REDEFINING A PLACE TO LIVE:
DECISIONS, PLANNING PROCESSES, AND OUTCOMES OF RESETTLEMENT AFTER DISASTERS

BY

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DISSERTATION

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ABSTRACT

Little is known about resettlement after disasters, although research on broader types of resettlement is not new. Despite there being some studies on post-disaster resettlement, the majority of them focus on short-term response, but not long-term recovery. Meanwhile, the number of people displaced due to environmental change, best exemplified by disasters, continues to rise.

This dissertation introduces the concept of post-disaster "resettlement" as the process of permanent relocation following initial post-disaster displacement. Such displacements make communities face decisions over restoration of their livelihoods. One of the major decisions that communities encounter is between relocation and return – a decision between the opportunity of starting a new life in a new location or sustaining their pre-disaster livelihood. In disaster-affected areas, local governments also face a similar dilemma: whether to support relocation or repopulation, based on consideration of future vulnerabilities and inefficiencies of communities and regions.

This dissertation targets two districts in the *Nijumurago* area of Japan that was devastated by the 2004 *Chuetsu* earthquake, to understand resettlement dynamics after large disasters. The target area provided a unique opportunity to study post-disaster resettlement comparatively, as two similar districts governed by different cities were provided with distinctive resettlement programs – one to relocate and the other to return. For in-depth study, five communities were selected to represent relocated, returned, and disintegrated communities for each. By observing these districts and communities, I aimed at unpacking the complex dynamics of resettlement from three conceptual dimensions of resettlement decisions, influence of planning processes on the resettlement decisions, and post-resettlement outcomes. I sought to identify key planning elements that lead to successful resettlement, by assessing the findings of three conceptual dimensions on decisions, planning processes, and outcomes.

This study identifies several notable characteristics of post-disaster resettlement. First, post-disaster resettlement is a dynamic that develops based on the inherent characteristics of the affected areas. Because of this, plans and policies provided to communities by the governments or planners are often disregarded. In particular, resettlement programs designed to achieve their

aim primarily by means of financial incentives are not always likely to succeed, because households have other competing goals; financial incentives are most influential for those who are most in need. Communities and households are therefore the key players that determine the decisions and outcomes of post-disaster resettlement. Second, however, actions by local government that set the speed of resettlement planning have a large influence on resettlement decisions and outcomes. For example, slower actions involving more deliberate decisions, despite increasing stresses and anxiety during displacement, seem to achieve better results and increased satisfaction in the communities after resettlement. Lastly, although neither relocation or return is inherently the best answer for all cases, collective community resettlement is likely to be more sustainable than disintegrated resettlement, in which community households all come to different resettlement decisions. Furthermore, careful deliberation under a longer-term vision seems critical to achieving resettlement outcomes that are sustainable.

Overall, this research also has made several contributions toward a theoretical understanding of post-disaster resettlement. First, the research suggests a new notion of "event-triggered resettlement" that has characteristics distinctive from both forced and voluntary resettlement. Second, it contributes to add details to two well-known models of post-disaster housing and resettlement. And finally, the research suggests thinking about the second generation of households in recovered communities, in order to assess the sustainability of resettlement.

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CHAPTER 1. INTRODUCTION

Disasters disrupt normality and often set back development efforts. They could aggravate longstanding pre-disaster problems and issues, and the recovery process usually pushes marginalized and less resilient populations further into an adverse situation. Nevertheless, disasters open small opportunities to bring about changes in unfavorable physical conditions and social orders that predominated in societies before disasters, if plans and actions are appropriately mapped out and implemented after such events (Olshansky & Chang, 2009). Meanwhile, communities face various decisions over restoring livelihoods after devastating disasters. With the devastation of their houses and neighborhoods, communities are often dislocated temporarily or permanently. While displaced, they can choose to either relocate or return: with either the opportunity of starting a new life or sustaining their livelihood of *ex-ante* disasters, respectively. Local governments also face a similar dilemma, whether to support relocation or repopulation, considering future vulnerabilities and inefficiencies of communities and themselves.

To this extent, this dissertation studies an area where local governments and communities faced a dilemma in making resettlement decisions while temporarily settled after a devastating disaster. The two local governments in this study provided distinctive resettlement programs – one to relocate and the other to repopulate – in supporting communities to find a permanent place to live. Communities and their members also experienced difficult decisions and complex resettlement processes. This research describes these complexities and difficulties of resettlement, from both the perspectives of local governments and community members. It additionally observes the impacts of the resettlement programs and explains the post-resettlement outcomes of communities and regions. This research, first, aims to explain resettlement dynamics by unfolding the resettlement components and processes. It then presents the implications of these findings for resettlement policies, and finally, it provides recommendations for policy makers and planners to lead better resettlement planning for similarly affected communities.

1.1 Research background

1.1.1 Research Issues

Experiences from recurring natural disasters since the late 1980s have greatly advanced research in mitigation and post-disaster response. Mitigation, or the effort to minimize disaster loss and damage before disasters, has proven quite successful as total death tolls from natural disasters have been decreasing internationally (ISDR, 2004). Moreover, emergency response, the short-term post-disaster activities, has improved with enhanced capacity of governments (Comerio, 1997). Furthermore, these topics of pre-disaster and short-term responses are the main focus of disaster management studies, whereas the long-term recovery aspects of disaster management are yet underexplored. A similar tendency applies to post-disaster resettlement; major resettlement studies after disasters pay attention to short-term displacement, but neglect long-term resettlement (Levine, Esnard, & Sapat, 2007). With an increasing number of displaced communities due to environmental change, disaster being one of the causes, exploring long-term resettlement dynamics, including relocation and repopulation, is becoming important to understand policy/planning decisions that can support better resettlement of affected communities.

Understanding planning processes in post-disaster recovery and resettlement from both practical and theoretical aspects is gaining importance. It is because post-disaster recovery literatures suggest that research on planning processes, such as participation (Berke & Beatley, 1997) and coordination (Olshansky, 2006a), is critical in advancing affected communities, as it could mitigate negative consequences likely to be developed after disasters. Nevertheless, research regarding the influence of planning decisions and processes on long-term outcomes of post-resettled communities is still underexplored. Planners and policy makers in practice also continue to face difficulties upon leading communities to recover from disasters, as few guidelines or principles are available.

Rural areas, already in a state of vulnerability and decline, also represent especially important areas for focus of long-term recovery research. The majority of rural communities are facing decline, as a reaction to hastening urbanization and aging world-wide. For example, 60% of the world's population is predicted to live in urban areas by 2030 (UN, 1999) and more than 20% of the world's population will be over 60 by 2050 for the first time in human history

(Population Division of DESA, UN, 2002). Such rural areas are particularly vulnerable, because populations emigrating to urban areas are going to have more job opportunities; those with fewer opportunities, particularly the elderly, are likely to be left behind. Regardless of this situation, the majority of disaster studies seem to focus on urban recovery, despite the frequency of rural disasters.[1]

Although the occurrence of disasters usually increases the decline of rural communities, there are not many theories, principles or guidelines for planning decisions and procedures for their resettlement. Understanding long-term resettlement dynamics in rural declining areas is therefore important, so that policy makers and planners could lead better resettlement of affected communities in the aftermath of devastating disasters.

1.1.2 Objectives and research question

The ultimate goal of this research is to understand key planning decisions and processes that could lead to better resettlement of disaster-affected communities in declining rural areas. Identifying these essential elements can help planners and policy makers in supporting affected communities for better resettlement. With these research objectives in mind, this dissertation's overarching research question is:

> How do planning/policy decisions and processes influence successful resettlement of disaster-affected communities in the long-term, particularly in declining-rural areas?

This question is further decomposed into four questions, for unpacking the complexity of resettlement after disasters:

1. What are the rationales for governments and affected communities in deciding between relocating and repopulating after a devastating disaster?
2. How do planning processes influence decisions to relocate and repopulate?
3. How does the resettlement choice influence the post-resettlement community?
4. What are the key planning elements that lead to successful resettlement?

As an entry point for unpacking the entangled resettlement dynamics, the first question is addressed to both local governments and communities, regarding the reasons to relocate or return.

[1] Some of the recent drastic disasters that affected mid-mountainous rural regions of the world include: the *Chi-Chi* (Taiwan) earthquake (1999), Kashmir (Pakistan) Earthquake (2005), *Chuetsu* (Japan) Earthquake (2007), and *Sichuan* (China) Earthquake (2008).

Observing both governments and communities is expected to add to understanding decision making, in relation with government and communities. The next question aims to understand the planning processes provided by the government and that emerged within the communities, so that the influence of planning processes on decisions can be articulated. The third question seeks to understand causal relationships between resettlement choice and change of livelihoods before and after resettlement. Observing changes in livelihood assets can help to improve understanding of the impacts on communities and individuals of relocation or returning. Fourth and last, answers to the question regarding the key planning elements that would substantially improve community recovery can be gleaned through observing decisions, processes and outcomes in the post-resettlement scheme. These key elements are believed to have significant practical implications that will benefit policy makers and planners who are facing difficulties in leading communities after disasters.

1.1.3 Area of study

Selecting the area of study has a long story behind it. I first learned about the *Chuetsu* earthquake in my home town *Tokushima*, Japan, on the night before heading back to Chicago after a family gathering. The news media began showing images of the devastated areas of *Nagaoka* City and *Ojiya* City that day and reported about some mountainous communities being isolated. But there was no information on particular damage and the sufferings of villagers and communities, because these villages continued to be disconnected from external communications. Early the next morning, several news stations broke a story about a mother and her two children trapped in a huge landslide, in the area called *Myokenzeki* located in the entrance of the *Nijumurago* area. The family was passing through the tunnel by car when the earthquake occurred. The media was also widely reporting on the derailed bullet train near *Nagaoka* City, which was heading to *Niigata* from Tokyo. Although there were no passenger casualties – the railway technology used is one that can detect the P(rimary)-wave, enabling the sending of a stop signal to the high-speed train before the main shock of the S(econdary)-wave hits – the media were sensitively reporting on the failure of technology to totally avoid earthquake impacts. This is because Japanese society has been naïve about the safety of public infrastructure against

natural disasters, after the "safety myth"[2] against earthquakes had totally collapsed in the wake of the 1995 Kobe earthquake.

Four years later, in the summer of 2008, I decided to visit the *Chuetsu* region on my way back from Jakarta to Champaign via Tokyo, after a few months of short-term summer consultancy in Indonesia. The primary objective then was to gain basic information on the region: institutional backgrounds of the devastated areas, lifestyles of people, and most important, to learn about the conditions of the areas four years after the devastating earthquake. With basic information collected during the first visit, I learned about the earthquake and the region from a general standpoint, and decided to target *Nijumurago* area for my dissertation research. Currently, the *Nijumurago* area does not represent a single local government administration, as it had dissolved into three government jurisdictions after World War II.[3] Nevertheless, *Nijumurago* continues to represent a region not only of mountains, inconvenience, and isolation, but also of unique culture, history and identity for villagers living in the area. With the changes of communities in its long history, defining the physical boundary of *Nijumurago* areas is difficult. However, villagers generally understand the *Nijumurago* area as including ten communities in the *Higashiyama* District in *Ojiya* City, approximately ten communities located in the southwest the *Yamakoshi* District, and the three[4] northernmost communities in *Kawaguchi* Town (see Figure 1.1). Communities in the *Nijumurago* area are physically isolated from neighboring communities, having independent social integration and community symbols. But, the community described here is not necessarily reflected in the statistical data published by the local governments.

My research particularly observes two local governments, *Ojiya* City and former *Yamakoshi* Village (currently under *Nagaoka* City), and communities covered by these governments in the *Higashiyama* District (within *Ojiya* city) and south-western portion of

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[2] Prior to the Kobe earthquake, many engineers and ordinary people believed that, because of high engineering standards and advanced technologies for seismic proofing, buildings and infrastructures are seismic proof, and thus safe in any disastrous occurrences.

[3] At the time when I decided to target the *Nijumurago* Area for my dissertation research, the area was governed by *Ojiya* City, *Nagaoka* City, and *Kawaguchi* Town. *Kawaguchi* Town, however, merged with *Nagaoka* City in April 2010.

[4] The number of *Nijumurago* communities from *Kawaguchi* Town is difficult to define as two or three elderly persons thought there are two communities belonging to *Nijumurago*, while others say three, due to the communities' similarity in culture, social, and geographic conditions.

Yamakoshi District that falls within the *Nijumurago* area. There are several reasons for choosing this particular area. First, this area experienced extensive physical damage in the 2004 earthquake. With massive damage to land and buildings, villagers were forced to evacuate and were displaced to nearby flatlands, and then made a decision as to where to settle permanently (Sawada, 2006). Second, this area was already facing rapid demographic decline by aging[5] and emigration to cities, even prior to the earthquake. Third, the area is administered by several jurisdictions when it used to be only one. Among three administrations that existed at the time of the earthquake, two local governments that administer the major portion of the *Nijumurago* area, i.e. *Ojiya* City and *Yamakoshi* Village, decided to adopt distinctive resettlement programs in supporting relocation and repopulation. Fourth, four to five years after the earthquake was an appropriate time to learn about the resettlement experiences after disasters, for mainly two reasons: first, government officials and affected people still retain clear memories because it is recent, and second, post-resettlement outcomes of communities had just begun to take shape. All of these unique elements surrounding *Nijumurago* contributed to push me further in implementing a comparative study toward building a rich theoretical resettlement framework, which is often difficult in disaster studies. Furthermore, it is important to note that, although the area selected here is physically small, the resettlement dynamic observed here – disaster pushing communities to temporarily displace and then facing a decision to relocate or return for permanent settlement – is commonly observed in other areas after disasters, even for urban ones.

I add two more reasons for selecting a case in Japan. One, Japan is one of the countries in the forefront of disaster recovery studies with its experiences of facing recurring natural disasters. The country is also coping with rural community decline, and to make matters worse, it is presently one of the most aged in average as a country, worldwide (Population Division of DESA, UN, 2002). Two, my personal understanding of language, culture, and awareness of Japanese planning and disaster management provided great potential to more deeply explore this case than any others in different parts of the world.

[5] The definition of aging society in Japan is the society with a large proportion of elderly people who are 65 years and older. At this age, people begin to receive national pension and many retire from work.

In this dissertation real names are used, as much as possible, in describing areas and regions when discussions are at the city or regional level. However, pseudonyms are used for the community discussion to conceal the identity of communities as well as their members.

Figure 1.1 *Higashiyama* district, *Yamakoshi* district and *Nijumurago* area

Note: This map partially uses map of *Ojiya* (1:50,000) and map of *Nagaoka* (1:50,000) published by Geospatial Information authority of Japan

1.1.4 Disaster management in Japan: Policy, planning, and issues

Japan is one of the leading countries in managing disasters, owing to its experiences from recurring natural disasters. Disaster types include earthquakes, volcanic eruptions, floods, typhoons and snowstorms. Since the Great Kanto earthquake of 1923, with a death toll reaching more than 100 thousand in what is now the Tokyo metropolitan region, living with and preparing for the risks of natural disasters are the norm for communities and governments of the country. Disaster management policies have been institutionalized since 1961, after Japan experienced the *Isewan* Typhoon in 1959 that killed more than five thousand, with the adoption of the first ever disaster management law called the "Basic Act on Disaster Control Measures (*Saigai Taisaku kihon hou*)" (Mitsui, 2007; Nakabayashi, 2006). The basic disaster prevention plan (*Bosai Kihon Keikaku*) was ratified in 1961, a plan being most powerful in disaster management, which aims to coordinate national, regional, and local governments for managing disaster impacts at all levels. This plan, prepared by the national government, is structured to include strategies to cope with various disasters in different time consequences within a disaster cycle, while articulating roles and responsibilities of institutions, groups, and individuals in preparing for, responding to, and recovering from disasters (Research Committee for Disaster Management Policy, 2004). However, among the four stages of the disaster management cycle, namely, mitigation, preparedness, response and recovery, mitigation had long been the main focus of planners, while recovery requiring long-term commitment and resources has just begun to gain attention (Olshansky & Chang, 2009). Theories and guidelines related to recovery therefore are yet relatively thin; for instance, the 400-page basic disaster prevention plan, amended in 2008, has a mere 40 pages to explain the recovery process and planning.

Nevertheless, the 1995 Kobe earthquake that hit the metropolis of modern Japan, killing approximately 6,500, has driven policy makers and planners to discuss actions related to recovery more seriously. Because of the lack of organized knowledge about recovery, too many unexpected problems, sometimes with fatal results, emerged; for example, uniform provision of temporary shelters and housing resulted in suicides and "lonely deaths" of the elderly, people over 65 years old, for which the governments were criticized (Olshansky, 2006b). On the other hand, the experience advanced disaster management legislation such that parliament passed a law, "Act on Support for Reconstructing Livelihoods of Disaster Victims" *(Hisaisha seikatsu saiken shien hou*), aiming to support and protect livelihoods of disaster victims in the

recovery stage (Nakabayashi, 2006). This was a big step by the national and local governments to begin considering livelihoods of the affected population, rather than simply procuring houses and shelters, in the recovery stage.

The death toll from the *Chuetsu* earthquake that hit *Niigata* Prefecture in October 2004 was not as large as the one from the Kobe earthquake or significant typhoon disasters, as rural areas were the ones mainly hit. However, because buildings were seriously damaged and posed danger to inhabitants, people could not continue living on site and were forced to be displaced and subsequently choose between relocating and returning a few years later. In managing this process, the local governments put utmost effort into minimizing the psychological stresses by avoiding adverse experiences learned from the Kobe recovery effort. Governments in the *Chuetsu* region were particularly careful about restoring the social fabric of affected communities throughout the entire process of resettlement. Recovery efforts for the *Chuetsu* earthquake, therefore, can be explained as a first attempt by the policy makers and planners to reflect practical lessons gained from the Kobe experiences.

Meanwhile, governments, researchers and practitioners of Japan are seeking a way to disseminate their extensive experiences of recovery, as a part of international development and cooperation. Nevertheless, having Japanese experience generalized to be adopted in other countries has been a difficult task, as first, recoveries are contextually different as they are socially constructed (Mileti, 1999), and second, comparative studies on recoveries are complex to conduct.

1.2 Defining terms

There are few key terms that I use throughout this dissertation. Because research on post-recovery is extensive and is approached from different disciplines and perspectives, terms and vocabularies are used differently by different researchers. To avoid confusion, I define key terms that are used in this dissertation to share common understandings.

Resettle/Resettlement

Longman Dictionary (1987) provides two definitions for this word: one is "to go to live in a new country or area, or to help people do this," and the other is "to start using an area again as a place to live." Thus, it can mean either moving to a new place or reoccupying a previous

home location. Nevertheless, the term resettlement is often used in practice to describe out-migrating movement or an action moving away from the original site permanently, including both voluntary and involuntary ones, without a choice of remaining (Bronen et al., 2009; Oliver-Smith & Hansen, 1982). This word is often used in international aid communities, which largely describe involuntary resettlement caused by displacement of communities induced by infrastructure development, which became a large issue in the 1980s. Since then, the international development community usually describes resettlement permanent dislocation (see ADB, 1998; Guggenheim & Cernea, 1993; UNHCR, 2004). I, however, use the word resettlement to include both meanings of out-migrating and returning/remaining for permanent living. More narrowly, in this dissertation, I define resettlement as an act of either relocating or returning by choice after being forcibly displaced to a distant place temporarily after a natural disaster. It is the act of moving to a permanent home following temporary displacement.

