustain their basic needs. Consequently, they had a negative perception of their economic condition in the resettlement sites. This is in line with Oliver-Smith's (1991) sentiments that resettlers' lack of access to employment opportunities exacerbates the difficulties that they face in the resettlement site itself.

Another indicator affecting unsustainable resettlement is when resettlers go back to their place of origin for work, regardless of their exposure to prior hazards in that place (Oliver-Smith, 1991). This is evident in all case studies. In the Yolanda resettlement, some of the resettlers abandoned the site and returned to their place of origin to retain their incomes.

Related to this is the mismatch between the resettlers' skills and the available on-site resources. For example, in the Mayon and Pinatubo resettlement cases, most of the resettlers had skills or jobs that required tracts of land, but these were not available in the Camalig and Bulaon resettlement sites (Labayo, 2019; Gaillard, 2015). This reflects one of Cernea's (1997) impoverishment risks, where people cannot utilise their skills in the resettlement site, thus resulting in a loss of human capital. Oliver-Smith (1991) also emphasises that the ability to use their skills to earn a living greatly affects people's perceptions toward their environment.

5.3 Resettlement stage reached in four cases

Figure 5-1 provides a timeline of the resettlement process, considering Scudder & Colson's (1982) four stages, as documented in the four case studies. This assessment is based on the researcher's own interpretation of the secondary data collected. It is also important to note that the findings of this study cannot be generalised and applied to all the resettlement sites in the four cases. This is because there are varying context-specific situations and conditions in each resettlement site.

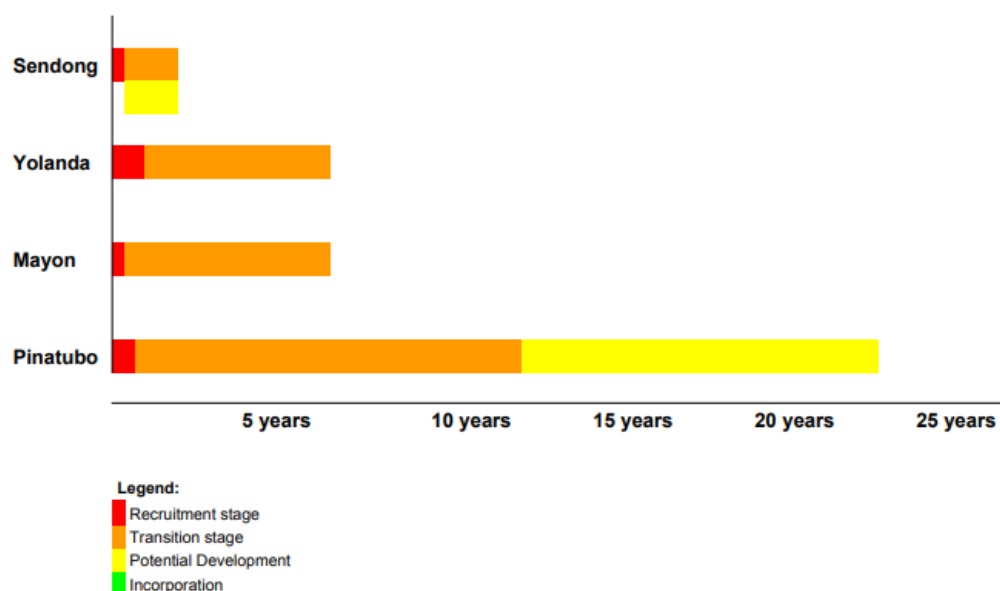


Figure 5- 1 Timeline of the resettlement process in four case studies

In this study, the recruitment and transition stages were evident in all four cases. The recruitment stage included the identification of beneficiaries and resettlement sites, site acquisition, and site development. It took four months for the Sendong and Mayon resettlement process to reach this stage. It took eight months in the Yolanda case and six months for the Pinatubo resettlement initiative.

The availability of land is the main factor affecting the duration of this stage. For instance, in the Sendong case, the government had already purchased land for resettlement even before the typhoon hit (Carrasco, et al., 2017). This was because it was part of their socialised housing programme and was why the resettlers were able to transfer quickly to the Calaanan site. On the other hand, the lack of available land impeded the resettlement process for the Yolanda (Tacloban site) and Pinatubo (Bulaon site) cases.

The transition stage covers resettlers' access to various resources that affect their adjustment to their new site. It took two years for the people resettled after typhoon Sendong to achieve this stage. This process proved much longer in all of the other cases – six years following typhoon Yolanda and the Mayon eruption and twelve years after the Pinatubo eruption and lahars. Overall, this study indicates that the lack of access to essential services and employment, and the added distance from social networks are main factors that affect the resettlers' ability to fully transition to their new lives.

The data covered in this study does not allow to draw definitive conclusions about the subsequent stages of Scudder & Colson's (1982) framework. However, available data shows that both the Sendong and Pinatubo resettlement initiatives have reached the stage of potential development. As per Scudder and Colson's framework, a common indicator for the two cases is the increase in household income and purchasing power after their resettlement. In the Sendong case, another indicator of this stage was the positive attitudes of the resettlers toward the development and sustainability at the Ecoville, Indahag and Macapaya sites. In the case of Pinatubo, a growing number of businesses in the resettlement site constitute another indicator of this stage. It is, however, worth noting that only a small percentage of the Sendong resettlers in Santiago et al.'s (2017) study have been able to increase their incomes after their resettlement to the Ecoville, Indahag and Macapaya sites, as compared to Quiambao's (2015) study, where the majority of the resettlers in Pio site have been able to obtain higher incomes. This was made possible by the resettler's involvement in the resettlement planning process, the opportunity to make decisions about the location, layout and expansion of their houses, the proximity of the site to their relatives and their old houses, and the ability to live in a familiar functioning political system in the Pio resettlement site (Quiambao, 2015).

It seems that none of the resettlement initiatives in all four case studies has reached the phase of full incorporation into the resettlement site. Although the transfer of responsibilities from the implementers to the resettlers became apparent in the Pinatubo case study (NEDA, 1996), full incorporation to the resettlement site has not yet been achieved since many resettlers still voted in their original village's electorate, as indicated in Gaillard's (2015) study in the early 2000s.

Chapter 6. Conclusion

This study on post-disaster resettlement in the Philippines has aimed to investigate how resettlers cope and form new lives in different resettlement projects after disasters. The 1991 Mt. Pinatubo eruption and subsequent lahars, the 2006 Mayon volcanic eruption, Typhoon Sendong in 2011, and Typhoon Yolanda in 2013 have been illuminating case studies for this project. They have highlighted how various natural, political, physical, financial, and social factors contribute or hinder the ongoing sustainability of resettlement projects. The following issues seem particularly significant:

1/ Varying conditions in the resettlement sites. The factors that impact resettlers' adjustment to a resettlement site are different from one site to another. Resettlement projects may be in the same province or town, but people's transitions to the different sites varies. It is important to note that some studies used for this research only covered one or two factors, and this is why the findings in this study include a combination of situations from different resettlement sites. To avoid generalising the results, the resettlement sites were specified in this study. It would however be better if future studies would focus on just one or two resettlement sites where all the factors can be assessed.

2/ Availability vs. accessibility of resources. It was evident in all four case studies that resources provided by the implementing agencies were important for the adjustment of the resettlers in the site. This was especially significant during the initial stages of resettlement, where the resettlers needed outside assistance to get back on their own feet as they had lost most of their belongings and other resources during the disaster. However, the mere availability of resources such as land, water, and electricity may not have been enough for their adjustment to the resettlement sites. For instance, while the resettlers were provided with the land where their new houses were built, some resettlement initiatives required the resettlers to pay for amortisation. Furthermore, although water and electricity were provided on the site, the resettlers had to pay for monthly electric and water bills. Hence, implementers should also assess the resettlers' capacity to pay for these resources and consider how they can sustain their access to these resources.

3/ Top-down vs. bottom-up resettlement approaches. Implementers often control the early stages of the resettlement process, such as beneficiary selection, site identification, and site development. While the resettlers need assistance from the implementers during these stages, it is also important to ensure that resettlers have the ability to influence decisions regarding their resettlement – the location of the site, the types and layouts of their houses, and the specific resources they need that are not locally available. These stages are crucial in long-term resettlement sustainability as the resettlers' situation at the onset of their resettlement affects their transition into their new lives going forward. This eventually allows for them to move into stages of potential development and incorporation within their new home environments. As Scudder & Colson (1982) emphasise, decisions made at the early stages of resettlement highly influence the resettler's condition in the later stages of the resettlement process.