Relocate (relocation) and return (repopulation)

Throughout the dissertation, I use two words, "relocate" and "return," to describe the resettlement decisions and actions of villagers. I distinguish these terms conceptually, with leaving the mountains for flatlands as "relocation," and coming back to original mountain communities as "return." I adopted this terminology based on the perception of *Nijumurago* community members, who explain "relocating" as the act of leaving the original community, mostly for flatlands (*hiraba*). They saw no further classifications beyond relocating, whether members moved into land prepared by the local government or into any land that members chose outside original communities. On the other hand, the word "returning" described the act of returning to the original communities in the mountains (*yama*), regardless of its specific lands and locations. Although there were some households that needed to reconstruct their homes adjacent to original land, no villagers saw it as "relocation." To this extent, villagers often explained returning as "*yama-ni-modoru*" (returning to mountains) and relocating as "*yama-wo-oriru*" (literally translated as climb-down mountains). These definitions of relocating and returning are followed in my research.

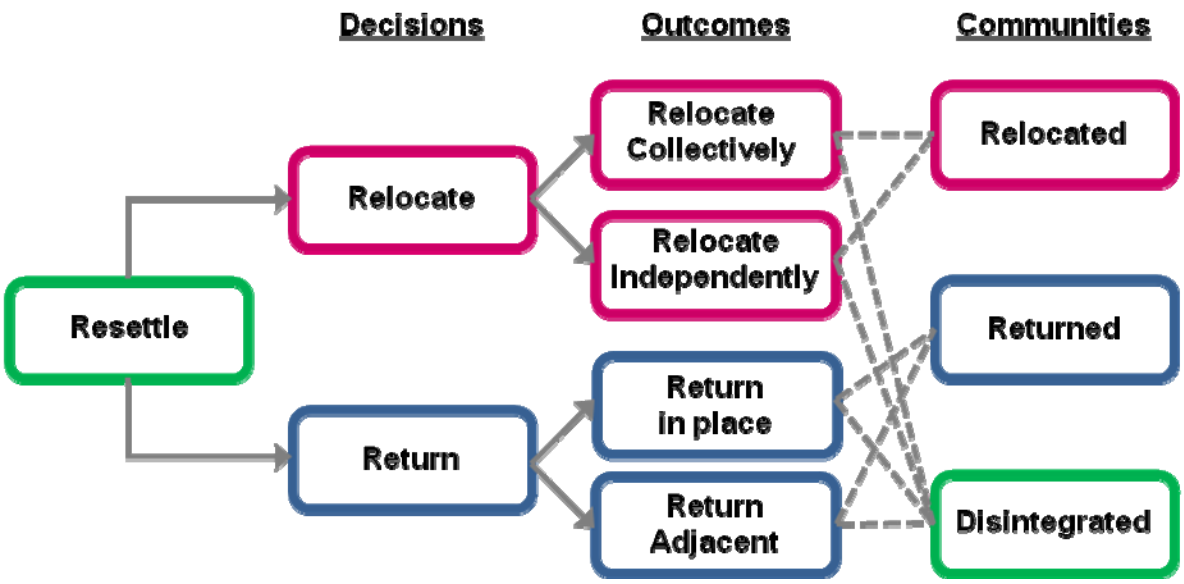
Patterns of resettlement outcomes

I use patterns of resettlement outcomes to describe four types of resettlement outcomes to choose when making resettlement decisions. Within relocation, there were two different choices; one was to "relocate collectively" into sites prepared by the government in flatlands near downtown, which was followed by the majority of relocated households. Villagers who relocated collectively either moved into affordable housing for disaster victims (*Hisaisha koei jyutaku*) or constructed their houses on lands which they purchased from the government. The other relocation choice was to "relocate independently" to any location of villagers' choice; some decided to relocate into flatlands close to downtown while others decided to move into other metropolitan cities of the country. Returning communities also had two different paths to select. The majority of returned households "returned in place" to the same land where they lived prior to the earthquake. Some households, however, could not return to the original land because of land damage and hazard potential, and so they "returned adjacent" to land as near as possible to the original site. In adjacent land, villagers constructed homes either on land of their choice or on land prepared by the government. In addition, some villagers moved into public housing prepared by the local government on adjacent land.

Community relocated, returned, and disintegrated

I distinguish between the choices of individuals and communities to explain resettlement decisions and outcomes. Individuals made decisions and resettled from two choices, i.e., to relocate or to return; however, communities, deciding collectively, had another choice, to disintegrate, in addition to relocate and return. I used the word "disintegrate" to describe a community that had members separately decide to resettle. Meanwhile, community relocated explains a community having majority of households relocate together, and community returned explains a community having majority of households returned collectively. The relationship of resettlement decisions, outcomes, and community types is explained in Figure 1.2.

Figure 1.2 Relationship of terms defined: resettlement decisions, outcomes, and type of communities



Temporary displacement

Temporary displacement is used for describing an action of dislocation from the original home to another housing site, triggered by unexpected external force, an earthquake in this case. The period of displacement is temporary and interim. In this research, the livelihoods of the displaced villagers were preserved as close as possible to the original ones as they were collectively displaced to assigned areas; however, this may not be the case in other temporary displacement sites. In this research, the period of temporary displacement lasted up to three years, with villagers dislocated to the flatlands from the mountains, living a life different from their original ones.

Successful resettlement

Many international development studies recommend avoiding resettlement – which, in this field, only occurs as planned forced relocations of communities to new sites – because past experiences have had only adverse effects rather than improvement (Aberle, 1993; ADB, 1998; Oliver-Smith, 2009). With resettlement having such a poor record, a definition of successful resettlement is yet to be universally developed in the literature, although resettlement studies have increased in the last decade, including efforts to develop quantitative measurements and

indicators (Oliver-Smith, 2009). Nevertheless, the resettlement observed in this research is distinctive in its context from the description generally used, as I interpret resettlement as an action of either relocating from or returning to the original site for permanent residence. Consequently, I define successful resettlement as being when livelihoods of displaced communities have improved and become more sustainable after permanent settlement. Drawing on the ideas of rural livelihood sustainability models (see DFID, 1999; Scoones, 1997), livelihoods are defined as improved and more sustainable if community assets are identified as having changed for the better. The community assets are measured by economic/financial capital, physical capital, human (demographic) capital, and social capital, all of which are defined in the livelihood sustainability model. Communities are more sustainable when capital is increased. Successful resettlement in this dissertation, therefore, is defined as enhanced sustainability, and measured by community assets.

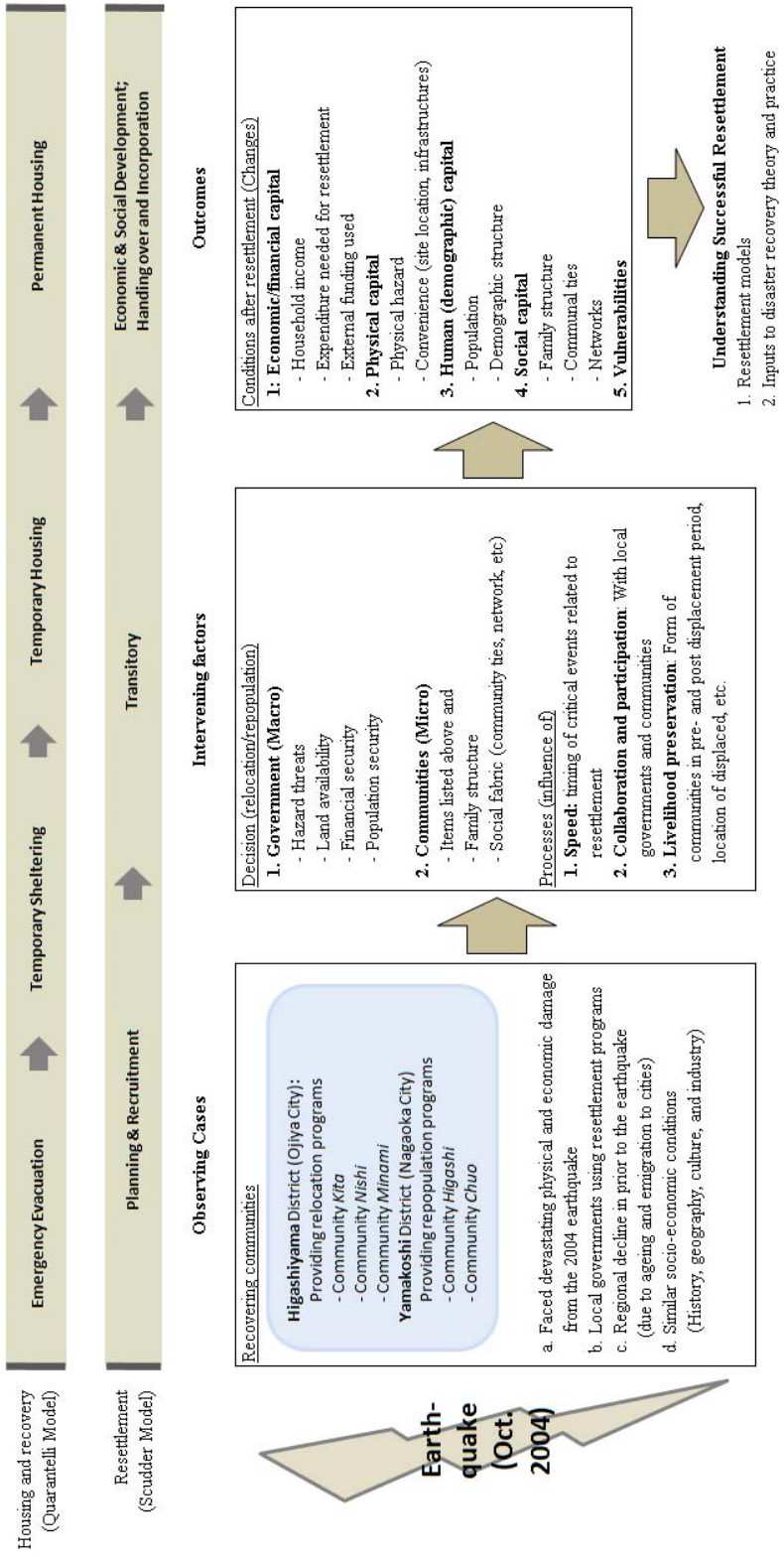
1.3 Research design

1.3.1 Conceptual framework

In this research, I explored resettlement dynamics from three conceptual dimensions. The first is on resettlement decisions, inquiring how both governments and communities affected by the earthquake made decisions to relocate or repopulate. Second, I closely examined the influence of planning processes on the community in making decisions. I observed two processes, one of which is led by the local governments and the other based in the communities. The third dimension concerns post-resettlement outcomes in communities, as the results of the decisions and processes taken during resettlement. Collectively, these dimensions cover the resettlement process from several perspectives (individual, community, government) and use the outcomes to assess resettlement success. In describing these three concepts, I used the theory of post-resettlement housing and phasing by relying on fundamental models of both Quarantelli (1982) and Scudder (Scudder, 1985).[6] Because both theories provide time phasing of housing recovery and resettlement, these two models together were used to observe and describe post-disaster resettlement in time sequences (see Figure 1.3 for conceptual framework).

[6] Quarantelli (1982) develops time phases of post-disaster housing recovery into four phases of: i) emergency sheltering, ii) temporary sheltering, iii) temporary housing, and iv) permanent housing, while Scudder (1985) develops resettlement phases of: i) planning and recruitment, ii) transitory, iii) economic and social development, and iv) handing over and incorporation.

Figure 1.3 Conceptual framework



1) Understanding resettlement decisions

Previous research suggests that governments and citizens have different perceptions on recovery (see Shaw & Goda, 2004; Tamura, Hayashi, Tatsuki, & Kimura, 2001). In understanding rationales for decision making, I therefore hypothesized that local governments approach resettlement decisions on macro perspectives with a major focus on regional sustainability, while communities and their members make decisions from micro perspectives with focus on livelihoods within communities. I initially approached understanding resettlement policy decisions by local governments by mapping out possible factors identified in my two pilot studies; hazard threats, land availability, financial security, and demographic security. I also sought to observe family structure and social fabric for communities, secondly, because I assumed that households in communities have reasons for their resettlement decisions related to livelihoods. Nevertheless, I did not limit myself from other possibilities in exploring resettlement reasons by the local governments and community members, by applying a grounded approach to this research.

2) Observing the influence of planning processes on communities

Reasons related to regional sustainability and livelihoods of communities perhaps share a large part in making resettlement decisions. Resettlement decisions, however, could also be affected by the qualities of the planning processes led by the government as well as within the communities. I therefore observed the influence of planning processes on communities, particularly by observing such elements as i) speed, ii) collaboration/participation, and iii) preservation of livelihoods.

First, in observing speed, I mainly relied on the timing of critical events related to resettlement. For critical events I mean: evacuation orders and lifting of orders, public resettlement plans/processes, resettlement site construction, and enforcement of relocating and returning. Responses of communities to these critical events were observed. Second, I explored how participation of the affected population is formed through interactions with governments as well as collaboration of the communities upon resettlement decisions. Participation is often suggested in resettlement literatures as a factor influencing the quality of planning processes as well as resettlement outcomes. Despite some recent research on the

relationship between participation and planning after disaster (for an example, see Chandrasekhar, 2010), examination of participation in post-disaster resettlement arrangements is still overlooked. In this research, consequently, I aimed to understand the style of decision making of governments and communities so that I could understand how communities and their members were more or less involved in any formal or informal activities related to decision making. Third, I looked into the preservation of community livelihoods during temporary displacements, to understand how social fabric and everyday routine were kept close to normality, and livelihood preservation influenced post-resettlement outcomes of communities. Literature suggests that preserving livelihoods close to normality is critical to reduce stresses of the affected, thereby leading to better recovery. I therefore sought to observe the level of normalcy during dislocation of the affected, in stages of: i) emergency evacuation, ii) temporary sheltering, and iii) temporary housing. I further explored pre-displacement livelihoods of communities, in order to better understand their livelihoods prior to displacement.

3) Learning post-resettlement outcomes

Outcomes after resettlement are important in understanding resettlement dynamics. In understanding the post-resettlement outcomes, I decided to observe changes in livelihood assets that are often used to assess sustainable rural livelihoods. To do so, I examined changes in: i) economic/financial, ii) physical, iii) human, and iv) social assets, because all of these are important for livelihood sustainability. I also observed the level of recovery satisfaction of the respondents that resulted from a change in livelihood, because psychological satisfaction of recovery is also an important way to measure actual recovery of communities (Oliver-Smith, 1991; Tamura et al., 2001). Each category included several components, for example: household income opportunities, expenditure needed for resettlement, and external funding were reviewed as economic/financial assets; physical capital included physical hazards and convenience, described by site location and infrastructure; human (demographic) capital included population and demographic structure; and social capital included family structure, communal ties, and networks. Understanding changes of such livelihood assets are important, because these often influence resiliency and sustainability of regions as well as communities.

By approaching post-disaster resettlement dynamics from three different components of decisions, processes, and post-resettlement outcomes, key factors that are critical to successful resettlement are provided.

1.3.2 Methodology

1) General

For several reasons, I employed a comparative case study method for this research. The first reason is that case study method is useful when "a 'how' or 'why' question is being asked about a contemporary set of events, over which the investigator has little or no control" (Yin, 2003, p.9). This method, secondly, allows the researcher to deal with a variety of evidence available in real-life context. Moreover, the case study method has a major strength in observing chronological sequence, as "case studies allow you to trace events over time" (Yin, 2003, p.125). I insisted on a comparative approach upon designing the research, because it enables cross-examination that contributes to generalization of findings. Generalizing disaster research is often difficult, as disaster is location specific and comparative studies are rare (Olshansky & Chang, 2009).

Describing the details of several field visits best explains my research methods. By describing them in chronological order, I include all information regarding research design, e.g. length of study, research methods used, data collection and analysis, and sample characteristics, as well as detailed reasons for how I came to use such methods and techniques.

2) Pilot studies

<u>First pilot study</u>

With maps of the *Nagaoka-Ojiya* City region that I had just purchased in Tokyo, I first arrived at *Nagaoka* station by a bullet train ride that took little less than two hours. It was a hot summer day at the end of July 2008, and I had a plan to be in the earthquake affected region for the next two weeks. At that time, I was only prepared with some information about the region and the *Chuetsu* earthquake. My aim in this first pilot study, therefore, was to familiarize myself with the region, understand earthquake impacts and recovery, and initiate developing contacts with key personnel. My first task then was to meet with government officials in

prefecture and city governments, non-governmental organizations (NGOs), and academics who were involved and knowledgeable in the recovery processes of the *Chuetsu* region. I described to each of them why I was interested in their region and how I planned to implement my dissertation research there in the near future. I then asked for some published documents by each agency, if available, so that I could further study about the region after I return to the U.S.

During this stay, I managed to collect documents related to resettlement policies, land use and recovery planning, as well as socio-economic conditions of the region. I was also fortunate in this trip to be able to sit in on a meeting one night, where different organizations involved in recovery activities gathered to introduce and share their activities and experiences. Participants mainly included non-governmental and non-profit organizations, and they all put efforts toward institutionalizing grassroots organizations to build a coordination body throughout the region for better recovery. Lastly, I had an opportunity to extensively drive through the affected region. With the help of maps I drove through the affected regions while some key personnel that accompanied me explained the conditions of damage and recovery four years after the earthquake. I traversed areas not only limited to *Higashiyama* and *Yamakoshi* Districts in the mountains, but also *Kawaguchi* Town in the south, relocation sites in the west of the *Nijumurago* area in *Ojiya* City, and *Oguni* Town located further west in *Nagaoka* City. Such extensive observation in the region made me understand the distinctive physical conditions that exist in the region, between flatlands and mountains, which historically have had a large influence on inhabitants' way of life. By the end of this fieldwork, I decided to focus on the *Nijumurago* area, because it provided me with a unique opportunity to study resettlements of districts comparatively. Life in the mountains during early summer, when I visited, seemed lively with its steep slopes and green pastoral landscape.

Second pilot study

Approximately three months later, in November 2008, I again visited the region for two weeks. The main event during this trip was to attend the fourth regional recovery meeting held on 29th and 30th of November, organized by Citizen's Network for *Chuetsu* Recovery (*Niigata-ken Chuetsu daishinsai fukko kikin*, so-called *Chuetsu* fukko network),[7] a newly organized non-governmental organization, that has been actively coordinating non-governmental

[7] See chapter 3 for details.

activities of the *Chuetsu* recovery. This meeting, at the end of the fourth year after the earthquake, aimed to gather many agencies and organizations of both governmental and non-governmental organizations currently active in recovery exercises, and further nurture ties among participants for better regional recovery. Some communities that returned to the mountains also participated in this meeting to explain their current recovery status. This event was a great opportunity for me to learn about various activities undertaken in the earthquake affected region, and also become acquainted with people unofficially –involved in the recovery actions. By the end of the second day, I met a large number of people, and began to understand the sense of companionship that the region developed in the past four years.

During this stay, I again conducted a windshield survey and neighborhood walks, but this time making more observations, around the *Nijumurago* area and new resettlement sites in *Ojiya* City. Although I had generally succeeded in familiarizing myself with the location and names of the *Nijumurago* communities in the first visit, I did not have enough knowledge to decide on particular communities for in-depth study. Therefore, for this second visit I extensively drove and walked around two districts of *Higashiyama* and *Yamakoshi*, to further deepen my understanding of conditions in the target areas. I noticed that *Nijumurago* area was much more desolate this time than the first visit, without green trees and with people staying indoors most of the time, as the winter season was about to begin. I exchanged greetings and began to have small conversations with some villagers that I had become familiar with as we often saw each other in such places as district offices in the city government. Meanwhile, I also made courtesy calls to prefecture and local governments to further explain my research plan to be implemented in the following year. I continued to ask for additional published information from them whenever I had opportunities, so that I could develop recovery chronologies of both *Higashiyama* and *Yamakoshi* districts, of which information cannot be sourced from outside the areas. Finally, I left *Nijumurago* area on December 5th, with five communities in mind for in-depth study, and a short list of people whom I could initiate contacting in the beginning of the main fieldwork.