4/ Providing houses instead of homes. The provision of physical houses is just a short-term solution to people's displacement. There are cases where resettlers have abandoned their new houses as their essential needs were not addressed during resettlement, which ultimately caused adverse effects on their overall wellbeing. Thus, resettlement should encompass people's deep connection with their social and cultural environments, which reinforces their sense of belonging and security.

This research also found that another challenge that resettlers encounter in post-disaster resettlement is the loss of essential documents like high school or university diplomas. This causes an additional burden to resettlers when looking for jobs because these are basic requirements for employment. This issue is not well documented in the research space yet and could be worth exploring in the future.

Meanwhile, in investigating the resettlement stages reached in each case study, the researcher faced challenges regarding the extent of available secondary data. Most of the cases covered different factors that impacted resettlement outcomes, but none specifically looked at the resettlement stages as per Scudder and Colson's framework. Data from published studies on resettlement only accounted for the recruitment and transition stages, as these studies only documented a short duration of the resettlement projects. In addition, different indicators were used in assessing these stages due to limited data available and because Scudder and Colson's framework has no specific guide on when these stages explicitly start and end.

For the recruitment stage, not all the resources used for this study contain the information required within the timeline of site identification, site development, or beneficiary selection. This research therefore suggests that future studies could use the same point of reference in assessing the duration of this stage. For example, the first encounter between the resettlers and implementers could be considered the start of the recruitment stage, while the resettlers' transfer to the site could indicate the start of the transition stage.

There is also insufficient evidence gathered for the stages of development and incorporation. This might be because most disaster studies often discuss relief and recovery phases. However, only a few deal with the long-term impact of disasters on people's lives, including the latter resettlement stages. The references used for this research therefore include studies with limited coverage of the resettlement process. For instance, available studies only accounted for resettler's experiences three years after typhoon Sendong, six years after typhoon Yolanda and ten years after the Mayon eruption. Only the Pinatubo case has one study which investigated the resettler's lives 23 years after the disaster.

Furthermore, in determining the stage of potential development as indicated by the increase of household income, it is important to have a baseline for assessment. That is, the number of years from which the resettlers gain an increase in income. For instance, it would be better if the study measured the increase in a family's income after five, ten, fifteen years and so on. This was one limitation of a

desktop study since the researcher only relied on the available data and had no control over the timeline that the published studies covered.

Since there are currently limited studies pertaining to long-term post-disaster resettlement, one may consider a longitudinal study of resettler's lives, which could capture all resettlement stages as per Scudder and Colson's framework. This potential research could employ activities that allow the resettlers to determine the challenges and opportunities they experienced at each stage and create their own timeline of how the whole resettlement process looked like to them.

Aside from recommendations on future studies that will help to further understand people's lives during post-disaster resettlement, this research also puts forward the following suggestions in improving policies to enhance resettlement initiatives:

1. An inclusive policy space should be created, which considers the concerns raised by the resettlers themselves. Giving opportunities for resettlers to participate in the local and even national policy formation process helps to create resettlement projects that are suitable for them. Evaluation measures should also be included in the policy. These should consider feedback from various resettlement stakeholders.
2. Post-disaster resettlement policies should consider holistic factors that impact resettlers' lives going forward. Since there are varying situations in resettlement sites, different measures should be customised based on the resettler's contextual characteristics and concerns. This is best achieved by fostering the participation of resettlers in assessing their needs and designing the resettlement project from the outset.
3. Since resettlement involves different stakeholders, effective coordination should be ensured. It would be more efficient if stakeholders could find a way to complement the identified resources that the resettlers need, to avoid duplication and maximise their use.
4. Genuine resettlers' participation, especially during the early stages of resettlement, should be encouraged to allow for a faster, more sustainable, more appropriate, and organic resettlement process. This will also help reach the stages of development and incorporation in resettlement more broadly.

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Appendix A. Thematic analysis

Recruitment stage	Sendong	Yolanda	Mayon	Pinatubo
Natural resources: access to land	Resettlers transferred to Calaanan site 4 months after Sendong; land purchased by the CDO local govt	Tacloban -lack of available land for resettlement -gov't-owned lands lacked legal titles,used for agri. purposes,no road access & flood-prone -private land prices rose by ten times -agricultural to residential land conversion became essential but it took 6 months due to the tedious process of issuance of documents needed Tanuan -no issue on land -NGO identified and purchased land and donated this to the LGU		
Natural resources: ability to live in safe areas		-Tacloban gov't prioritized informal settlers in coastal areas which were most at risk -"no-dwelling zone" policy prohibited the construction of houses within 40 meters from the shoreline. Informal settlers can't to go back and to build houses in their place of origin	Tagaytay site -Geohazard assessment conducted to confirm site's safety from lahars, floods, landslides, and liquefaction. -Housing designs complied regulations and requirements on engineering design of new buildings. -Beneficiaries felt satisfied with housing construction because it provided them with a sense of security from natural hazards	-Safety from lahars and accessibility to water sources became the basis for choosing Bulaon site -Safety from health hazards were also considered in site selection

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Political resources: access to government services	Access roads, community centres, health facilities, schools, transportation and commercial areas available in Calaanan	Tacloban beneficiaries complained that site is too far from their sources of incomes, schools, and social networks in city centre	Tagaytay -House construction started in 2006 and became ready for occupancy in 2010. Various stakeholders contributed to funding the project Camalig -NGOs and private donors set certain criteria in identifying, screening, and assessing the resettlement beneficiaries. They also advised that whole barangays could not move together in the site -Local govt resettled Ati indigenous tribe which came from a permanent danger zone.	-Gov't in-charge of site acquisition and development in MPC sites -NGA's provided roadways, drainage, and water supply
Political resources: political representation			Gov't informed beneficiaries about plans, rules, regulations, and rights re: resettlement.	Gov't agencies validated and identified beneficiaries for the resettlement assistance
Physical resources: house quality		Type of houses Tacloban did not allow vertical or horizontal expansion		
Transition stage	Sendong	Yolanda	Mayon	Pinatubo
Natural resources: access to land	-residents in all resettlement sites were awarded occupancy rights to live in a house through usufruct arrangement -local government keeps ownership of	Tacloban -Resettlers can stay in the site for as long as they want through usufruct arrangement -Since most of those resettled were informal settlers, having a house they legally own is considered a significant benefit of the relocation process	-Beneficiaries acquired housing contracts that guaranteed their right to occupy a lot at the site for up to 99 years and extendable. -Obtaining legal document enhanced their security of land tenure since they had no	-Bulaon resettlers raised concerns about the lack of farmland in the site since some of them were farmers. -Gov't resettlement assistance followed a usufruct arrangement However, occupancy rights issues remained unresolved in

Appendix A. Thematic Analysis

	the house and lot -no legal framework re: formal transfer of property rights to beneficiaries	Tanauan -Land titling process had not occurred within 3 years after resettlement. -Gov't owns the land where the resettlement site sits	access to land ownership before	the MPC resettlement sites and the beneficiaries did not receive ownership rights as of 1996 -In the Pio site, house ownership certificates were awarded to the resettlers in 2003. However, as of 2014, the actual land titles had still not been provided to them
Natural resources: inability to live in safe areas	-government's failure to properly assess hazards at Calaanan resettlement site due to the pressure to rapidly relocate the survivors. -some houses were built in landslide-prone areas and required further relocation -number of housing units in Calaanan site remain unoccupied	Resettlers appreciate that they are not any more exposed to storm surges but have to deal with flooding in the site		