Selection of five communities for in-depth study was based on the relationship between resettlement policies and the general patterns of community outcomes, whether relocated, repopulated, or disintegrated, after resettlement. Although I attempted to select two

communities from each pattern, I was able to find only one community that relocated. Consequently, I decided to observe a total of five communities instead of six (see Figure 1.4). The five selected communities are organized as follows (see Table 1.1):

Majority of community members **relocated** [Community relocated]

- Local government supporting ***relocation***: Community *Minami*

Majority of community members **returned** [Community returned]

- Local government supporting ***repopulation***: Community *Chuo*
- Local government supporting ***relocation***: Community *Kita*

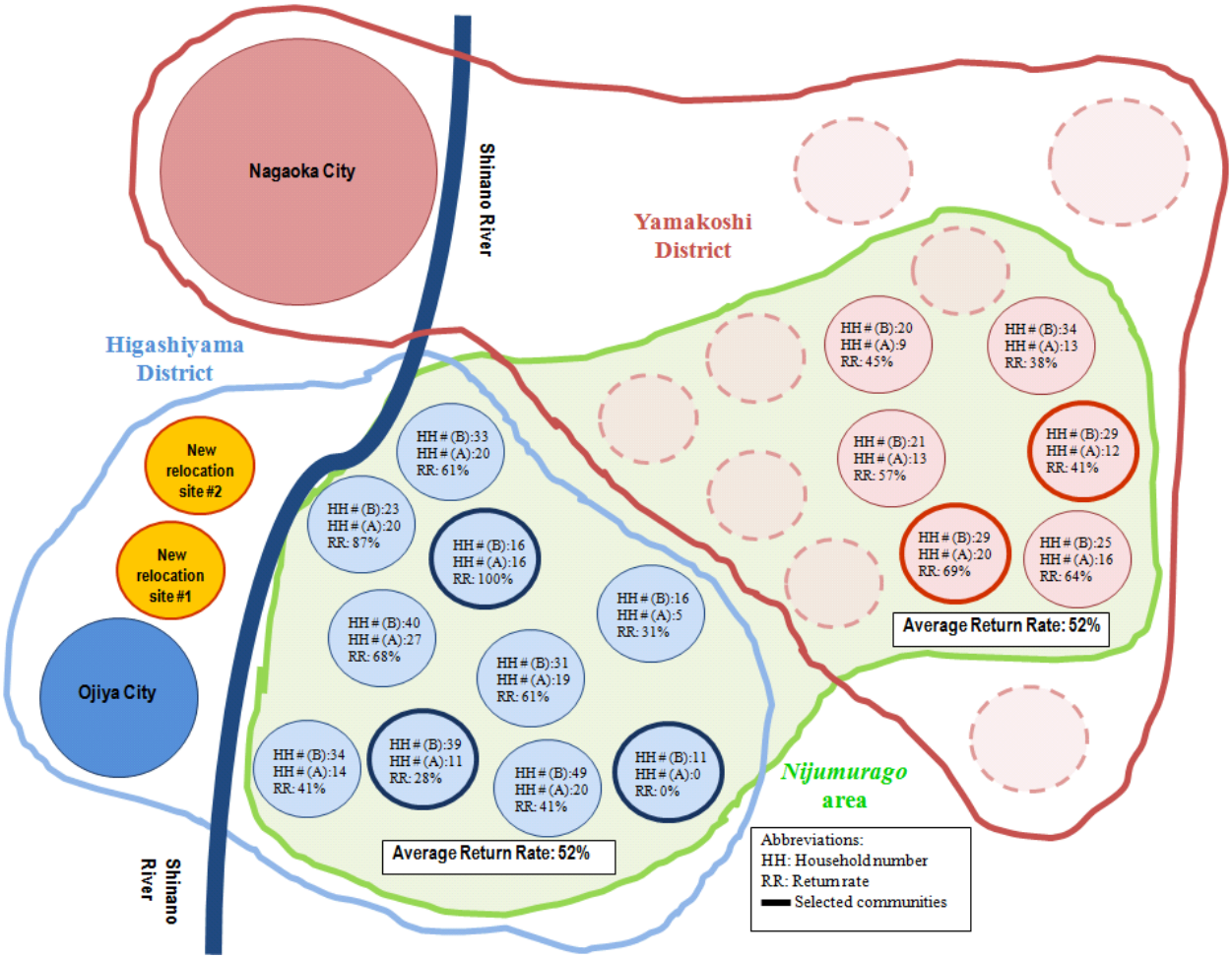
Majority of community members **disintegrated** [Community disintegrated]

- Local government supporting ***repopulation***: Community *Higashi*
- Local government supporting ***relocation***: Community *Nishi*

Table 1.1 Resettlement patterns and provided policies of five selected communities

Resettlement patterns	**Resettlement policy of local governments and communities**	
	Relocate (*Ojiya* City)	Return (*Yamakoshi* Village)
Relocated	*Minami*	N.A.
Returned	*Kita*	*Chuo*
Disintegrated	*Nishi*	*Higashi*

Figure 1.4 Conceptual map of communities selected for in-depth research



3) Main fieldwork

I departed for Japan in mid-May, 2009, after continuing distanced research for a few months back in the U.S. During this time, I developed detailed questionnaire guidelines targeting government officers, local community leaders, and community members, for use in the field (Appendix A: Questionnaire Guidelines). The length of stay in the *Nijumurago* area was the longest this time, having approximately four months until mid-September. In this phase, I planned to conduct semi-structured interviews for 56 personnel, implement participatory observation, and collect secondary information whenever necessary.

Upon arriving in *Nagaoka*, I reinitiated contacting local government officers that I was informed to get in touch with in both *Ojiya* and former *Yamakoshi* Village[8] for a smooth field entry. I relied largely on *Higashiyama* branch office for *Ojiya* City, and on *Yamakoshi* division office in *Nagaoka* City as the representative of former *Yamakoshi* Village. Because these branch offices are located in the *Nijumurago* area, not only were they more intimate with community members but they were also providing community-based services. I used snow-ball sampling techniques in interviewing people, and asked local government officers to introduce me to some community leaders of the communities that I chose. After succeeding to get in touch with community leaders, I then asked for introductions to some members of the community. Some leaders were friendly and supportive, providing me several telephone numbers of their members and also directly contacting members to personally introduce me to them. Other leaders were more protective and hesitated to introduce me to their members. On the part of community members, their reaction was either friendly or hesitant as well, when I asked for someone in their communities for an interview. I sensed that both community leaders and members that hesitated to even mention a name of a member were avoiding getting involved in any complication that may arise. Although many of them fully understood my research intention and my responsibility in keeping all information closed, many of them had experienced unpleasant events and emotions that emerged in the resettlement processes.

After knowing such complexities in snow-ball sampling, I also began to show up and join in many activities and events held in the two districts of *Nijumurago* area. I believed that villagers would get rid of their suspicions toward me, a researcher who suddenly appeared in their community, by making myself more visible in public. To put this strategy into action, I first joined a trekking event in *Higashiyama* District in May. In this event, for an example, I met a district leader and as we walked together, he shared some thoughts on his current life after the earthquake without me even asking him. Similarly, I met other villagers from communities in *Higashiyama* District, and even if I did not have direct interactions with them, I believed some of them were conscious of the presence of a newcomer in their midst. In other days, I attended community and district meetings held in the evening, if the community permitted my attendance. I usually sat there quietly, and listened to what people were saying. I learned many things

[8] The former *Yamakoshi* Village was already *Yamakoshi* division of *Nagaoka* City office when I started this dissertation research in 2008.

about the communities and districts even just by sitting there; for example, many villagers were so quiet during the public meetings and did not even express their ideas although many were talkative in person. I therefore concluded that *Nijumurago* villagers act differently in public and non-public environments. The reason is that the villagers seemed to be afraid to speak out in public, not because they are shy, but because they were afraid to raise issues by saying something different from their peers or leaders. Although I had no plan to conduct a focus group, such finding confirmed to me that relying solely on focus group techniques could be a large impediment to acquiring important information in such communities.

Because the time of main field work was summer and it was an active season for the communities, quite a few numbers of festivals and events were held during my stay. Bull fighting was one of them; and community festivals were another. Saying no to any invitation is considered impolite in Japanese culture; I therefore joined as many gatherings as possible – including women's gatherings in the communities and other occasional informal night time gatherings that naturally emerged. In these events that I attended, people often spoke about their difficulties during the earthquake, after the earthquake, or even satisfactions or dissatisfactions of their current status, in the form of memories, complaints, or jokes. My position in the communities also gradually changed as time elapsed; villagers began to accept me as a newcomer visiting their communities and began talking more about themselves and expressing emotions. Villagers also began to pay attention to the presence of a researcher in their communities –many began to make comments to me, in occasions where I met them in public spaces, that they could identify me running here and there in their districts by the purple car with *Hachioji*[9]number plate I drove. When I rented the car – which was a must have in visiting homes in rural mountains – I tried to book one that is least eye-catching and minimally functional, to avoid standing out in the traditional rural community. Nevertheless, because I did not pay too much attention to the color of the car upon signing the lease, I ended up by having a bright purple-colored car that stuck out in the mountains. There were other reasons why I felt villagers were accepting me more as the time elapsed. In the events of bull-fighting, I initially visited the site as a tourist, but gradually was provided with opportunities to volunteer in

[9] *Hachioji* is a city located in the west of Tokyo metropolitan region. I rented the car based on a monthly contract, because it is more affordable this way, but this type of contract was only available in car rental firms in Tokyo.

activities with other villagers in the events, such as help selling foods. Working together definitely made me feel more engaged with villagers and communities, and similar feelings were probably emerging with villagers as well.

Overall, my four months in the community was enriched with such activities enabling me to be exposed to their culture, customs, and people. Throughout the months in the main fieldwork, I kept myself busy by participating in these activities or going around the communities and city branch offices to share greetings, while finding someone that I could interview, besides the time I had scheduled appointments. Such less formalized conversation often gave me abundant information on the community and members, as well as the competitive attitude that emerged between city governments and among community members.

In collecting necessary data, I decided to employ semi-structured open-ended interviews because such an approach provides opportunities to understand the perspectives of interviewees by face-to-face interactions (Taylor & Bogdan, 1998). Unlike structured interviews, in-depth interviews avoid the risk of capturing an issue only from one-side, but allow the interviewees to explain their experiences and thoughts in their own words. Such techniques are also understood more suited for studies on disasters that often involve individuals, groups and communities under stresses (Ganapati, 2005; Oliver-Smith, 1996). In conducting interviews, I prepared three types of questionnaire guidelines for myself to follow in the field, for government officers, community leaders, and community members. I planned a total of 56 interviews, broken down as follows: eight (8) local government officials (four (4) from each local government), eight (8) district leaders (four (4) from each district), and 40 community members (eight (8) from each community) (see Table 1.2).

Table 1.2 Breakdown of open-ended interviews

	***Higashiyama* District** (*Ojiya* City)	***Yamakoshi* District** (*Yamakoshi* Village)
Government officials	4	4
District Leaders	4	4
Community Members	(8*3 communities) 24	(8*2 communities) 16
Sub-Total	32	24
Total	**56**	

I attempted to even out the numbers of interviewees between two genders, yet having equal proportion was difficult in some categories. For example, local government officers as well as community leaders had substantially larger proportion of males, rather than females, as males are traditionally the decision makers in Japanese society (Aikawa, 2006). Nevertheless, I put large effort in approaching women, especially for community interviews so that the male-female numbers would be balanced. In regard to the age range, the youngest respondents were in the late twenties, while the oldest respondents were in the early eighties. Having young respondents to interview was particularly difficult in this target area, because many of them had already left their village for high schools or colleges when they reached a certain age. Consequently, people in late teens and early twenties were difficult to find.

The questionnaires included four themes: first is interviewee's general background information, second is rationale for deciding between relocating and repopulating, third is influence of planning processes to a decision and action, and finally, fourth is current conditions of post-resettled communities five years after the event. I was aware that the interviews could be lengthy, depending on how interviewees respond to the questions that I posed, thus, if they wanted, I offered to shorten it or terminate the questioning at once and continue on another day. In most cases, interviews of community members were held in the houses of the interviewees. In other times, interviewees came to the branch office of the local governments to talk. The interview lasted approximately between one hour and a half to four hours. In most of the time, I did not talk much, and mainly concentrated on their stories as they had much to say. Some even could not hold back their tears while they were talking about living under harsh conditions, not only after the earthquake but also prior to the event. Some talked without stopping until even one o'clock in the morning, on the regrets, fear, trust, and hope that they faced in five years of the resettlement process. Everyone and all families had such drama in their lives; and some were still experiencing difficulties while I was in the field.

As for government officers, interviews were usually made through appointments and I thereby visited their offices for all interviews. They were often more careful about what they said, as they did not want to mention something that would cause misunderstandings. Many, after the earthquake, had already experienced the harsh-edge of media which had affected them either positively or negatively. Additionally, many government officials were trapped between

direct criticisms from the villagers and pressures from higher governments in the recovery process. Many of them no longer want to be involved in any possible troubles. Although setting up appointments and interviews was difficult in the beginning, it became easier with having more interviews done. Along with the number of interviews conducted, I also learned the best way to lead interviewees to talk naturally about the four themes that I laid out; for example, upon initiating interviews, I asked interviewees to explain their initial response at the time of the earthquake, followed by evacuation and displacement activities. Often, information that I desired just began to pour out from their lips in response to such questions, thus doing away with the need to proceed step by step on questions about family structures, age of members, and place of evacuation. I, however, confirmed or asked for more details whenever necessary.

I limited myself to doing two interviews a day because I wanted to type-up the memos that I took during the interviews right away while everything that was said was still fresh in my mind. I therefore usually went to libraries or someplace where I could sit down and do this between interviews or appointments. During the interview, I asked the interviewee if I could use a voice recorder, and recorded accordingly with their permission. With my former field interview experiences, I was aware that the interviews will not proceed as designed and I will need to improvise and just follow the flow of conversation, thereby making the work of transcribing all recordings rather difficult. I therefore did not totally rely on recordings, but intended to have them as backups – to review interviews that were especially impressive and also to transcribe statements that I want to quote in writing. Almost all people readily agreed to be recorded, but some refused because they would like to minimize the risk of their comments about resettlement leaking to people that would not welcome their comments. I inferred from this statement that people commenting negatively about recording had experienced difficulty in resettlement processes in their communities. Additionally, I had difficulty in finding people for interviews from communities that possibly had significant conflicts. To be connected with villagers in such communities, I had to familiarize myself first by visiting the community, attend community meetings, and get to know the members so they could trust me to have a conversation. In making memos, I first wrote in Japanese and then translated into English later whenever necessary, because I did not want to lose the context and texture of conversation, and I wanted to show my respect for them by writing down exactly the words used by the interviewees.

Besides making interview memos, I also took field notes. Sometimes it was mere description of what I saw and learned, but in other times, I wrote down my thoughts and emotions that I felt during my fieldwork.

4) Post-fieldwork

After returning to the U.S., I finalized my memos in Japanese for further analysis. I repeatedly read them to refresh my memories and coded interview data with the number that I assigned to each interviewee by their affiliations, i.e. government officials, community leaders, and community members, and categorized by four themes of: i) interviewees' background information, ii) resettlement choice, iii) planning processes, and iv) post-resettlement outcomes. Information of each interview was then simply categorized, using Excel spreadsheet, to see how they fit within each of the four themes. Whenever necessary, I went back to the recordings to reconfirm the wordings, and also transcribed the parts I wanted to quote in the dissertation in Japanese and then to English. I also reorganized and analyzed secondary data collected in the field. This secondary data included: i) newspaper articles, ii) government published documents, iii) statistical data, iv) journal articles by researchers, and iv) other information related to earthquake and recovery, including pictures, maps, flyers, and DVDs of TV programs featuring the *Chuetsu* earthquake. I studied this collection of information carefully, to further understand about the region and people, while trying to make sense of some interesting comments made by villagers. I further manipulated some statistical raw data, including population data, which was provided by the local governments.

1.3.3 Field relations

1) "Comma moments"

Although all of the fieldwork was relatively smooth overall, there were indeed issues and challenges that I faced. There were several stagnant "comma moments" that I totally was stuck in, seemingly with no way out in proceeding with the interviews.

<u>Euphemistic denials from *Ojiya* City</u>

The first one was between *Ojiya* City and me. I had a sense from the beginning that I was not welcome in *Ojiya* City. For the first two trips in July and November 2008, I could not

set up any appointments with officials in *Ojiya* City, although I wrote emails through websites and tried to contact officials through acquaintances. I wrote emails several times before my third visit – the main fieldwork – from the U.S., but I did not receive any reply to them. Even after my arrival in *Nagaoka*, I could not make first contact with any city officials in the main office. Eventually, I met people who either work closely with city officers or who went to school with them; I finally succeeded in making an appointment with several officers. It was already the middle of June – suggesting that I failed to get in contact with them for a month, even after the initiation of the main fieldwork.

I instantly understood why they were hesitant to talk with outsiders, particularly to those who are interested in resettlement processes. The first statement made by the government officer that I initially talked to was that city officials meant to support villagers by giving them a choice to relocate upon the provision of relocation programs, without me saying anything. I confirmed that, also by having conversations with other *Ojiya* City officials, the City and its officers suffered a lot from criticism for providing relocation programs. Media bashing was particularly severe on them, as the story of *Yamakoshi* Village became a national cause, with a slogan of "let's go back to *Yamakoshi*." Media often blamed the City for not supporting villagers to return, as suggested by the case of *Yamakoshi*. I therefore explained that my research was not intended to evaluate and criticize resettlement policies and local governments, rather, it was to understand the entire dynamics of resettlement and how resettlement programs play a role in them. After having officers understand my research objectives successfully, setting up appointments and interviews became easier later. Nevertheless, I learned that, from this process as well as some responses from the villagers, the topic on resettlement had been taboo for years. It seemed that I opened Pandora's Box, without knowing the complications rooted in people's emotions.

Rejection from communities

I also encountered rejections at some moments from several communities. For one community, I made a courtesy call one day aiming to visit its community leader, whom I met in the fourth regional recovery meeting back in November, 2008. The leader tried to be supportive and called several key members in the community to share greetings. Nevertheless, some showed abhorrence toward me, the newcomer, by rejecting to accept the business cards

that I tried to hand out to them, and further avoided eye contact throughout the conversation. After introducing the objectives of research, some further showed rejection of doing research in their community by commenting that my research is not suited for their community, and should be implemented in other places outside their district. Furthermore, another member left the room by saying that they could not be of help to me after having such kind of dialogues. I then decided to wrap up the meeting for the day by thanking them for their time and thought to make a fresh start with this community by another way. I, however, gradually familiarized myself with the workings in the community through attending community meetings and festivals, or other gatherings that were held in the community. Furthermore, the women of this community gradually became supportive and introduced me to some members, although they were not visibly active in the communities.

The case of another community was even harsher. I had an opportunity to talk with a leader in this community and asked initially for permission to work in his community. He welcomed and invited me to a community meeting (*chonaikai*) so that I could get acquainted with community members. I therefore prepared a one page research summary with my contact information and handed them out to members present, so that they would not be surprised in case I contact them. Everything went smoothly, and community members seemed to be supportive. Soon after, I began interviewing members who agreed to participate.