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Political resources: access to government services	<ul style="list-style-type: none"> -Lack of electricity, lack of water, and poor transport conditions were reported in Macapaya site -Long-distance travel and high travel costs to CBD -Concerns about peace and order; need for increased police presence in Indahag site 	<p>Tacloban</p> <ul style="list-style-type: none"> -Existing schools were overpopulated and could not accommodate children who relocated -No access to basic services (water, electricity, and sanitation facilities & health care) <p>Tanauan</p> <ul style="list-style-type: none"> -Resettlers sent their children in their old schools -LGU provided access to water but resettlers raised groundwater contamination issues 	<ul style="list-style-type: none"> -DSWD conducted seminars and house-to-house visits and informed beneficiaries about the type of houses and their rights and responsibilities in the site -No electricity access in all sites for 1 year -People resettled by gov't had no access to water, food, and transportation which hindered their adjustment in their new environment 	<ul style="list-style-type: none"> -Gov't conducted values formation seminars to instill proper conduct expected in the sites. -Complete facilities and services provided in MPC sites but access to resources became a challenge -MPC sites with schools and rec. facilities, market, health clinics -NGO sites lacked health clinics, rec.facilities, and markets. Resettlers have access to electricity but paying for the monthly electric bill became a challenge for most residents -All sites were provided with water supply systems but some residents experienced seasonal water shortages. Residents did not have enough access to potable water -Communal facilities e.g churches and multi-purpose buildings provided in Bulaon, Pio and Buensuceso sites. -Road access & proper drainage systems available in all sites
Political resources- political representation	<ul style="list-style-type: none"> -Macapaya residents entrusted NHA regional office to lead the recovery process. NHA with other stakeholders could help improve their access to basic services 			

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	<p>in the site</p> <ul style="list-style-type: none"> -Some residents who were migrants complained about social and political discrimination since they did not become eligible for resettlement assistance. 			
Financial resources: sources of income and saving	<ul style="list-style-type: none"> -All resettlers faced challenges re: access to employment and alternative sources of income -Calaanan resettlers had a negative perception of their economic situation in the site -Macapaya, Indahag and Ecoville resettlers still relied on their work in the city which was far from the sites -no projects for alternative sources of income in the Macapaya and Indahag sites -families with businesses in their original residence had lower income in the site since their established social connections were 15 km away from the site -resettlers further disadvantaged when 	<p>Tacloban</p> <ul style="list-style-type: none"> -Resettlers had no access to jobs in the city centre -Additional cost for transportation to send their children back to their old schools in the city <p>Tanauan</p> <ul style="list-style-type: none"> -Most of resettlers were fisher folks and informally established a second shelter along the coast to sustain their livelihood -Others abandon the site and returned to their place of origin to work 	<p>Tagaytay</p> <ul style="list-style-type: none"> -Lack of opportunities to secure incomes -Resettlers became dependent on employment and schools in their original settlement (4 to 12 km away from the site) -They had to spend additional money on their daily transportation to go to work and to send their children to school <p>Camalig</p> <ul style="list-style-type: none"> -Living in the site had negative effect resettlers' economic life -No employment alternatives, they could not earn money to sustain their basic needs 	<p>All sites:</p> <ul style="list-style-type: none"> -Limited ways of immediately earning money to access basic needs. Families felt that their living conditions had deteriorated after the eruption of Mt. Pinatubo <p>Bulaon</p> <ul style="list-style-type: none"> -Residents felt concerned that they could not afford loan amortisation -Large number of resettlers were unemployed and unskilled so MPC ensured that sites could provide jobs through building productivity centres -Some of them started to go back to their original village or went to other places to look for economic opportunities <p>Pio</p> <ul style="list-style-type: none"> -Productivity centres were also provided but it became a storage area afterwards since large businesses were not interested in investing due to its remote location -Some resettlers had a hard time finding work and most of

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	looking for jobs because of lost documents such as high school or university diplomas after the typhoon			<p>them needed support to secure their source of income.</p> <p>Buensuceso</p> <p>-Livelihood centre in built by NGO, which was used in clothing production</p>
Social resources: social ties and networks	<p>-Calaanan resettlers had a positive perception of neighbourhood environment and community life in the site.</p>	<p>-Living close to their relatives gave resettlers a sense of safety and security.</p> <p>-Moving away from their place of birth or original dwelling made the Tacloban resettlers feel significantly uncomfortable.</p>	<p>Each block of houses in Tagaytay site comprises people from different places; disruption of pre-existing social ties made it harder for resettlers to adjust to their new home.</p> <p>-Organic leader in the site tried to establish new groups but this proved difficult due to the continued mobility of the resettlers between the site and their old dwellings</p>	<p>-Cultural backgrounds and traditions affected people's adjustment to resettlement programs</p> <p>Bulaon</p> <p>-Resettlers' deep attachment to their place of origin was observed. People from Bulaon maintained regular ties with their former village. They named the organisations formed, schools, churches, and other facilities in the site after that of their native town</p> <p>-All resettlers still voted in their original village and retained their village councils, which overlapped with the new leadership structure in the site.</p> <p>Pio</p> <p>-Resettlers stated that living near their relatives and kin provided them with a sense of security, support, and belonging which made it easier for them to adjust in the site. It also became easier for them to visit the place of their old houses because of its proximity to the resettlement site. They were also familiar with the local language and government</p>

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				<p>officials since they lived in the same town. This prevented them from suffering from anxiety</p> <p>NGO sites</p> <ul style="list-style-type: none"> -Resettlers preferred to stay near the location of their original houses. They felt satisfied that the resettlement sites were located within their home province -Sectoral orgs & people's organisations, mostly HOAs, were established in the sites to reinforce the cohesion of the resettled population -HOAs organised various committees in the site.
Human resources: health, skills, knowledge		<p>Tanauan</p> <ul style="list-style-type: none"> -NGO implemented skills training for the resettlers -Resettlers rendered 1500 hours of labour in building their house and in helping build their neighbour's house. -They also underwent a values formation workshop which aimed to develop their 'sense of community' and instil long term housing maintenance skills 	<p><u>Skills and knowledge</u></p> <p>Tagaytay</p> <ul style="list-style-type: none"> -Shift needed from a lifestyle focused on primary production for their self-consumption to a lifestyle where they need to use cash to support their everyday lives. -Lack of opportunities to secure new skills <p>Camalig</p> <ul style="list-style-type: none"> -Ati people mainly relied on selling traditional medicine but there were no tracts of lands they could cultivate for growing herbs and medicinal plants in the site 	<ul style="list-style-type: none"> -Skills mismatch between the expertise of the resettlers and the newly generated jobs in the productivity centres. -Gov't agencies provided skills training to the resettlers. -A lot of the resettlers were formerly engaged in livestock and farming but after being resettled, they had to shift to micro-enterprises. Because of this, some resettlers became dependent on relief goods for months in order to survive

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Physical resources: house quality	<ul style="list-style-type: none"> -no spaces for kitchen/laundry areas and separate rest and storage in Calaan site -housing materials used since it lacked proper ventilation and thermal insulation -restrictions were placed on adopting locally suitable solutions for the design and construction of Macapaya site houses 		<ul style="list-style-type: none"> -Resettlers felt content with durability of the houses but not satisfied with the housing size and layout -They built fences and planted trees in their neighbourhood 	<p>Self-built houses Pio resettlers were highly satisfied with the houses because they were able to construct houses that are large enough to accommodate their family. They also had the chance to reuse some materials from their old house in constructing their new house</p> <p>Contractor-built houses -Bulaon and Pio resettlers were not satisfied with the housing design (too hot inside the house, insufficient bedrooms, toilet and kitchen were too small -Bulaon resettlers complained about small lots provided to them, having no space to build a garden. The site was also different from their original village in general -Pio resettlers raised concerns about the substandard houses built by the contractors.</p>
Stage of potential development			<p>Not reached -Resettlers went back to their original dwellings and left the site after just a few months of living there -majority of the houses in the NGO and private donor-managed resettlement remained unoccupied after two years</p>	<p>Bulaon Overall, they had a hard time adapting to the situation in the site. More than half of them wanted to return to their place of origin -The resettlers considered resettlement as just a temporary need. They occupied</p>

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			-Resettlers lack in their investment in houses such as any new housing developments, modifications, or extensions	houses in the sites for only up to four years
Financial resources: sources of income and saving	-14% of the resettled families were able to increase their income status two years after the disaster.			<p>Pio</p> <p>-Resettlers were able to slowly recover 23 years after the eruption and subsequent lahars. They had much better lives than they had before and already considered themselves as part of their new community.</p> <p>-Resettlers took part in the municipal elections and some of them were elected as town officials.</p> <p>-Children of the resettlers had been able to finish college and get jobs that contributed to their family's finances. This increased the resettlers' purchasing power to acquire the things that they need or want.</p> <p>-Growing number of businesses</p> <p>Some of the small businesses such as small grocery stores, eventually grew into larger-scale enterprises like larger grocery stores</p>
Other indicators:	-Resettlers' attitude towards development in the site: Ecoville, Indahag and Macapaya resettlers			