About a month later, the community leader called me up in a panic, asking about the purpose of my research again. According to him, the community meeting held the night before the phone call turned into chaos, with my research objectives being an issue. One of the members claimed that I was to criticize their community because I used a phrase "as 'opposed' to resettlement policy provided by the local government," to describe the resettlement decision of the community in the research summary I had provided. Although I had no intention to criticize or negatively evaluate the community, several members became annoyed with the wording and the meeting turned disorderly. Many community members then agreed to refuse to participate in the interview that I was planning. I figured my first required action was to correct misunderstandings of the purpose of my research, to allay their feelings of anger, depression and anxiety. I therefore wrote a letter describing that I have no intention to criticize or blame their actions, but to learn from them. I again explained the research purpose in plain

words, and brought a set of copies to the community leader and asked him to distribute them in the next community meeting. The letter was distributed and was accepted by the community members without much comment this time.

On the brighter side, I found women from this community were also supportive throughout this difficult time. I was particularly getting close to women members in this community at the time, because I had more opportunities to personally interact with some of them through individual activities, such as through vegetable planting. Some of them called me up immediately after the problem became apparent. They showed their support and provided encouragement by suggesting that they would stand against people in opposition if necessary. In the end, the opposition subsided as if nothing had happened and the interviews continued without problems. On a personal level, I usually do not accept that being female has anything to do with how others relate to me, but all of these experiences indicated to me that being a female researcher asking about their community had made males become annoyed and uncomfortable. It was perhaps particularly so, as communities in *Nijumurago* areas were notably conservative and traditional.

At this point, however, I can understand that all of these encounters had contributed to nurture better bonds with people in the research area. Toward the end of the fieldwork, I was asked for an interview by a local *Ojiya* newspaper, on my research and experience during my stay in the *Nijumurago* area. The newspaper reporter heard about my research and community encounters in the two districts from *Nijumurago* villagers. The article was published on September 5, 2009 (Appendix B). Many villagers whom I formally interviewed and who had read this article came up to me, while I was going around the communities, and gave me words of support for my research and commented that they are looking forward to reading findings of this research. I understand my responsibility to send them a summary in Japanese in near future.

2) Personal background and *Nijumurago* villagers

My background also benefited me in doing this field research. Many *Nijumurago* villagers developed a sense of fellowship with me after having conversations for two reasons. First, it was something to do with my hometown. *Tokushima* prefecture, where my hometown

is located, is renowned for severe aging, depopulation and mountainous geography. *Kamikatsu*-cho, a town of about 2,000 inhabitants has a share of elderly at more than 45%, yet is famous for a successful business operated by the aged (Zenkoku Kaso Chiiki Jiritsu Sokushin Renmei, 2006).[10] Often, in the conversation, villagers asked which part of Japan I was born and raised. I answered that I am from *Tokushima*, and because *Kamikatsu*-cho is renowned nationally representing *Tokushima* Prefecture, many instantly felt that I can empathize with them in their sufferings from mountain living and aging. Second, I often explained that I belong to a university in Illinois, in the U.S., whenever I introduce myself. Villagers often responded with a nod, suggesting that they know the university very well. I later found out that Southern Illinois University had a *Niigata* Campus in former *Chujo* town up until 2007, and that was the reason why many villagers mistakenly connected me with Southern Illinois. Although I had to correct them that my university is different from Southern Illinois University, it was a good trigger for further conversation.

Coming from a foreign institution had both advantages and disadvantages. I benefitted by my institution having no strong connection with any other institutions and organizations that related to recovery in Japan. During the four-and-a-half years after the earthquake, villagers had faced many difficulties and struggles, some of which emerged from politics of some recovery institutions. Consequently, some villagers that had opinions toward some agencies hold the same opinions toward individuals associated with such agencies. I was privileged to this extent, as foreign institutions in the U.S. seemed to have no connection with domestic institutions playing politics. Consequently, many interviewees had no biased view toward me, and did not fear to speak of their emotions and share thoughts on a taboo subject– on resettlement decisions. Many used such phrases as "for the sake of your research, I am saying…" or "I am telling you this only because you are an outsider…" Villagers seemed to be careful with what they say, because they were cautious not to be ostracized by the other village members or communities.

On the other side, there is also a disadvantage not belonging to a university in Japan. Because villagers did not have any clue about the universities in the U.S., I had difficulty making

[10] The average age of the members operating the business is mid-60s, whereas the oldest member is over ninety years old. The business venture sells more than 300 types of leaves in the mountains to restaurants in the metropolis. The elderly have good command of computers to manage demands and needs.

them trust me initially. Researchers from universities in Japan seemed to have an easier entry point, with names already known by them. Overall, however, my being an outsider and my independence made opportunities to encounter more valuable information.

3) Thoughts on post-disaster fieldwork

There are few more issues that I want to point out before closing this section. Disaster research, particularly the study of the recovery phase, is distinct from other research. Talking with people who had gone through difficulties from disaster impacts especially requires sensitivity, as many of them may still be in the midst of emotional and physical stresses. Furthermore, individuals could have terrible experiences in the recovery process, depending on the way they were treated by the government and community members. According to the statements of interviewees, some were grateful for the help of outsiders through the recovery efforts, and saw their talking to me as a way of paying it back. Some others, on the other hand, had seemed to face painful experiences with the governments and community members, and just did not want to be involved in any conversations related to post-earthquake issues. By experiencing such different responses, I learned that researching the affected population needs special care to avoid additional burdens on the disaster survivors.

Four-and-a-half years after the earthquake, which is the time when I conducted the main fieldwork, was an ideal time to do research on resettlement. The reason is that the majority of affected people had moved into their permanent residences one or two years before that time. The result is that the majority of them had already built their lives into new patterns, and their lives had gotten back close to normality. Having their life and emotions more settled made them feel that the earthquake tragedy was an event of the past, making them more likely to speak about the experience without much hesitance. Yet many people still had clear memories of these experiences and were able to recall the details. This timing was also the time when outsider visits had subsided. For the first three years, from the day of the earthquake until the time villagers moved into the permanent settlement, villagers were perpetually disturbed by outside visitors, including media reporters, government officials, and researchers. But as villagers began to move into their permanent residences, the number of visitors had reduced and almost came to an end in the third year when the last temporary housing site was closed. The number of researchers visiting the place also had a similar trend. Many villagers were therefore

curious about this research topic and a researcher coming into their area at this time. Furthermore, because many of them already were accustomed to researchers in the past few years, the majority showed much understanding to participate in my research. All of these experiences made me realize that the timing of post-disaster research could influence the quality of data due to disaster survivors' availability.

I also found that researchers who undertake fieldwork in disaster affected areas are in a very sensitive position. Researchers perform fieldwork activities and gather data to analyze them and finalize research, but often overlook to give feedback to the communities researched. Many interviewees therefore repeatedly commented that many researchers came to interview them, but they have heard nothing about their results and thus are curious about them. Some even criticized that researchers are taking advantage of villagers and using them for their own self interest. Although I explained that research results are used not solely for researchers' benefits but also for crafting long-term improvement plans, bringing direct positive impacts on communities is difficult, and for this reason, the discontent of community members was also understandable.

Fieldwork after disasters, therefore, has to be implemented carefully, by keeping in mind the impact of the research on communities, timing of implementation, and feedback to communities.

1.3.4 Research limitations

Because I am a native Japanese speaker, I did not encounter many problems to communicate with villagers in the target area. Together with my personal background as described above, I therefore believe community members had trusted me and had honest conversations with me whenever possible. I also listened to them carefully, and tried to understand all the words of the respondents by acquiring background knowledge on the events and actions that had occurred to them in the resettlement phase. I therefore believe that the information is properly collected, accurate, and is of high-quality. Use of triangulation, by adopting multiple methods and theoretical perspectives, has also contributed to the internal validity of my research. In particular, I used in-depth interviews, direct and indirect observations, and secondary data collections for methods. As for theories, I approached the issues of post-disaster resettlement with theories of resettlement, planning, and livelihoods.

Nevertheless, I also had limitations on data collection. The people in the area that I observed have a strong accent/dialect that is difficult for outsiders to understand. Although everyone spoke to me in standard Japanese whenever having face-to-face conversations, villagers began talking in thick accents when talking to their peers. Their conversations were not information that I planned to collect directly; however, I could have missed some important piece of information which could have provided further knowledge. Furthermore, my inability to speak their dialect continued to mark me as an obvious outsider, which could have affected the type of data I could collect. The Japanese culture of using facades (*honne to tatemae*) had particularly made it difficult for some interviewees holding public positions, e.g. local government officers and community leaders, to voice their real intention. This culture of using facades was especially tricky for collecting reliable data from the government officials, especially on problems that could have emerged among them during the stages of planning and implementation. Government officials had indeed provided accurate information on resettlement that is already published or not considered sensitive. Nevertheless, when it came to the question on conflicts or problems that arose, many said very little about their experience, emotions and thoughts. One of the reasons is perhaps because the interview was mostly held in the government building, where most of them responded to my interview as a public officer who represents the thoughts of local government. The other reason could have been the minimal time I spent with them – I did not have any better way to approach them but through visiting government offices. The quality of data gathered and the way it was gathered – being unable to collect data explaining the unofficial side of resettlement planning in the local governments – could have minimized the opportunity to understand the issues and constraints in local governments that are planning resettlement after disasters.

The time constraints were also apparent in the communities. Although I tried to spend as much time as possible with villagers while in the field, my main fieldwork could only last up to four months. I understood that I would have had better opportunities to change the minds of those who denied my requests for interview, if I had more time to spend in communities. Getting better acquainted cannot happen just in one meeting; it may take several meetings as in the case of some villagers who suddenly began talking about their experiences after having light interactions three times beforehand. Government officials and leaders, with whom I had initiated contacts a year earlier, had also mentioned that my enthusiasm for the research was

proved by me visiting the area several times before the main fieldwork started. All of these imply that longer time and repeated field visits could nurture better trust and relationships, which I could not adopt in trying to make conversation with all villagers.

When I designed this research, I selected five communities as cases to minimize threats to external validity. I believe I was able to identify some replication and distinctive resettlement patterns by closely examining resettlement of five cases, which had similar characteristics (e.g., geography, culture, and history) and earthquake impacts. Consequently, the research results that I summarized are valid to a certain extent in understanding resettlement after disasters. Nevertheless, some limitations also exist in this research for generalization; for example, because the resettlement outcomes are found highly relevant to the inherent conditions of the pre-disaster community environments, the context of resettlement may be place specific and distinctive in each. Furthermore, resettlement in this study was unique in a way that the majority of villagers were able to continue their jobs to make a living after the earthquake. Additionally, the site of relocation in this research was not located far away, in contrast to many project-induced resettlements, and people were able to commute between the former and new sites relatively easily. Such conditions perhaps might not apply to all resettlements requiring decisions, and therefore should be of concern. Nevertheless, resettlement after disasters often includes decision making between former and new sites that are within commuting distance, and I believe findings of this research are well applicable to many localities facing community resettlements after catastrophes.

1.4 Introduction to each chapter

Building on Chapter 1, this dissertation is followed by six more chapters. Chapter 2 reviews literature related to disaster management, resettlement and livelihoods, and planning, largely from international development perspectives. I first address how disaster management has improved in the past two decades, but long-term recovery studies and practices are yet underexplored. I further underscore that this issue of long-term resettlement after disaster is becoming more and more important globally. I then explain that resettlement studies have quite a long history, but have been largely limited to project-related resettlements, including international development projects or urban renewal projects. Furthermore, I explain that not much of the resettlement studies have been carried out from planning perspectives, but rather

from anthropological, sociological, and economic viewpoints. On the other hand, I suggest how planning processes, including time, speed, and participatory actions are key components in resettlement and post-disaster recoveries, yet these linkages to post-disaster resettlement are still underexplored. I address the needs of planning theories and practices integrated into post-disaster resettlement. Lastly, literatures on livelihood improvement from community development perspectives are reviewed. The way to better resettle – the affected communities having their livelihoods back to normal or with improvement – relies on the literatures of this area, but again highlights the need of linking them with studies of people recovering after major disasters.

Chapter 3 is the introductory chapter for the area of my research. In this chapter, I provide overall information on the *Chuetsu* region, the *Nijumurago* area, and the impact of the earthquake to these regions. In writing this chapter, I emphasize the history and segregated living conditions of rural communities in the *Nijumurago* area, which had been left behind in the modern urban development of Japan. Although Japan is often perceived as one of the most developed countries with modern technologies, I describe the struggles of the marginalized rural population, which are conceptually no different from many places in the so-called less-developed world. Then, after explaining the impact of the 2004 earthquake and immediate responses to it, I explain the threat to local sustainability that emerged as a result of this event. In doing so, I provide the decisions and rationales of two local governments of *Ojiya* City and *Yamakoshi* Village,[11] for their choices to support either relocation or repopulation, with possible resettlement programs nationally and regionally. After providing the displacement chronology of the two localities, I highlight the differences that began to emerge between the two districts of *Nijumurago* area, under these two different government jurisdictions.

As a first step to disentangle the dynamics of post-disaster resettlement, Chapter 4 focuses on explaining the resettlement decisions of the villagers that were in communities that relocated, returned, or disintegrated. I describe the geography, livelihoods and inter-communal relationships of five communities in the distinctive time periods of *ex-ante*, during and immediately after the earthquake. By framing descriptions in time sequences, I believe I was able to explain that the resettlement decisions of villagers were strongly tied to the

[11] Currently under *Nagaoka* City, *Yamakoshi* division.

pre-earthquake conditions of their communities. I explain that resettlement decisions were made by villagers primarily based on the likelihood of continuing their former livelihoods and their emotions toward their original neighborhood, and location and duration of displacement had further contributed to intensify villager's original emotions on preference to their communities. I also suggested that programs prepared by the local governments for resettlement purposes did not have much influence on individuals' decision making, for two possible reasons; one, decisions were largely about sustaining livelihoods in preferred lifestyles, and two, the way resettlement programs were designed and implemented.

In Chapter 5, I highlight the planning processes that were undertaken in the region and each locality. I explain how two different local governments had different approaches to planning and implementing community resettlement, one with speed and the other with deliberation, and how these differences affected the overall resettlement timelines of the two districts. I also explore the planning dynamics in each community and how they affected the decisions of the community members. In-depth observation of both local governments and communities highlighted several interesting issues. First, although there is a tendency to expect that the official planning processes led by the governments would play an important role in making community and individual decisions, the finding was that communities were more influenced by the internal dynamics of the community itself. Informal conversations and gatherings that emerged in the community were more powerful than official conversations that were led by the government officials or that took place in the public community meetings. Consequently, second, the inherent nature of community was the most critical influence on resettlement decisions, because communities were likely to stay together if they were traditionally collaborative, while communities made segregated decisions if it was originally disintegrated.

Chapters 4 and 5 unpack the rationales for deciding between relocating and returning, and how planning processes affected such decisions, after affected populations experienced temporary displacement. The next question, then, is about the outcomes of households, communities, and districts – how a particular resettlement choice had affected them. In responding to this question, chapter 6 explains post-resettlement conditions by focusing on changes of livelihood capital, through observing economic/financial, natural, human, and social

assets. By walking through the changes, I explain how choice of resettlement to relocate or to return has a strong influence on physical and social assets of communities, while economic/financial and demographic assets largely influence decisions whether or not to avail themselves of the resettlement programs. The impact of such changes on communities' sustainability, through emerging changes that affected resiliency and vulnerability, is also reviewed briefly. I was rather surprised to understand that returning to the original neighborhood was not always the best solution for the community from vulnerability and sustainability perspectives, if it is located in rural declining areas. Relocated populations, particularly women and the younger generation that have work to do in the new site, were enjoying the convenience and safety from fewer hazards in the new location, except for some facing financial difficulties. Nevertheless, the elderly were the most burdened in relocation, because they have become more isolated by losing their previous positions in the households and communities.

Chapter 7 integrates the findings of resettlement decisions, planning influence on decisions, and post-resettled outcomes of communities, for the conclusion of this dissertation. I first provide a summary of the findings in responding to four sub-questions I had mapped out in the beginning. I then come up with eight propositions which may explain widely transferable findings of post-disaster resettlement planning. Next, I summarize the theoretical contributions of this research to the prevailing literatures related to resettlement and post-disaster recovery. Lastly, in this chapter, I explain future research possibilities which I did not cover in this research.

CHAPTER 2. POST-DISASTER RESETTLEMENT, LIVELIHOOD RECOVERY, AND THE ROLE OF PLANNING

This chapter first reviews current disaster management practices in the international development arena. It intends to depict the current practice of disaster management, focusing on progress and issues that are emerging in response to various large, international disasters. The following section reviews literature related to long-term disaster recovery, resettlement, sustainable livelihoods, as well as planning, to show current theoretical discussions and missing links among these areas. The literature review further identifies gaps between the current practice and theory of disaster management.

2.1 Global practices in disaster management and recovery

With increasing impacts from natural disasters world-wide, the international aid community has been putting a large effort into managing disasters, because disasters set back development efforts. A significant proportion of this effort goes to mitigation—to minimize disaster impacts in the event of catastrophic disasters. Recovery efforts are also beginning to be focused to go hand in hand with development, as disasters provide opportunities toward a change for the better in the affected regions. Meanwhile, the international community also provides a substantial amount of relief activities, as a part of humanitarian assistance, to minimize the hardships of the affected populations immediately after a disaster. So far, these development and humanitarian activities are implemented in a segmented manner with regard to disasters, and yet have furthered studies for better implementation.

2.1.1 Managing disasters with development: Mitigation and recovery

Since the 1990s, recurring natural disasters and their devastating impacts across the world have prompted the international aid community to embed disaster management as one of the key themes in development. In the last two decades, the United Nations (UN) has put efforts on disaster mitigation, first with the International Decade for Natural Disaster Reduction (IDNDR) in the 1990s, and then, the International Strategy for Disaster Reduction (ISDR) for the 2000s. On a similar note, the World Bank, in collaboration with ISDR, initiated the Global Facility for Disaster Reduction and Recovery in 2006, to provide financial support to low-income countries at high-risk for natural disasters, through programs related to disaster risk mitigation and post-disaster funding (ISDR and the World Bank, 2006). The Asian Development Bank (ADB)

has also merged development effort with disaster management, as a "paradigm shift" of their work (Yodmani, 2001). Even the UN's millennium development goal, having no direct connection with disaster management, has strong indication of shared goals with managing disasters, in areas such as eradicating extreme poverty (goal 1), reducing child mortality (goal 4), and ensuring environmental sustainability (goal 7) (Wisner, 2003). These overall efforts of the international community suggest disaster management activities have begun to be merged with development practices, through mitigation and recovery efforts. Such efforts in mitigating impacts from natural disasters have so far been effective; according to the recorded figures: the number of deaths decreased by half from more than two million in the decade of the 1970s to less than one million in the decade between 1980 and 1990, with a 50% decrease rate (ISDR, 2004). These numbers are quite intriguing because the number of affected people from natural disasters has continued to grow throughout this period.

2.1.2 The other side of disaster management: Humanitarian disaster relief activities

Achieving a world-wide decrease in disaster-induced mortality rates, is not only stimulated by improved mitigation efforts by the international community, but also by the increased efficiencies of response and relief actions by national and local governments that faced recurring natural disasters post 1990s. For example, in the United States, both federal and local governments have significantly improved their capacities in emergency response during the years between 1989 and 1994, having suffered and learned from devastating urban disasters as Hurricane Hugo (1989), Loma Prieta earthquake (1989), Hurricane Andrew (1992), the Midwestern floods (1993), and the Northridge earthquake (1994) (Comerio, 1998). The 9/11 (2001) incident has further pushed the federal and local governments to be systematically prepared for emergency. The federal government had restructured the national response system after this event, which was proved to work fairly well during the sequence of devastating hurricanes that hit Florida in 2004 (Rubin, 2007).[12] Although the new system failed to effectively function in the wake of Hurricane Katrina (2005), the governments, including federal and local, have been challenged to improve their capacity through policy modification, resource

[12] Rubin (2007) suggests that the degree of devastation by the 2004 hurricanes this year was significant in the history of the United States. These hurricanes included Tropical Storm Bonnie, Hurricane Charlie, Hurricane Frances, Hurricane Ivan, and Hurricane Jeanne. Furthermore, emergency response by the state of Florida was assessed much improved in 2004 compared to Hurricane Andrew in 1992.

preparation, and system configuration.[13] As a result, efficiency of emergency response has increased over the years, which, in turn, contributed to minimize additional damage and losses that often occur in short-term post disaster periods.

Moreover, an increased flow of international funds into emergency relief in the 1990s (Duffield, 1994) has perhaps supported the delivery of more effective emergency response for disasters worldwide. The share of monetary allocation for emergency relief and response has increased, because relief actions are more likely to show their positive impacts to both aid providers and recipients in only a short period of time, rather than development activities which take longer (Duffield, 1994; Nederveen Pieterse, 1998). This trend seems to be also continuing in the recent decade, as the amount of estimated relief expenditure world-wide has continued to increase from US$ 10 billion to US$ 18 billion between 2000 and 2005 (Walker, Maxwell, & ebrary, 2009). Relief providers have also begun to aim at providing assistance that, at least, would ensure a minimum standard of living, to further secure the rights of the victims through difficult times immediately following disaster. To cite an example, the Sphere Project Handbook (The Sphere Project, 2004) contains a humanitarian charter and minimum standards in disaster response to serve as a guide for relief agencies and workers, so that the lives and rights of the affected could be protected (The Sphere Project, 2010).[14]

2.1.3 Emerging needs of long-term recovery and resettlement studies

A favorable outcome of disaster mitigation and emergency response does not necessarily constitute successful disaster management, however. Mitigation and emergency response have been the main focus in managing disasters, compared to minimal emphasis on long-term recovery. Consequently, *ad hoc* responses after disasters often develop further vulnerabilities, in contrast to the objectives of development efforts, through increasing physical hazards and reducing social resiliency of affected populations.

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[13] Rubin (2007) also explained that FEMA reviewed its system and resources after Katrina and put effort into strengthening the areas that needed to be enhanced. FEMA additionally completed an assessment on emergency plans that were required to be developed by state governments.

[14] The project was initiated in 1997 by groups of NGOs and the Red Cross, to support the population affected by calamities and conflicts. The first handbook, published in 2000, contained five key sectors (water supply and sanitation, nutrition, food aid, shelter and health services) with guidelines to follow. In 2004, another sector, food security, was added. Another revision is currently underway.

An increasing number of people are affected by natural disasters. ISDR (2004), based on disaster data published by Centre for Research on the Epidemiology of Disasters (CRED), suggests that those who lost their assets, i.e. homes, crops, animals, livelihoods, and health, as a result of disasters doubled by an average of 188 million people per annum between 1990 and 1999. It further escalated to 211 million people in the following decade, approximately five times more than those affected by conflicts (UNHCR, 2006). Although UNHCR suggests that it is difficult to distinguish between forced displacements from disasters and voluntary dislocation for seeking economic opportunities, but disaster is one of the important triggering events that make people and communities displace temporarily or permanently. Furthermore, although displaced populations are perceived to be found predominantly in developing nations, industrialized countries are not excepted; for example, four out of 10 countries that suffered deadly disasters in 2006 were from nations generally called industrialized (Hoyois, Below, Scheuren, & Guha-Sapir, 2007).

Rural disasters have been relatively overlooked in the literature. Urban areas have been the major focus for disaster management because such areas have more vulnerabilities and greater disaster impacts. Moreover, recent world-wide disasters in industrialized regions have attacked urban areas, with large casualty numbers and economic loss. Such experiences have developed an urgency to gain knowledge in reconstructing urban physical and social systems. In contrast, research on rural areas has been less vigorous. This is perhaps because individual disaster impacts in rural areas appear to be small, particularly when represented by the size of economic loss. Nevertheless, the number of disasters occurring in rural areas is as much or even more than the number of urban disasters. Some of the recent drastic world-wide disasters that affected mid-mountainous rural regions include: the Chi-Chi (Taiwan) earthquake (1999), Kashmir Earthquake (2005), Chuetsu (Japan) Earthquake (2007), and Sichuan Earthquake (2008) – all of which have affected a large number of people and rural communities.

Rural areas themselves are additionally becoming more and more vulnerable and difficult to sustain. There are several reasons for this. First, rural areas are losing population by urban emigration as represented by world-wide urbanization statistics. United Nations (1999) estimates show that 60% of the world's population is predicted to live in urban areas by 2030, increasing from 37% in 1975 to 47% in 2000. This means that rural areas are rapidly losing

population and will only have 40% of the total population world-wide in the near future. Second, those emigrating to urban areas are the ones who have opportunities for getting urban-jobs; those with fewer opportunities, particularly the elderly, are therefore left behind. These less resilient rural areas and communities are thus particularly vulnerable to disasters, because they would not have much strength to rebound from disasters. Consequently, rural areas, already vulnerable and declining, present an especially important area for focus of long-term recovery research.

2.2 Theoretical overview: elements constituting post-disaster resettlement

Although studies of post-disaster resettlement planning are limited, discussions on regenerating livelihoods of affected communities are available in various literatures. This section aims to put together these disjointed literatures that will contribute to organize and frame the available knowledge of post-disaster resettlement. In this section, four theoretical aspects of long-term disaster recovery, resettlement, sustainable livelihoods and planning in post-disaster are reviewed to serve as a backbone of this research.

2.2.1 Long-term recovery after disasters

Long-term recovery is a complex process that lasts for years. It does not have a universal definition, although it can be stated as a process of restoring all physical, social, and emotional aspects back to the normality that was instantly disrupted by a major disaster (Olshansky & Chang, 2009). Various stakeholders are often included in the recovering process – government, citizens as well as other relevant organizations – to set agendas toward restoring functions of the affected region. In this process, policy makers and planners are understood as principal actors to lead and coordinate recovery actions among them (Pyles, 2007). Although the important role of planning in recovery has came into attention only recently (Olshansky & Chang, 2009), the emphasis had long been on short-term relief, rather than long-term development (for example, see: Berke, Beatley, & Feagin, 1993; Berke & Beatley, 1997; Rubin, Saperstein, & Barbee, 1985). Together with the fact that recovery studies are complex with no uniform measurement and well-defined concepts (Quarantelli, 1999), theory building on long-term recovery is still on-going. Nevertheless, there are several key elements describing long-term recovery summarized here.

1) Varied explanations of long-term recovery

A classic explanation of recovery by Haas, Kates, and Bowden (1977) defines the aim of recovery as achieving "early return to normalcy, the reduction of future vulnerability, or to opportunities for improved efficiency, equity and amenity" (Haas et al., 1977 p. xxvi). Recovery could also mean communities getting back to the original state, with possible variation by scales of community and regions (Quarantelli, 1999). Some even define it as a window of opportunities to reduce vulnerabilities or issues that the affected regions will face for a long time (e.g. Anderson & Woodrow, 1989). Later research began to emphasize that recovery is a social process that encompasses dynamics of society and community, rather than only physical recovery (e.g. Berke, Kartez, & Wenger, 1993; Bolin, 1982; Mileti, 1999; Rubin & Popkin, 1991). More recent studies address the psychological well-being of the affected population, claiming that full recovery cannot be achieved without the mental satisfaction of the affected, even after their livelihoods returned to normal (e.g. Eadie et al., 2001; Hayashi, 2007; Tamura et al., 2001).

It is also noteworthy to state that meaning of recovery for governments and citizens is different. Tamura, Tatsuki, and Hayashi (2000) and Shaw and Goda (2004) refer to this point in the long-term recovery study of the Kobe earthquake, after which a large discrepancy existed between governments' and citizens' perceptions of recovery: the city government perceived its city as completely recovered ten years after the earthquake, while citizens perceived the city as only 80% recovered. Such a difference on perception of recovery emerges, because governments measure recovery by macro indicators (such as economic indicators and the level of rehabilitation on urban infrastructures), while citizens measure it by micro indicators at livelihood levels (such as psychological, micro-economy, and social network) (Tamura et al., 2001).

Meanwhile, study on recovery in the planning discipline has in recent years approached recovery from economic, physical and social aspects. This is perhaps because disasters disrupt elements that form cities, such as economic system, physical conditions (i.e., housing stocks, urban infrastructures, transportation networks), and social systems (i.e., livelihood of affected communities and individuals) (Olshansky & Chang, 2009). Recovery of physical and social conditions are often emphasized in planning research, through observing the conditions of

rehabilitated physical stocks and restored social functions that are embedded in everyday life (Campanella, 2006). Planning discusses recovery from both physical and social aspects, as physical recovery reestablishes physical places of everyday life, and recreating social networks – created through familial, social and other communal networks – rebuilds community resiliency. Because resiliency is expected to help reduce future disaster risk (Manyena, 2006; Pelling, 2003), the social aspects of recovery are becoming more important in urban planning. As explained here, recovery has a different explanation in different disciplines of research and practices, and thus is an underdefined concept.

2) Emerging disparities and inequalities

Long-term recovery also aggravates disparities and inequalities in communities. One of the main reasons for this is explained by the relationship between recovery processes and vulnerabilities. The idea generally suggests that the vulnerable populations are the hardest hit and suffer the most in recovering from disaster, as they have less power also in the recovery process. The definitions of being vulnerable however are varying and complex; in one way, it is explained by physical and economic aspects – the UK Department for International Development (DFID) (2005) describes that first, the poor are physically vulnerable because they tend to live in hazardous areas, for example, gullies or shorelines that are prone to disaster. Second, the poor are financially vulnerable as disasters destroy poor households' natural, physical, and social assets, which "bring their coping strategies to the breaking point, have long term effects on livelihoods and often tip the poorest into destitution" (DFID, 2005 p.2). Vulnerabilities are further explained as socially constructed, because the level of recovery is affected by one's accessibility to recovery processes, which makes marginalized populations left out. The female gender and socially marginalized are often represented as these populations. For example, first, Aikawa (2006) explains about the impact of the 1995 Kobe earthquake in Japan, that 15% more females were killed than males from the direct and indirect earthquake impacts, while 100 thousand more females were laid-off from jobs in the years following the earthquake. She additionally suggested that females were less involved in the decision making process for recovery in their prefecture; the official number of female participation in the assembly averaged 18%, while 28% of councils only had male officials. Similar dynamics functioned on the socially marginalized; Wisner, Blaikie, Cannon and Davis (2004) cite a student

who worked in Gujarat, India, where social strata exist, stating that, "good political connections the powerful castes have even managed to attract infrastructure and investment, while the poor and the marginalized are now left as 'abandoned hamlets' devoid of even basic facilities" (Wisner et al., 2004 citing Jigyasu, 2001 p. 301).

Recovery from disasters therefore creates a situation where underlying unequal power becomes even more apparent, based on pre-existing political, social, and economic environments surrounding everyday life (Bolin & Stanford, 1998a; Pyles, 2007; Wisner, Blaikie, Cannon, & Davis, 2004). In many cases, populations having more power in their communities would have access to the means of restoring life, to housing, infrastructure, and income, while less is provided to populations without social power. Access to recovery policies therefore reflects the social status of the affected, which makes it difficult to provide for the needs of disadvantaged populations (Bolin & Stanford, 1998b; Kamel & Loukaitou-Sideris, 2004). These disparities are particularly evident in housing assistance policies; for example, the case of housing assistance in the recovery of the 1994 Northridge earthquake showed that federal expenditure on housing recoveries has only reached middle and upper income homeowners, while lower-income populations did not benefit much from the assistance (Bolin & Stanford, 1998b; Kamel & Loukaitou-Sideris, 2004).

3) Time sequences and recovery

A strong association between development and time is one of the most salient features that make recovery planning unique. The earliest research that integrated the time concept into recovery theory was done by Haas et al. (1977) who described recovery in four distinctive phases of: i) emergency, ii) restoration, iii) replacement reconstruction, and iv) commemorative, betterment and developmental reconstruction periods. The first stage, the emergency period, covers the time when the incident occurred, and may last days or weeks, until the time when the emergency responses (e.g., search and rescue or provisions of emergency assistance) end. The second stage, the restoration period, is described as a period when most of the public infrastructure is being restored, and consequently economic and social activities are brought back to a quasi-normal state. Third, the replacement reconstruction period is defined as the time when the physical capital of the cities, such as housing and infrastructure, are back to the pre-disaster state or better. Lastly, the commemorative, betterment and developmental

reconstruction period is the period when communities mark the disaster as being a part of the past and look ahead to further prosper (Haas et al., 1977).

Other theorists have commented on the theory on recovery by Haas et al, suggesting that their model is overambitious by stating that, "the reconstruction process is ordered, knowable and predictable" (p. 262). Post-Haas et al. theorists suggest that recovery is more complex, that the four phases of recovery could overlap and simultaneously occur in political, economic, and social spheres. Nevertheless, the four-phase model of Haas et al. continues to be the base of theories on recovery processes and planning.

Criticality of time consequence in recovery planning is further addressed recently. Olshansky et al. suggests that one of the key areas on recovery research is the balance between speed and deliberation (Olshansky, 2005; Olshansky, Johnson, Horne, & Nee, 2008). These two are in conflicting relationship: that speed, on one hand, alleviates the hardships of affected victims with shorter displacement period, while deliberation, on the other hand, provides opportunities to better recover with careful thinking about livelihoods after recovery. On a similar note, a concept of "recovery as compression in time and space" (Olshansky, Hopkins, Chandrasekhar, & Iuchi, 2009, p. 2) is recently suggested, which also explains a strong relationship between time sequences and recovery. Olshansky et al. (2009) generally argue that recovery brings in all development that includes planning, construction, and social improvement, at a rate much condensed from normal development and in a focused space. Decision making and actions on development, exemplified as changes in urban physical stocks, institutional structure and social formation, therefore occur in an expedited process (Olshansky et al., 2009; Olshansky & Johnson, 2010).

The linkage between time and development has been addressed as an element that needs special attention in recovery study. Haas et al. touched on this aspect, and, since then, theorists have indicated that recovery needs to be explained in association with time. All of this suggests that the time component is one of the key elements in recovery research. Time dynamics on long-term recovery in detail, however, are still minimally explored.

2.2.2 Resettlement studies

1) The concept of resettlement

Although studies on post-disaster resettlement are very few, studies on resettlement are not. Displacement became a hot debate around the 1960s when urban renewal became an important goal for U.S. cities (Cernea, 1993b). As a result of hastened urbanization between the Great Depression era in the 1930s and post-World War II, cities began to face upgrading needs by the 1960s. Urban renewal projects of this time therefore involved massive construction and renewal of public infrastructures, which forced approximately a quarter of a million people to be displaced each year in the U.S., causing harsh resistance and opposition (Niebanck, Yessian, & University of Pennsylvania. Institute for Environmental Studies, 1968; Rohe & Mouw, 1991). Researchers then suggested that adverse effects of forced resettlement in urban areas are mainly identified within older and lower-income populations.

Similarly, in the 1980s, resettlement issues became a development concern in the international community. Guggenheim and Cernea (Guggenheim & Cernea, 1993) argued that large infrastructure projects promoted by international agencies needed resettlement studies, because development-induced resettlement often put affected people in far worse conditions than before being resettled. These development agencies further faced criticisms from other members of the international community on their development approach, which solely depended on the economic growth model, overlooking developing and preserving human and social capital. As a result, research began to study how to minimize the adverse effects that emerge in development-forced resettlement (Guggenheim & Cernea, 1993). Resettlement study initially started off by analyzing costs and benefits to understand the amount of compensation needed to resettle targeted populations successfully. However, resettlement studies gradually came to realize that a holistic approach, including economic, sociological and anthropological aspects, is necessary (Cernea, 1993a; Scudder, 1985). Development of a model for resettling displaced populations by Cernea (2000) further strengthened the importance of a holistic approach in studying resettlement. The model suggested that resettlement includes several elements: "(a) landlessness; (b)joblessness; (c) homelessness; (d) marginalization: (e) food insecurity; (f) loss of access to common property resources; (g) increased morbidity; and (h) community disarticulation" as risks that could lead to failure of resettlement (Cernea & McDowell, 2000, p.

1569; Cernea, 2003). Until then, monetary compensation was used in resettlements as the sole remedy, but Cernea's resettlement model (2000) argued against this approach. Resettlement became no longer about how much the resettlers were paid, but rather about how to improve the living conditions of affected populations after resettlement.

Lastly, but importantly, all the resettlement concepts discussed in urban renewal and development projects are mainly about "development-forced displacement and resettlement (DFDR) [that] are 'pushed' to move rather than 'pulled' or attracted by better possibilities elsewhere" (Oliver-Smith, 2009). Post-disaster resettlement is not limited to DFDR however; populations affected by disasters either decide to relocate or return voluntarily based on their preferences. Traditional "push" or "pull" dynamics is therefore not applicable in post-disaster resettlement.

2) Defining success in resettlement

Whereas the number of resettlement studies is substantial, the procedure and measures of successful resettlement are not yet clearly defined (L. J. Bartolome, 1993; Cernea, 2003). The reason may rest on the complexity of resettlement issues, requiring researchers to approach from different angles, including: economic efficiency (Cernea, 2003 referring to Kanbur, 2003), preserving community and social system (e.g. L. J. Bartolome, 1984; Viratkapan & Perera, 2006), good policy implementation (e.g. ADB, 1998; ADB, 2010; Badri, Asgary, Eftekhari, & Levy, 2006) and community politics (Rohe & Mouw, 1991). In spite of this complexity, however, a consensus exists to avoid failure and impoverishment of post-resettled communities. Consequently, factors that influence resettlement outcomes are widely discussed; for example, Cernea (2003) suggests the need of studying the following aspects: i) resettlement policy, ii) legislation, iii) pre-planning, iv) public participation, and v) adequate compensation; ADB (1998) lists: i) community participation, ii) compensation and funding, iii) socio-economic restoration; and Oliver-Smith (1996) expresses the importance of: i) participation, ii) good layout/ construction of resettlement site, iii) good location, iv) job creation, and v) non-dependency.

The time aspect of resettlement is also discussed, in a manner similar to that of long-term recovery. This time component adds further difficulty to measuring success of resettlement

outcomes. One of the classic and central models of resettlement is developed by Scudder (1985). He explains that there are four distinctive phases in new land settlement: i) *planning and recruitment*, ii) *transition*, iii) *economic and social development,* and iv) *handing over and incorporation*, all of which suggest different interpretations on success at different phases. According to him, the *planning and recruitment* stage is when planning for resettlement and infrastructure begins to be constructed while settlers are recruited. The *transition* stage begins when people initiate the process of physical displacement, and ends when people become less *risk-averse* (meaning taking jobs that dominate in the area). An attitude of risk taking will then emerge in the next *economic and social development stage*, with residents seeking more diverse economic and social functions. The last stage of *handing over and incorporation* comes in when the newly established social and economic functions are stabilized. Because these different stages contain different activities of community members, the notion of success is explained as changing over elapsed time. One of the few theorists who discussed post-disaster resettlement, Oliver-Smith (1991), poses this resettlement model of Scudder's as the central model, and then adds that success and failure can be loosely identified by socio-economic factors, physical factors, and socio-communal factors.