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	indicated that there are still many developments needed to make the resettlement community more liveable and sustainable.			
Incorporation stage	Sendong	Yolanda	Mayon	Pinatubo
Political resources: political representation				Buensuceso -National gov't and NGOs delegated responsibilities for the mgt. of recreation facilities and multi-purpose centres to the HOAs. -Security in the site and maintenance of roads and drainage became the responsibility of the LGUs. -Local utility services handled the water and electricity services.
Implementers	Sendong	Yolanda	Mayon	Pinatubo
NGO	x	x	x	x
Private groups	x		x	
Govt	x	x	x	x
Resettlement governance/ approach	-top down: implementers decided on all aspects of the resettlement	top-down -For many government-led resettlement initiatives, sustainable relocation	top-down Objective of the implementing agencies for resettlement only focused on short-term results.	Pio- bottom up/ mixed Other MPC and NGO sites: top down

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	<ul style="list-style-type: none"> -implementing agencies prioritised to achieve completion timeline, budget limit and technical standards over addressing resettlers' cultural or social concerns -implementers had limited understanding of beneficiaries' needs and local conditions and failed to consider their concerns 	<p>entailed providing permanent housing, particularly in the form of concrete houses, with little consideration for the other dimensions of the survivors' livelihoods</p>	<p>-They aimed to provide secure housing in a reasonable timeline</p>	<ul style="list-style-type: none"> -Site planning and design became the responsibility of the engineering offices of the local government units -NGOs hired private contractors for site planning and design -Gov't held different assemblies to inform the beneficiaries on their roles and responsibilities in the sites
Resettlers' participation	<ul style="list-style-type: none"> -limited involvement in the decision making and had limited control in the planning and construction stage in Calaanan site -active involvement of the NGO in the recovery process entailed active participation from the residents in Ecoville -continued engagement bet. the residents and NGO through the skills training that the NGO provided -Ecoville resettlers raised the importance of HOA in their recovery 	<p>Tacloban</p> <ul style="list-style-type: none"> -Beneficiaries had no involvement in the resettlement planning (choosing the location of the site and the type and design of houses -some resettlers not informed of when they would transfer to the resettlement site <p>Tanauan</p> <ul style="list-style-type: none"> -Resettlers rendered 1500 hours of labour in building their house and in helping build their neighbour's house. 	<p>Tagaytay</p> <ul style="list-style-type: none"> -Beneficiaries not involved in decisions regarding site selection, design of the houses, beneficiary selection criteria, location of the house in the resettlement site and securing sources of income in the site -DSWD conducted seminars and house-to-house visits informed beneficiaries about the type of houses and their rights and responsibilities in the site -Resettlers built fences and planted trees in their neighbourhood bec. they are not satisfied with the housing size and layout 	<p>All sites: Resettlers were notified regarding the mode of house ownership (25-year loan amortisation)</p> <ul style="list-style-type: none"> -Resettlers had limited involvement in the decision-making process of the resettlement <p>Pio</p> <ul style="list-style-type: none"> -Resettlers were involved in the resettlement planning. -They were able to make decisions about their houses (location in the site, housing layout and number scheme, housing expansions) & official name of the site <p>Bulaon</p> <ul style="list-style-type: none"> -Resettlers had no involvement in decisions regarding site layout and design of houses

				<p>and were left with no choice but to accept what the government had already planned for them</p> <p>-They were not involved in the resettlement process.</p> <p>-In the meetings, the beneficiaries became aware of the gov't resettlement plans e.g. facilities and services available in the resettlement site and how to access these</p> <p>Bulaon and Pio- Most resettlers constructed additional rooms and built another floor in the house</p> <p>NGO-sponsored sites</p> <p>-Resettlers were not consulted regarding site selection, design and layout, available facilities and services in the site, and housing sizes and materials.</p>
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