As Oliver-Smith (1991) argues, "the success of post-disaster reconstruction is much more than a matter of delivering and constructing houses and towns. It is as much a matter of how it is done as it is of what, or how much, is done" (p 20). Additionally, as previously noted, Cernea (2003), ADB (1998), and Oliver-Smith (1991) clarify, that "participation" is a crucial element contributing to an effective resettlement, and by successfully implementing participatory planning, communities are thought to be better recovered (e.g., Berke et al., 1993). We, however, are not well-informed about how participation or planning processes link with resettlement decisions and post-resettlement outcomes, especially over time. Furthermore, as resettlement studies had mainly focused on DFDR, it is noteworthy that the meaning of successful resettlement after disasters may differ between relocating and returning of communities.

2.2.3 Post-disaster housing and livelihoods

Resettlement dynamics after disasters are not explored holistically. Nevertheless, several elements that are crucial for community recovery after disasters – such as housing and

livelihood issues – have been discussed well. To understand these areas of discussions, this section first examines literature on post-disaster housing and policies, and then reviews discussions on sustainable livelihoods and their link to recovery.

1) Post-disaster housing and policies

Studies on post-disaster housing are perhaps one of the leading areas in the field of recovery studies. Because securing places to live after disasters is one of the primary needs (The Sphere Project, 2004), a fairly large amount of experiences and knowledge on post-disaster housing are available. Research on this area had begun to expand in the 1980s, when in-depth knowledge and constructive models of post-disaster housing were found lacking. Quarantelli (1982) had first suggested that sheltering and housing issues after natural disasters are treated as an emergency response behavior; therefore, no long-term systematic understanding had yet been developed. At that time the only available analysis on housing after disaster were those related to man-made disasters (e.g., wars, civil disturbances) and slowly evolving crises (e.g., famine and droughts) (Quarantelli, 1982). Quarantelli introduced a model consisting of four sequential stages of resettlement phases: i) emergency sheltering, ii) temporary sheltering, iii) temporary housing, and iv) permanent housing. In his definition, "emergency sheltering" is explained as a phase that occurs when disaster victims seek to evacuate for a very short period of time after a disaster, while "temporary sheltering" takes place during short or temporary stay involving victims' displacement from home. "Temporary housing" is a phase when longer-term livelihood recovery perspective begins to be included, with emerging needs to reestablish household routines. The place of residence could vary during this phase, whether in tents, apartments or mobile homes, if not permanent. Lastly, "permanent housing" is the time when victims return to their rebuilt homes or move into new permanent homes. Quarantelli suggests that transiting from temporary housing to permanent housing is the hardest process, as there are many victims who have kept living in makeshift homes for many years following disasters (Quarantelli, 1982).

Subsequent studies on post-disaster housing are largely found in the intersection of housing policies and community recovery in urban settings. Recurring urban disasters in the 1980s to recent years world-wide have perhaps encouraged further research in this area of interest. Even limiting to the U.S., housing studies advanced after notably devastating disasters

include: Coalinga earthquake, 1983; Whittier Narrows earthquake, 1987, Hurricane Hugo and Loma Prieta earthquake, 1989; Hurricane Andrew,1992; Midwest flooding, 1993; Northridge earthquake, 1994; and Hurricane Katrina, 2005 (For example, see: Bates, 2006; Bolin & Stanford, 1991; Comerio, 1997; Comerio, 1998; Green, Bates, & Smyth, 2007; Jie Ying Wu & Lindell, 2004; Kamel & Loukaitou-Sideris, 2004; Quarantelli, 1982; Zhang & Peacock, 2010). Some are even comparatively studied; for example, the Northridge earthquake is compared with disasters abroad; with the Mexico earthquake, 1985 (Inam, 1999); Kobe (Japan) earthquake, 1995 (Comerio, 1998); and Chi-chi (Taiwan) earthquake, 1999 (Jie Ying Wu & Lindell, 2004) to name some. In the process of recovering from these disasters, debates on measuring impacts of housing policies on communities and better use of such policies had begun to be addressed. As a result, some implications were found important; first, the post-disaster housing policies were found not always helpful to all, but only to certain segments of the population in middle and upper income groups. For example, Bolin et al. (1998b), by observing community recovery from Northridge earthquake, suggest that those most vulnerable – the ones having the least assets and choices needed in recovery – did not have the means and knowledge to reach assistance and to cope with the complicated procedures required by the government bureaucracy. Furthermore, Kamel & Loukaitou-Sideris (2004) suggest that, because housing policies mainly aim to support absolute loss of house, poorer populations that have no houses before disasters are not even asked what kind of housing assistance they require.

Secondly, post-disaster housing that is normally provided in the market is found to trigger aggravation of existing disparities and inequalities of the affected region. For example, Bolin et al. (1991) describe that, financially, marginalized populations are put into worse housing situations after disasters. It is because they face soaring costs of housing in the market in addition to their possible loss of assets and jobs. Hirayama (2000), from observing the recovery of Kobe, further suggests that post-disaster housing policies did not only widen economic disparities, but also promoted spatial agglomeration of the vulnerable population, leading to a wealthy – poor dichotomy. This is owed in large part to housing policies prepared by the local government; although the local government of Kobe prepared affordable housing for the financially vulnerable, they were dislocated, in groups, to resettlement sites that were constructed in an area far from their former locations and downtown. Such dislocation disrupted former livelihoods of communities, making it more difficult for the vulnerable to survive post-disaster

without their former social capital and access to public services that they originally had. These examples suggest that housing policies after disasters have particular impacts on vulnerable populations, and taking into account such aspect of policy is critical in promoting equity of affected areas through recovery.

Efficient sheltering and housing in the phase of emergency response is important to secure minimum living standards for survivors to alleviate continuing life threats (The Sphere Project, 2004). It is therefore natural to see governments focusing on this short-term issue; however, because activities in this stage emphasize humanitarian and relief operation rather than preserving livelihoods (S. Ellis & Barakat, 1996), problems often develop in post-recovery. For example, some lands provided for temporary shelters and housing are decided upon without much thought about geographic hazards, and later face high disaster risks by the combination of vulnerable building structures, hazardous lands and disrupted community social capital. FEMA often provides trailers for post-disaster temporary shelters; however, this kind of resource is such a benefit to those financially vulnerable that, as a result, it often turns into permanent housing (Bolin & Stanford, 1991). Also in developing nations, areas designated for temporary sheltering and housing often turn into permanent residences (Arnold, 2006). Furthermore, enforcing displacements without considering the long-term impacts can decompose the community fabric, leading to weakened community resiliency and undermining social and economic sustainability (Ingram, Franco, Rio, & Khazai, 2006).

Post-disaster housing is a crucial element that needs to be addressed after disasters, because a house is the primary asset of many households. Having a safe place to live is a first step toward livelihood recovery of the affected population. Comerio (1998), on a relatively macro-level, argues that housing is a key sector in rebooting the built environment, which successively influences economic and social recovery. In a more micro-spectrum, however, recovering from disasters is not only about individuals having shelter and housing; rather, it is about rebuilding the social fabric and financial stability on top of acquiring shelters and housing. Unless the everyday routine of living – working, schooling, and participating in neighborhood activities to fulfill household and community level activities – is restored, communities cannot be considered to be recovered. To this extent, post-disaster housing is only a partial component contributing to livelihood recovery of communities.

2) Livelihoods in disaster recovery

In a similar fashion to housing recovery, phasing of livelihood reconstruction is also suggested to have four stages. Kimura et al. (1999), upon understanding the post-disaster reconstruction processes of individuals, based his research on time phases suggested in ethnographic studies by Aono et al. (1998) and Tanaka et al. (1999) by observing the recovery of Kobe from the 1995 earthquake. These studies suggested that there were three distinguishable phases during which victims made actions related to housing; between 0 to 10 hours, 10 to 100 hours (3-7 days), and 100 to 1000 hours (up to two months). These phases were named after the contexts of which members acted in the recovery process: "disorientation" (*shikken touki*), representing the time when everyone in the disaster stricken area is in a state of disorder and confusion, "society formation of disaster stricken areas" (*hisaichi shakai no keisei ki*), representing the time of restructuring society of the affected regions, and "society stabilization of disaster stricken areas" (*hisaichi shakai no antei ki*), representing the time of stabilizing livelihoods after disasters (Tanaka et al., 1999). After these three phases – two months in calendar time – have passed, people and the community begin to return to a normal state.

Kimura et al. (1999) then reconfigured these phasing into four: a phase of disorientation (for time between 0 to 10 hours), a phase of acceptance of new reality (for time between 10 to 100 hours), a phase of disaster utopia (for time between 100 to 1,000 hours), and a phase of reentry to everyday life (for time between 1,000 to 100,000 hours). He further suggested that displacement patterns of activities by the victims can be explained linearly. First, the majority of affected people initially evacuates to evacuation centers in the disorientation phase, then move into houses of relatives in the phase of acceptance of new reality. In the third phase, disaster utopia, victims move into rented homes, using private welfare programs provided by their employers or government provided welfare programs, such as temporary shelters and housing. Lastly, in the phase of reentry to everyday life, people no longer defined themselves as disaster victims, as the outlook of housing and financial issues are mostly cleared at this stage (Kimura et al., 1999). The significance of this model was further supported by additional research following the *Chuetsu* earthquake in 2004, using similar methods and procedures, which underscore the validity of the four phases and actions of recovery processes after disaster (Kimura, 2007).

Experimentally, preserving pre-disaster livelihoods during the recovery process is understood as a strategy to reduce stresses that often emerge in recovery. The Kobe earthquake, in particular, provided examples of adverse impact on vulnerable populations because of disrupted pre-disaster livelihoods. For example, the elderly without financial power were most negatively affected; many had no choice but to displace to the temporary housing provided by the local government without having their voices heard on their preferences in sustaining their former livelihoods. As a result, many elderly were isolated from social ties and community networks, and several cases of lonely death (*kodokushi*) occurred, which could possibly have been avoided by sustaining pre-disaster livelihoods (Olshansky, 2006b). To this extent, preserving pre-disaster livelihoods after disasters was understood as a key factor for successful recovery. Examining livelihood issues of the displaced alongside the issues of temporary housing and shelters, therefore, is strongly urged since then (for example, see Olshansky, 2006a).

Nevertheless, the interface between livelihoods and recovery is yet minimally studied despite its increasing need in practice and research. One of the reasons for this is the complexity of defining livelihoods. The discussion becomes further complicated when sustainability enters the livelihood debate, although theories on post-disaster recovery traditionally aim for reestablishing sustainable livelihoods of communities. For example, Haas et al. (1977) discusses the reduction of future vulnerabilities and improvement of social efficiency, equity and amenity; Anderson et al. (1989) debate vulnerability reduction and capacity enhancement of communities; Berke et al. (1993) aim for community well-being through local capacity building and physical improvement; and, more recently, Campanella (2006) argues for increased resilience of cities as the goal of recovery. All of these, throughout the decades, have unchangeably emphasized the need of achieving sustainable livelihoods after major disasters.

Meanwhile, attempts to assess community sustainability had been explored in international rural development, aside from post-disaster recovery discussion. A framework for sustainable development was created in order to identify efficient policy intervention for long-term poverty reduction and environmental preservation in impoverished communities. In this arena, sustainable livelihood is defined as that which "comprises of the capabilities, assets and activities required for a means of living" and is sustainable if it "can cope with and recover

from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation" (Chambers & Conway, 1992, p. 6). The livelihoods are also explained as formed with "the assets (natural, physical, human, financial and social capital), the activities, and the access to these (mediated by institutions and social relations) that together determine the living gained by the individual or household" (F. Ellis, 2000, p. 10). In an effort to frame community development from a sustainable livelihood perspective, DFID initiated discussion on the sustainable livelihoods approach in the 1980s and consolidated it in the 1990s for general use (Neely, Sutherland, & Johnson, 2004). This approach provides a framework to measure and understand livelihoods of communities, by describing the basic elements of sustainable livelihoods. The model provided by Scoones (1997) and Carney (1998) serves as the base framework, later modified by Ellis (2001). They suggest that five factors of: i) livelihood platform, ii) accessibility to the platform, iii) macro-surrounding environments, iv) livelihood strategies, and v) outcomes of sustainable livelihoods frame sustainable livelihoods. First, community assets, represented by natural, physical, human, financial, and social capital are selected to explain livelihood platforms. The second factor in the framework, accessibility to the platform, then, is described by means of institutional formation, and organizational associations influence accessibility to these assets. The third factor, sustainability of a community, largely depends on the macro environment in which it is located. A community, however, develops coping strategies as a fourth element, reflecting its setting explained by i), ii), and iii). Lastly, these four factors lead to the outcomes of sustainable livelihoods (Allison & Ellis, 2001; Scoones, 1997).

As suggested in this section, recent research has explained the critical role of livelihood in both recovery processes and post-recovery, to minimize stresses of the affected and adverse impacts of the most vulnerable. Nevertheless, although the sustainable livelihood concept and the framework for analysis are widely used in international development, the way to preserve and enhance livelihoods within a recovery framework is under-discussed. Often, the goal of livelihood restoration has been as assumed to be addressed by the re-housing of affected populations from temporary displacement to permanent settlement, but neglecting to include sufficient consideration of the social and financial aspects that influence livelihoods of individuals and communities.

2.2.4 Planning in recovery

Until recently, planners dealing with disasters largely focused on the mitigation phases among the four-stage cycle of disaster management, defined as mitigation, preparedness, response, and recovery (Olshansky & Chang, 2009). Mitigation effort was often suggested through the planning tools of "(1) regulatory measures (e.g., building codes, zoning, development moratorium)… (2) incentive measures (e.g., development density bonus, capital improvement program, property acquisition) … and (3) informational measures (e.g., rebuilding workshops, reconstruction plans, dissemination programs on availability of disaster assistance)" (Berke et al., 1993), or through hazard mitigation plans, which holistically integrate efforts and strategies toward sustainable communities (for example, see Burby, 1998; Burby, 1999; Eadie et al., 2001; Mileti, 1999).

The critical nature of planning in the recovery phase has only begun to be accepted recently. The importance of planning came into focus because planning, which is presumed to be guiding long-term recovery, could apply appropriate processes to help guide reconstruction of physical conditions, social equity and the economy of the affected area. Several underlying principles of urban planning make this discipline well-suited to contribute to better recovery. Revisiting the planning theories in traditional planning literature, planning is first explained as "the guidance of future action" (Forester, 1999) and it functions to develop consensus on its goals through communication (Innes, 1996; Innes & Booher, 1999). Second, planning has a coordinating function of various stakeholders in the process – including governments, citizens, emerging organizations, and financial resources – to decide on the best possible paths (Olshansky, 2006a). Without such coordination and guidance, disasters could aggravate existing social disparities, inequalities, and vulnerabilities (Bolin & Stanford, 1998a; Wisner et al., 2004). Third, planning can advocate for social justice in its process to help achieve democracy and equity for all (Davidoff, 1965; Krumholz & Forester, 1990). On a different tone, fourth, planning is expected to take a facilitative role exercised by various levels of government (Nederveen Pieterse, 2001) and guides societal development (Webster & Lai, 2003). To this extent, governments, theoretically, use policies and programs as community interventions for a more egalitarian and efficient development. Planning functions, therefore, could lead and guide recovery, coordinate stakeholders to reduce adverse impacts of disasters and advocate continuous betterment through utilizing regulatory and incentive tools and democratic processes, such as

equal participation. Existing research, however, has not well examined the interface of planning and recovery dynamics.

As aforementioned, one of the significant areas of recovery planning is the relationships between planning processes and speed. Olshansky et al. (2009) states, "The central issue in post-disaster recovery is the tension between speed and deliberation: between rebuilding as quickly as possible and considering how to improve on what existed before the disaster…the problem is that speed and quality often conflict" (p. 207). Speed, on one hand, is required because it alleviates the hardships of affected victims. It, however, would not allow sufficient time to consider carefully how to avoid possible long-term negative consequences that the affected areas would face. Temporary housing that functions to rebuild community livelihoods is a good example of this conflict. These are usually built with an emphasis on the immediate needs of victims, and assessments of vulnerabilities on land and building construction are largely not considered. However, past experiences show that these housing structures often turn out to be permanent, which then contributes to further vulnerabilities with their substandard materials and locations (Arnold, 2006). Such examples suggest that slowing down to plan is not always a bad solution, contrary to arguments of earlier theorists (e.g. Haas et al., 1977) for successful recovery (Olshansky & Chang, 2009).

Participatory planning is another area that could significantly contribute to coordination and advocacy in recovery processes. This is because the participatory process is a way to develop a means to the powerless – including politically and economically excluded populations – in the decision making process (Arnstein, 1969). It may also bring an opportunity to change by bringing in different values, concerns, and interests (Forester, 1996; Forester, 1999; Friedmann, 1989). Past disaster experiences have particularly proved that the traditional means of reducing disaster impacts through enforcing planning regulations and programs (e.g., building codes and land use control) and advanced technologies (e.g., quake resistance structures), have limitations in securing a sustainable society (Iuchi & Esnard, 2008). In this context, participation in recovery planning expands expectations beyond those of the traditional planning approach. Nevertheless, in practicing planning, participation is often affected by political dynamics within existing institutional and societal structure of powers, often making the call for equal participation largely rhetoric (Cooke & Kothari, 2001; Craig & Porter, 1997). A recent

study by Chandrasekhar (2010), observing participation in recovery planning, suggests that the form of participation varies "ranging from transformative to marginalized non-participation" (p. ii). She further suggests that these different forms of "participation and non-participation are complex functions of both stakeholder presence and impact" (p.186), which "occur through complex mix of stakeholder power, legitimacy, trust, and urgency for action" (p.188). These findings encourage further observation on the interface between participatory planning and recovery.

Lastly, as stated earlier, studies in post-disaster planning in rural settings are largely lacking. Most of the recovery theories that have been developed throughout the past several decades emerged from observing recoveries in urban areas.

On a last note, theorists who have observed recoveries in urban areas throughout the past several decades generally argue that communities recover regardless (for example, see Campanella, 2006; Haas et al., 1977; Rubin et al., 1985; Vale & Campanella, 2005). Recovery experiences in urban areas, therefore, show that cities always rebuild. This, however, may not always be the case for smaller communities, especially those undergoing economic decline; they have more flexibility to relocate or even dissolve due to their size and infrastructure investment, depending on the scale of the disaster as well as physical, economic, and social conditions. Consequently, rural recovery is also an important area to observe.

2.3 Conclusion: addressing research gaps

This chapter mainly contained two sections to map out important discussions around post-disaster resettlement and planning. In the first section, international practices of disaster management and recovery are summarized. It suggested that efforts in managing disasters since the 1980s have contributed to reduce the total number of casualties world-wide; however, there is a need further efforts to explore recovery. Such efforts are crucial for preparing better policies and planning for the disaster-affected population, whose number continues to increase. Disaster-induced resettlement is one of the areas that is increasing with importance, as many disaster affected populations are required to consider displacement when their livelihoods are disrupted by natural disasters.

The next section reviewed literature that discusses resettlement theories and other disciplines that focus on livelihoods of post-disaster resettlement. Although studies by each discipline on post-disaster resettlement are not new, not much of holistic study that addresses resettlement is available. To this extent, four areas of: i) long-term recovery after disasters, ii) resettlement studies, iii) post-disaster housing and livelihoods, and iv) planning in recovery, are reviewed. Literatures on long-term recovery after disasters pointed out that there is no crystallized definition of it, as the definition of recovery varies by level and scale of society, as well as according to the different disciplines of the studies. The discussion of long-term recovery also pointed out that disparities and inequalities in communities and societies are likely to occur. They also suggested that time sequence plays a significant role in making studies on long-term recovery distinctive from other planning studies.

Secondly, literatures on resettlement studies are primarily about forced relocation, which is about "pushed" dynamics rather than "pulled" (the notion developed by Oliver-Smith (2009) as described earlier). That is, post-disaster housing literature recognizes that households are displaced coercively from the original neighborhood with the disaster and forced to make a decision to move permanently, to return to the original neighborhood, to relocate near the original site, or anywhere else, within the context of public. Nevertheless, resettlement after disaster is not only about the move of being "pushed," but is an action settling into a permanent location and includes both dynamics of "push" and "pull" under time constraints. In other words, affected populations are making two-way decisions to relocate or return under time pressure. This suggests that the notion of resettlement in post-disaster is different from traditional displacement or dislocation. The literature shows that defining successful resettlement is a difficult task, with no consensus definition. Planning processes and participatory processes, however, appear in the literature for various types of resettlement, suggesting their significance to post-disaster resettlement dynamics. Additionally, revisiting the meaning of successful recovery is essential, as former resettlement studies have only focused on displacement, but not about returning.

Each review on post-disaster housing and sustainable livelihoods approach explained their crucial roles as components to unpack livelihood aspect of post-disaster resettlement dynamics. Housing is one of the most important elements that need to be addressed after

disasters, as reconstructing a place to live is the first step in livelihood recovery. Literatures further suggest that exercising housing policies need special care in their impact to vulnerable populations, as policies could either neglect them or function to widen disparities between the wealthy and the poor. Meanwhile, restoring livelihoods in a sustainable way is also experimentally described as an essential aspect in achieving better post-disaster resettlement of communities. However, restoring livelihoods after disasters is often substituted by housing discussions, which overlook the financial, social, and human aspects of livelihoods. Because there are several models available for assessing sustainable livelihood, such as the sustainable livelihood approach used in the international development community, merging such a concept with post-disaster resettlement will enable both livelihood and housing issues to be viewed in the same perspective.

Lastly, the literature on recovery planning suggested three issues. First, one of the main areas of planning research in recovery is about the tension between deliberate planning and speed. There is not yet an answer that supports either speed or deliberation; however, the trade-off between these two continues to be an important area of exploration. The literature also suggests that participation is an important area in which planning could significantly contribute in resettlement after disasters. Nevertheless, not many have explored the planning influence on communities in developing participation in resettlement or vice versa. The third major finding in planning after disasters is that the majority of studies are undertaken in urban areas, and less are explored in rural settings.

Resettlement issues are becoming more and more important world-wide with the increasing number of disaster-affected population. However, the literature suggests that there still is a large gap in knowledge on post-disaster resettlement. Although areas of study that constitute post-disaster resettlement are available, all are yet segmented and not holistic in approach. This underscored the need of studying resettlement by aggregating disciplines of housing, livelihoods, and planning that are up to this time independently studied.

CHAPTER 3. *NIJUMURAGO* AREA: HISTORY, EARTHQUAKE, AND LOCAL GOVERNMENTS

The *Nijumurago* area is often called an "isolated island on land" (*rikuno-kotou*) because of its difficult accessibility. Located deep in mountainous terrain, the area has been historically marginalized from infrastructure and economic development, and therefore very poor. The area, however, has benefited during the years between the mid-1960s and late-1980s, paralleling with the country's significant economic development. Yet, Japan's economic decline and change in the labor force system post 1990s has seriously affected this area, leading to deterioration of its economic conditions, coupled with its high concentration of elderly people. The earthquake that hit the region in 2004 provided further setbacks.

3.1 Rural livelihood: modernization and regional downturn

The *Chuetsu* region, where the *Nijumurago* area is found, is the second most populated region in *Niigata* Prefecture, located approximately 170 miles (270km) north of Tokyo. *Nagaoka* City is the largest city in the region, with a population of 279,546 in 2009 (Nagaoka City, 2009). The *Chuetsu* region became very accessible after the bullet train extended its operation from Tokyo to *Niigata* in the early 1980s, including a station in *Nagaoka*. The two-hour trip each way between *Nagaoka* and Tokyo has made traveling back and forth for business between the two regions a daily occurrence.

The cityscape of *Nagaoka* City, with a mid-sized railway station in its center, looks fairly identical to other non-metropolitan, suburban cities in Japan. The station building standing in the city center is occupied by commercial chain stores. On the west side of the station building, a downtown view includes a contrast of large commercial buildings with national chain stores as tenants and old, small buildings owned by local businesses. The east side of the station is developed in a sprawled pattern, with chain restaurants and retail stores found with high-rise apartment complexes. Such a landscape, however, is only seen in the more developed urban lands on the valley floor, which *Nijumurago* villagers call "flatlands" (*hiraba*). Flatlands in the *Chuetsu* region have historically been prone to natural and man-made disasters, some of which are the *Shinano* river flood (1896), *Nagaoka* air-borne attack (1945), *Sanpachi* snow storm (1963), and *Niigata* earthquake (1964) (Niigata Prefecture recovery vision committee, 2005),

which encouraged villagers to continue residing in the rural mountain areas until recently. Nevertheless, life in the mountains (*yama*) for them was not easy.

3.1.1 Public administration

The *Nijumurago* area is divided into two government jurisdictions as of 2010. *Ojiya* City governs *Higashiyama* District that has nine villages (total population 543), occupying the western portion (Ojiya City, 2009). *Nagaoka* City governs *Yamakoshi* District with 14 villages (total population 1,406), in eastern portion of the area (Yamakoshi District Office, 2009a). Two other villages in the south (94 people), which recently merged with *Nagaoka* City, belonged to *Kawaguchi* Town until April 2010. The naming of *Nijumurago*, translated as "20 villages," can be traced as far back as 1645 for its origin in indicating the current *Higashiyama-Yamakoshi-Kawaguchi* area (Committee for Yamakoshi Village History Writing, 1985). These three areas were previously under *Koshi* County for quite a number of years, in fact, since 1889, when the modern municipal government system was first established in Japan. *Koshi* County, however, was divided in 1954 when *Higashiyama* region merged into *Ojiya* City and the three villages into *Kawaguchi* Town. The rest of the *Nijumurago* region retained their autonomy as *Yamakoshi* village until 2005, when it had to merge with *Nagaoka* City (coincidentally just when the earthquake occurred) due to difficulty in sustaining government functions (Special Reporters for Chuetsu Earthquake & Research Center for Hokuriku Region Development, 2007).

The division of *Nijumurago* area and the dissolution of *Koshi* County are well-tied with the history of Japanese national development. In olden days, before the reach of modernization, the area was more tightly bonded with villagers' shared identity of culture, geography and climate conditions as well as social and economic conditions. However, modernization has influenced villagers' life-patterns and spatial area of daily activities, which increased their connections to the nearest cities. Improved access to the nearest cities, with upgraded roads and tunnels together with higher vehicle ownership rates, have further boosted the bond of *Higashiyama* villagers to *Ojiya* City and *Yamakoshi* villagers to *Nagaoka* City (Special Reporters for Chuetsu Earthquake & Research Center for Hokuriku Region Development, 2007).

3.1.2 Life in the rural area

The *Nijumurago* area is located in the southern part of the *Nagaoka* division in *Niigata* prefecture, where mountains are the predominant feature. The climate and life during the winter season is very severe; snow often accumulates as much as 13 feet high (Nagaoka City, 2005), making it difficult for villagers to travel and thus enclosing them in the snowy mountains for long periods of time. Although such geography and climate make the region renowned for its beautiful rice terrace scenery and clear spring water for growing carp (*Koi*) and branded rice, the land's agricultural use is very limited and thus cannot expand to an extent of making a profit. Agricultural crops, including rice, therefore, are mainly for home consumption and cannot be counted upon as a source of income. With such severe living conditions, the majority of males in this area traditionally worked away from home as seasonal laborers (*dekasegi*) in metropolitan cities of Japan, in Tokyo, Osaka, or Nagoya, during winter for approximately more than half a year. In the cities, villagers took temporary working positions as carpenters, daily construction laborers, waiters, or factory workers. Meanwhile, women back in the village tended to their families and homes by taking on multiple responsibilities; many engaged in domestic work, such as silk threading and weaving, to earn a small amount of cash. They also took care of their houses by clearing the accumulated snow (*yukihori*) off the roof and around the house at least once every three days. If the women did not do this, their houses would likely be damaged with the weight of the accumulated snow. During this time, life in the village for women was particularly difficult with all this additional work, on top of their daily responsibility for their children and parents-in-law. Children's commuting to school was also difficult during the winter; junior high and high school students needed to find a place to board near to their school, regardless of its location in *Nijumurago* or in the city. Furthermore, branch schools were operated in villages for elementary school children. Many youth, upon graduating from junior high or high school, sought jobs in the metropolitan areas (*shudan shushoku*) as there were no local industries that created jobs for new graduates.

3.1.3 The age of prosperity: development and livelihood change

The first national integrated development plan of Japan (*Zenkoku sogo kaihatsu keikaku: Zenso*) was endorsed by Parliament in 1962, aiming to improve citizen's income by redistributing natural, labor, and technological resources throughout the country (Ministry of

Land, Infrastructure and Transportation, 1962). With this aim, an effort to balance urban and rural development was put up front and tailored with development plans and programs to fill the growing gap of urban-rural development. As a result, the national government significantly invested in rural areas to provide upgraded public infrastructure.

The rural *Nijumurago* area benefited from this national strategy. Government officials and community interviewees commented that rural lifestyles greatly changed after the 1960s when roads were upgraded with tunnels that created pathways through the mountains. Until then, life in the mountains was quite self-sufficient and was disconnected from external lives and societies, except for those who were working in the metropolitan areas during the winter. Motorization followed infrastructure and economic development, making villager's access to nearby cities much easier. With this, *Higashiyama* villagers in the western part of *Nijumurago* extended their daily area of living further west to *Ojiya* City, while *Yamakoshi* villagers in eastern *Nijumurago* extended their daily area of activities northward to *Nagaoka* City (Yoshita-Yamakoshi, 2006).

One of the drastic changes in the *Nijumurago* villagers' livelihood during this period relates to the outbreak of the *Koi* boom. Japan's development between the early 1960s to late 1980s worked positively on the *Koi* breeding business in *Nijumurago* owing to several reasons. First, improvement of both local and national transportation secured fast and safe export of *Koi*. It also made the *Nijumurago* area accessible to *Koi* customers from across the country. Second, because Japan's economy consistently developed upward in the post-1960s until the end of the bubble economy in the late 1980s, people were more generous about spending for luxurious hobbies such as purchasing and owning *Koi*s. Finally, the national policy on reducing rice production enforced through the 1970s to mid 1990s[15] spurred villagers to engage in *Koi* businesses either as a main business or as a side business. This was a time most lively for the *Nijumurago* area, as one *Koi* professional recalls:

[15] Industrialization of agriculture after World War II increased the production volume of rice (Francks, 2000; Francks 1998). On the other hand, consumption has decreased drastically due to the shift of food preference of the people in the country. As a result, rice was overstocked, and the government decided to enforce the first rice set-aside policy in 1970 (Kamon, 2002). Within this policy, there was a program that provided financial incentives for converting rice paddies into other agricultural use, which, for many villagers in *Nijumurago*, were attractive for converting to *Koi* breeding ponds.

> That time was like a dream. You can't imagine how congested this road [it is now quite dead] was, full with visitors every weekend. You see cars parked on both sides of the street with no empty spaces, and everyone was looking into the breeding pond [located on the side of the streets] to purchase *Koi*s. We then were even selling a young fish [that is not much in value] for a few dollars. Now? Of course we can't sell them. We are lucky if someone even volunteers to have the young fish for free. (Male, in his 50s)

Such businesses, with many villagers involved, made the community feel optimistic that conditions would soon start to improve in the *Nijumurago* area. However, the sense of community began to fall apart in some villages as a result of disparities that gradually became evident between those who benefited and those that did not benefit from the *Koi* business. Although many households succeeded in managing the new business, there were indeed other villagers who continued to work seasonally with no resources and opportunities to start *Koi* businesses.

Development of the *Nijumurago* area has also brought in different life values and opportunities to earn. Younger generations became more successful in finding office jobs in the cities, and began to appreciate urban activities over traditional village activities. The change of household economies as well as lifestyles opened up options and opportunities for villagers to leave the mountains. With different values flowing into the area, cohesion of villages began to fall apart, and individual households began to act independently rather than collectively especially when making decisions. Only one traditional activity of this area, bull fighting, continued to be held in the same manner as before; villagers kept bulls at their homes and fed, walked, and trained them on a daily basis. Villagers proudly gathered with their bulls on days of official fighting held almost every week during the summer, to parade their bulls to other village members as well as to the visiting public. The relationship of bulls and owners is different from other bull fighting events in other locations, which is reflected in the rule of bull-fighting in *Nijumurago,* i.e., no bloody scene because there is no winner nor loser declared in the event. It is rather an occasion for trainers and owners (*seko*) to demonstrate how their bulls respond to directions and also show their skills in terminating the bull-fights without any injury. For villagers, bull-fighting events were not held for tourism purposes, but rather for their own entertainment and pleasure to be able to gather in confirming their care of bulls, uphold tradition, and foster regional unity. This activity, then, has contributed to maintain

horizontal networks of villagers in the area, and further attracted people from the outside for visits.

3.1.4 Regional downturn and the earthquake

The nationwide economic recession in the post-bubble economy beginning in the early 1990s (see Nakazawa, 2008) affected all of Japanese society, forcing changes in many entities from the government down to the lives of people in rural areas. This was also the time when the proportion of elderly increased and rural areas had lost workforce in the post-bubble economy, making the rural areas harder to self-sustain. As a consequence, all city, town, and village governments in Japan began to merge, as a phenomenon called *The Heisei daigapp*ei (Big Amalgamation of Heisei Era) after 1999 to be able to retain sufficient functions regardless of the economic decline, depopulation, and aging (Rausch, 2006). The number of local governments was planned to be decreased by 46% by the end of March 2010, from 3,232 in 1999 to 1,742 (Ministry of Internal Affairs and Communications, 2009). Within the merging prefectures, *Niigata* prefecture has one of the highest decreasing rates of 72.3%; the number of local governments decreased from 112 in March 1999 to 31 in March 2010 (Ministry of internal affairs and communications, 2009). As for the *Nagaoka* region, nine local governments merged into *Nagaoka* City after the beginning of 2006, besides *Ojiya* City and *Kawaguchi* Town (Niigata Prefecture, 2009).

Meanwhile, the *Nijumurago* area has also begun to face the impact of economic down turn, together with aging and depopulation starting in the early 1990s. The *Koi* business that once was so profitable was no longer a business that villagers were willing to continue on the side. The once congested roads with customers were now quite dead even during the weekends. Business operations then became further complicated with the spread of a new *Koi* disease, the *Koi* herpes, in the early 2000s. Depopulation and aging became particularly severe in the villages around this time, aligning with the national trend of increases in the proportion of elderly; a jump from 9.1% in 1980 to 12% in 1990 across the country (Cabinet office, Government of Japan, 2009c). Similarly, depopulation in rural areas has further accelerated, with the nation's proportion of population in rural areas declining to 23.8% in 1980 from 36.7% in 1960 (Norin Chukin Research Institute, 2002). As for the *Nijumurago* area, the *Yamakoshi* district had a 37% decline in total population over a 20-year period, from 3,508 (1980) to 2,222

(2000). Furthermore, the proportion of elderly increased from 24.0% in 1990 to 34.6% in just 10 years (Nagaoka City, 2005). The *Higashiyama* district is also experiencing a similar trend (Ojiya City, 2005).[16]

The 6.8 magnitude earthquake on the Richter scale struck the *Chuetsu* region on the 23rd of October, 2004. It devastated the region with damage to approximately 120,000 buildings, while killing 59 and injuring 4,805 (Cabinet office, Government of Japan, 2006; Niigata Nippo, 2006). The casualties were much smaller than that of Kobe earthquake that struck urban Japan in 1995; however, the number of people affected was enormous compared to the number of casualties, totaling 100,000 evacuees at its peak. A white paper on disasters of Japan (2006) summarizes that lifelines and important facilities were damaged tremendously by landslides and sedimentation disasters occurring at many mountainous locations. *Niigata* Prefecture estimated the damage amount at nearly US$27.7 billion (three trillion yen) (Niigata Nippo, 2005). As a result, more than 100 thousand people were initially forced to evacuate and displaced for a maximum of 3 years (Sawada, 2006). This earthquake was therefore a particularly challenging event for government administration and for the residents of the *Nijumurago* area, as they were instantly forced to be displaced, and then needed to make a decision on returning or relocating.

3.2 Earthquake impacts, displacement, and regulatory response

3.2.1 Earthquake impacts

The *Nijumurago* area was one of the most severely affected areas in the *Chuetsu* region. *Mr. Nagashima*, the former village mayor of the *Yamakoshi* district, talks about the impact of the earthquake:

> I began walking toward the government office a little before dawn; the word depressing does not even come close to describe the emotion I felt when I began to see the landscape. I was more than shocked when I saw that where there should be mountains, the mountains were missing; roads were missing and houses were missing…from locations where all these were supposed to be found. (Special Reporters for Chuetsu Earthquake & Research Center for Hokuriku Region Development, 2007. p.19)

[16]Although there is no precise data available for the *Higashiyama* District on change of population before the earthquake, *Ojiya* City suggests that its total population reached a maximum in 1980 and is declining since then. For the year 2000, population declined by 2% from 1995 and the proportion of elderly reached over 23% (Ojiya City, 2005).

With a feeling of devastation, Mr. *Nagashima* decided to enforce the evacuation order to all households in his district on the very next day, and evacuated villagers with the assistance of the national self-defense force. The village government also evacuated to *Nagaoka* City as its operation back in the village was no longer possible (Special Reporters for Chuetsu Earthquake & Research Center for Hokuriku Region Development, 2007; Yoshita-Yamakoshi, 2006). Similarly, Mr. *Seki*, former mayor of *Ojiya* City, administering the *Higashiyama* district, enforced an evacuation advisory a day after the earthquake. Its government office, however, incurred less damage from the earthquake as it is located in the city center, some distance from the epicenter. The City thus managed to establish an emergency response headquarters in its office within an hour after the earthquake (Niigata Nippo, 2005)

Nijumurago communities' initial response was similar to one another at this point. Interview respondents explained that villagers first confirmed the safety of others and/or tried to assist those who needed help, and then in the following stage gathered to a safe place for a few nights rest. They then gradually found out that communities were isolated with the landslides which cut roads off. All means of communication were also shut down. Consequently, villagers shared ideas to keep themselves warm and find ways to cook so that they could survive for the next few days at places where they gathered. In some communities villagers individually stayed in their cars to spend some nights, because community halls in their villages were either unsafe or unavailable. Initial evacuation began the very next day, on the 24th, with communities that succeeded in making outside contact, and then it gradually expanded to neighboring communities. Elderly villagers and those who needed medical care initially were transported to either *Ojiya* City or *Nagaoka* City by helicopters, followed by other villagers whose injuries were less serious. Communities closer to the cities evacuated with their cars with the help of police and the self defense forces, as the capacity of the helicopters was limited. The evacuation activity gradually expanded to neighboring communities, and by the end of the 25th, two days after the earthquake, the majority of the villagers had been evacuated, except for a limited number of people who initially resisted leaving because they wanted to protect their assets in the communities.

The emotional response to the earthquake damage and evacuation was also similar among the *Nijumurago* communities. Many felt that they could never return, as their communities were too devastated to imagine them being rehabilitated. In the interviews they commented:

> I was so surprised when I saw the crumbled mountain in the next morning. It is true that we heard rumbles as tons of earth loosened and slid into the [*Imogawa*] river throughout the night, but I didn't think it was that bad. Then I thought that we could no longer live here. (Female, in her 60s)
>
> My husband told me that he said to grandfather [husband's father] while pulling him out from the bath tub where he was stuck after the earthquake [as he was taking a bath at that time]; 'our neighborhood is totally damaged…I'm sorry to say this but we need to give up living here'. When he told me about it, I confirmed that all of us were emotionally on the same page. (Female, in her 60s)
>
> I let out the bulls from the barn so that they may have more chances to survive on their own. It was a difficult decision to make, because we care about the bulls and regard them as a member of our family…but I decided to let them out because I thought that I could never come back here at that time… (Male, in his 60s)
>
> Both our house and land for gardening were totally damaged. I thought I could never come back when we were being transferred to *Nagaoka* City. My husband quietly said in the helicopter, 'take a long look at our village…we won't be able to come back again…' but I was too scared of the height to look down so I couldn't see as much… (Female, in her 60s)

Furthermore, the physical damage to communities in the *Nijumurago* area was extensive. Many villagers lost their individual assets such as their house, lands for gardening, farming equipment and facilities, as well as *Koi* ponds and bulls. Cultivated land disappeared as a result of the landslides as well as from river flooding caused by the landslide sedimentation.

3.2.2 Displacement process of *Chuetsu* region

The earthquake isolated 61 communities in the *Chuetsu* region from external communications, with extensive ground damage (Sawada, 2008). Villagers were then forced to be displaced, with evacuation advisories or orders enforced by their local governments the next day. The majority of people did not want to leave their communities even if their homes were totally destroyed by landslides, because they believed they could help each other or individually survive in their communities. Nevertheless, local governments decided to enforce evacuation orders and advisories by districts to reduce possible additional risks that may result from

flooding and landslides. Temporary evacuation sites, functioning as temporary shelters, were located throughout cities and villages in such buildings as schools (including gymnasiums and schools that are not operated), shopping malls, and social welfare facilities. Living in temporary shelters lasted approximately up to two months, towards the end of December 2004 (Kawaguchi Town, Unknown). People who experienced living in these temporary shelters recall the time as the hardest one, because they did not have any privacy as all were squeezed into the allocated buildings. People further recall that their main conversation with governments as well as community members was about the degree of damage back home, but nothing related to the future.

To accommodate displaced populations, eight local governments of *Ojiya* City, *Nagaoka* City, *Tokamachi* City, *Tochio* City, *Mitsuke* City, *Kashiwazaki* City, *Kariwa* village, and *Uonuma* City[17] began constructing temporary housing (*Okyu kasetsu jyutaku*) in accordance with the "Disaster Relief Act" (*Saigai kyujyo hou*) (Cabinet office, Government of Japan, 2006). In total, 64 buildings were constructed as temporary housing, with accommodating capacity of 3,460 households (Sawada, 2006). Besides constructing temporary housing complexes, local governments provided support to the affected through renting vacant private housing (similar to the federal disaster voucher program/rental aid program used in post-Katrina temporary housing in the U.S. (Chen, 2006; Walsh, 2007)), vacant public housing, and container housing. The alternative housing, however, was much less in use compared to the newly constructed temporary housing (City Planning Institute of Japan, 2007).

These temporary housing were ready to accommodate people by the middle of December 2004, within two months after the earthquake. Gradually, people moved to their designated complex, which accommodated the number of units needed based on their request submitted to local governments while in temporary shelters. Local governments put utmost effort to collectively accommodate the displaced community members, so that their difficulties of going through displacements would be minimized and further avoid bitter lessons learned from the 1995 *Hanshin-Awaji* earthquake, in which shelters provided at isolated sites disrupted community ties and intensified mental isolation and depression of the victims. As a result, rates

[17] There were 13 local governments at the time of the earthquake; however, the number went down to eight (as of year 2009) with the merger after October 2004.

of suicide and "lonely deaths" dramatically increased, leading to a suggestion that preserving community functions and ties are important in post-disaster displacement (Olshansky, 2006a). Providing temporary shelters in the *Chuetsu* region, therefore, was more systematically carried out from the initial stage of displacement, by retaining the pre-disaster social networks of communities as reflected in the location and layout designs of the temporary housing (Nakade, 2006; Sawada, 2008). Additionally, governments decided to construct welfare facilities for the needy in the temporary housing complexes, such as day-care services to provide meals and bathing services to the elderly (The Japan Times Weekly Online, 2004).

According to *Niigata* Prefecture (2007), 2,935 households (9,649 people) were displaced and lived in the temporary housing at its peak in March 2005, when the population counts initiated. As for the distribution of temporary housing, *Nagaoka* City bears the largest number by more than 60% constructed by them (see Table 3.1). *Ojiya* City follows with approximately 25% of total construction. With respect to the number of people displaced to the temporary housings, it showed a constant decline until the end of December 2006 to approximately 500 people when the two-year housing assistance expired in accordance with the "The law on supporting livelihood restoration of disaster victims (*Hisaisha seikatsu saiken shien hou*)" (Mitsui, 2007; Niigata Prefecture, 2007). Finally, on the last day of December 2007, *Nagaoka* City, which accommodated *Yamakoshi* and other villagers from different jurisdictions in *Yokodai* temporary housing, closed the site after a year of extension, ending three years of operation (Kyodo Tsushin Newspaper, 2007).

Table 3.1 Distribution of temporary housing

Districts	Former Districts	Bldg. complex	Constructed Housing Units	Size of housing unit 1DK	2DK	3K	No. of occupied units**	Construction per District	Proportion (%)
Ojiya City		17	870	119	596	155	680	870	25.14
Nagaoka City	Nagaoka City	9	840	70	422	348	753		
	Koshiji Town	5	114	0	25	89	108		
	Oguni Town	3	118	10	89	19	106	2,116	61.16
	Yamakoshi Village	3	632	55	383	194	562		
		10	412	60	191	161	354		
Tokamachi City	Kokamchi City	5	138	28	76	34	112	153	4.42
	Kawanishi Town	2	15	0	7	8	14		
Tochio City		2	105	8	77	20	68	105	3.03
Mitsuke City		2	103	16	52	35	87	103	2.98
Kashiwazaki City		3	44	9	17	18	38	44	1.27
Kariwa Village		1	39	3	24	12	24	39	1.13
Uonuma City	Hirokami Village	2	30	1	16	13	19	30	0.87
Total		64	3,460	379	1,975	1,106	2,925	3,460	100.00

* 1DK = 1 bed room with dining kitchen, 2DK = 2 bed rooms with dining kitchen, 3K = 3 bed rooms with Kitchen

**as of April 30, 2005

Source: Modified from Sawada (2006)

Most of the areas where these temporary housing accommodations were built are currently returned to being vacant lots. The temporary shelters were disassembled soon after all displaced villagers found their permanent settlement, and are kept either by the cities or companies that own them to reuse should the need arise in future disasters. Infrastructure and road pavements, which were constructed for the temporary housing sites, are also dismantled.[18]

3.2.3 *Chuetsu* earthquake and regulatory response

1) National regulatory responses to the affected regions

Twenty-nine (29) localities[19] in the *Chuetsu* region were designated as areas needing relief assistance under the "Disaster Relief Act" (*Saigai kyujyo hou*), soon after the earthquake on October 23, 2004 (Niigata Prefecture, 2004). All activities on emergency response were

[18] The only exception is the sites prepared for *Yamakoshi* residents. In their case, the temporary housing accommodations were prepared in the "*Nagaoka* new town", a large residential area failing to attract population since its initiation in 1975. Because there are still plans to develop this "*Nagaoka* new town" , roads paved for the temporary housing are preserved.

[19] *Ojiya* City, *Nagaoka* City, *Tokamachi* City, *Tochio* City, *Muikamachi* Town, *Yasuzuka* Town, *Nakasato* Village, *Kashiwazaki* City, *Nakanoshima* Town, *Koshiji* Town, *Mishima* Town, *Yoita* Town, *Wajima* Village, *Izumozaki* Town, *Yamakoshi* Village, *Kawaguchi* Town, *Horinouchi* Town, *Koide* Town, *Yunotani* Village, *Hirokami* Village, *Shiozawa* Village, *Yamato* Village, *Kawanishi* Town, and *Oguni* Town were designated on the same date, while *Nishiyama* Town, *Sumon* Village, *Tsunan* Town, and *Kariya* Village, on the 24th.

then initiated to secure both the victims' safety and social order of the affected areas, with national and local governments, Japan Red Cross, and other relevant organizations taking the lead. Furthermore, the Cabinet office designated the *Chuetsu* earthquake as a "special disaster emergency" (*Tokutei hijyou saigai*) in accordance with "act on special measures concerning preservation of rights and interests of victims of specified disaster" (*Tokutei hijyo saigai no higaisha no kenri rieki no hozen tou wo hakaru tameno tokubetsu sochi ni kansuru horitsu*) by cabinet decree designating 2006 *Niigata Chuetsu* earthquake as disaster under special emergency and special acts relevant to this appointment (*Heisei 16nen Niigata-Ken Chuetsu jishin ni yoru saigai ni tsuiteno tokuteihijyou saigai oyobi koreni taishi tekiyou subeki sochi no shitei ni kansuru hourei*) (Decree 355 on November 17, 2006), on November 17, 2004 (Cabinet office, Government of Japan, 2004a).[20] With this measure in effect, the rights of the victims exposed to unexpected catastrophe are protected; for instance, responsibilities on tax payments and school attendance are exempted for a certain period of time (Cabinet office, Government of Japan, 2009a).

Following this announcement, on November 19, 2004, the Japanese Diet approved a US$2.77 billion (JPY 300 billion)[21] supplementary budget for the 2004 fiscal year as the expenditure for rehabilitation and reconstruction in *Chuetsu's* earthquake recovery. The Diet further approved the issuance of local bonds by *Niigata* Prefecture worth US$2.77 billion (JPY300 billion) which is expected to earn US$ 0.56 billion (JPY 60 billion) in 10 years of management. The national government then agreed to take over interest of local bonds (Cabinet office, Government of Japan, 2007b).

On November 26, 2004, the Cabinet endorsed a decree approving *Chuetsu* earthquake as a "disaster of extreme severity" (*Gekijin saigai*: *Hongeki*),[22] which came in effect on December 1 (Cabinet office, Government of Japan, 2004b). This was the second disaster in Japan's history, besides several floods after the 1995 *Hanshin-Awaji* earthquake, designated as disaster of extreme severity since the establishment of this category in 1962 (Cabinet office, Government

[20] Final amendment made on July 26, 2006.
[21] Adjusted to US dollars with an exchange rate of US$1=JPY 108.17 published by Bank of Japan for year 2004 average.
[22] A disaster could be designated as extremely severe (*hongeki*), if the total amount of damage exceeds a certain amount, and could impact the national economy (Research Committee for Disaster Management Policy, 2004). The damage for the *Chuetsu* earthquake was estimated at US $2.53 billion (JPY 274 billion) as of November 19, 2004 (Cabinet office, Government of Japan 2004).

of Japan, 2009b). The Cabinet at the same time designated several localities with damage estimates exceeding a certain amount so that they would be eligible for several types of financial assistance, in: i) public infrastructures and facilities, ii) agriculture, forestry, and fisheries, and iii) other (educational and public facilities) sectors. The Cabinet also approved several localities, including *Ojiya* City, *Tokamachi* City, *Yamakoshi* Village, and *Kawaguchi* Town, as "localities experiencing disaster of extreme severity" (*Kyokuchi gekijin saigai: Kyokugeki*) on the same date. This approval primarily provided further financial benefits to small and medium enterprises in the appointed localities in addition to the expected assistance by being affected from the disaster of extreme severity (Cabinet office, Government of Japan, 2004b).

Having the earthquake approved as a disaster of extreme severity meant that the assistance on rehabilitation and recovery would be significant, having much more impact than other disasters designated as localities experiencing disaster of extreme severity. Additionally, having approval for issuing local bonds for recovery purpose was a significant action that enabled flexible designing of recovery strategies and programs. In line with this, the *Niigata* prefecture established the *Niigata Chuetsu* earthquake recovery foundation (*Niigata-ken Chuetsu daishinsai fukko kikin*) on March 1, 2005, using US$2.77 billion (JPY 300 billion) collected by the local bonds issued. The *Niigata Chuetsu* earthquake recovery foundation, using this pooled fund, aimed to implement recovery programs for the next 10 years. This fund is mainly aimed to use in filling the gap between government policies and citizen's need, which were to be developed after collecting ideas widely from both governments and public. Thirty-four (34) menus with seven categories of i) victim's lives, ii) employment, iii) residences, iv) industries, v) agriculture and fisheries, vi) tourism, and vii) education and cultures, were identified important after collecting and sorting comments from public, and initiated to implement in 2006 (Nakade, 2006).

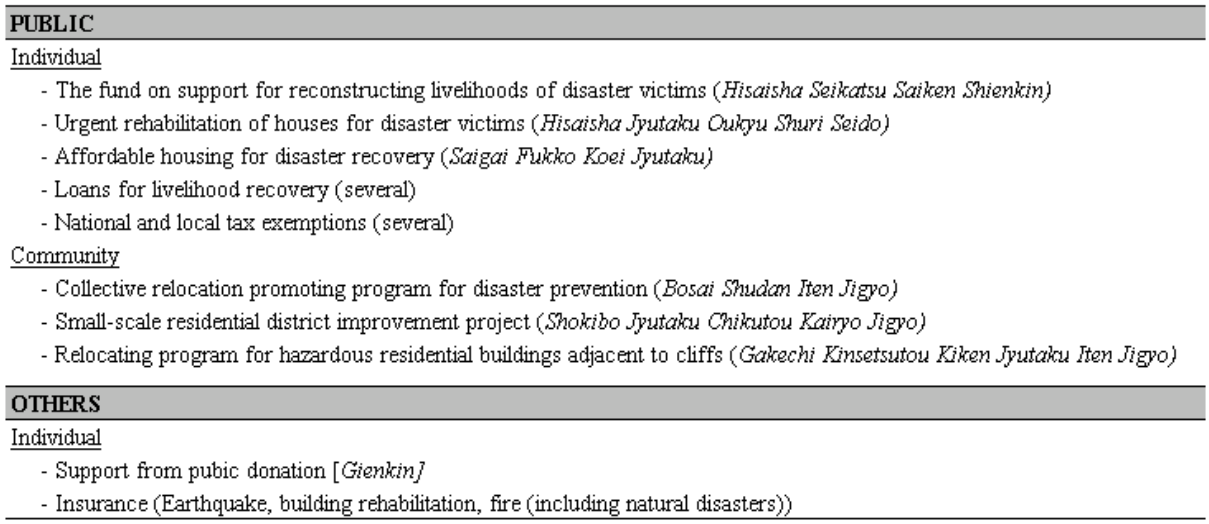
The actual handling of the program is through various institutions and organizations, including prefectural and local governments, universities as well as newly formed non-governmental and non-profit organizations post- *Chuetsu* earthquake.[23]

2) Assistance and recovery programs supporting community restoration

The national and prefecture governments further arranged public assistance to support recovery of communities and individuals, besides regional recovery. This type of policy is mainly administered through aid provision, loans, and tax exemptions (Cabinet office, Government of Japan, 2007a). In general, loans at low interest rates are made available to individuals who decide to rebuild houses, while national and local tax exemptions or reductions are also given for a certain amount of time. At the same time, national and local governments provided three forms of assistance in supporting individual restoration of livelihoods, while providing three types of recovery programs for the recovering communities (see Figure 3.1). Furthermore, other non-governmental financial resources were provided to individuals in restoring their lives.

[23] There are some salient organizations formed after *Chuetsu* earthquake. Citizen's network for *Chuetsu* Recovery (*Chuetsu fukko shimin kaigi)* or so-called *Chuetsu fukko* network was established in May 2005 to support the recovery of the *Chuetsu* region through programs of activities that are geared toward citizen's needs. This organization is active in three jurisdictions of *Nagaoka* City, *Ojiya* City, *Kawaguchi* Town, as well as *Tokamachi* City, and *Kashiwazaki* City. This organization is operated under five concepts of 1) citizen "generated", 2) "mutual-supporting", 3) "story-telling", 4) "networking", and 5) "understanding" better recovery. This organization's activity is mainly funded by local enterprises, community organizations, and citizens' donations for operation. Committee members include: academics, NPO members, community organization members, and local enterprises. *Chuetsu Organization* for Safety and Security (*Chuetsu Bousai Anzen Suishin Kiko*) is another one. This foundation was established 16 months after the earthquake to store earthquake-related information and promote recovery research. A recovery design center is one of the active groups within this organization supporting livelihoods of affected village communities. Finally, the "Life in Motherland (LIMO)" foundation was established for a 10-year operation aiming at reestablishing economic and living sustainability in the mountainous regions. It intends to add value to life in the mountainous region by developing survival strategies through networking among various actors of national, prefectural, city and regional governments and residents.

Figure 3.1 Type of assistance and recovery programs supporting livelihood restoration



Public disaster assistance provided to individuals

Three major types of support, besides loans and tax exemptions, were provided by the national and prefectural governments in the *Chuetsu* region. These include: i) the fund on support for reconstructing livelihoods of disaster victims (*Hisaisha seikatsu saiken shien kin*), ii) urgent rehabilitation of houses for disaster victims (*Hisaisha jyutaku okyu shuri seido*), and iii) affordable housing for disaster recovery *(Saigai fukko koei jyutaku)*. Each program has some restrictions as well as income caps for use, and so there were people who did not receive much assistance. The following sections briefly describe the overall contexts and rules of each program.

The fund on support for reconstructing livelihoods of disaster victims

The governments in Japan, whether national or local, traditionally do not provide financial support to individual households, and therefore national laws supporting affected individuals do not exist. This rule, in principle, was also the case for the *Chuetsu* earthquake recovery (Sawada, 2007). Yet, some modifications have been made with recurrent natural disasters, since experiencing the Kobe earthquake of 1995. In April 1996, legislation on the "Act on Support for Reconstructing Livelihoods of Disaster Victims" (*Hisaisha seikatsu saiken shein hou*) was approved, and an assistance program named the fund on support for reconstructing livelihoods of disaster victims was endorsed, allowing disaster victims to receive

financial aid. The use of the fund was initially more restrictive as it only permitted consumption of daily commodities; however, the law was amended to extend its use to housing demolition and removal in the course of the *Chuetsu* earthquake recovery. The total amount to be granted to each household with this program is US$ 27.7 thousand (JPY 3 million), two thirds of which can be used for housing demolition and removal (Cabinet office, Government of Japan, 2009b). Nevertheless, the total amount to be granted varies for each household, because it is calculated by the level of housing damage, age of the household head, and the household income of the previous year.

With this rule, young household heads and those earning a modest income were often not qualified to receive this assistance. *Niigata* prefecture then decided to provide a similar program that is more flexible to address these issues; although it followed similar criteria with the level of housing damage, the age limit was removed to accommodate household heads younger than 45 years old, and it also eliminated the cap of household income. Furthermore, financial aid by the local government allowed using it on home rehabilitation and rents, which are prohibited in the national program (City Planning Institute of Japan, 2007). Although this program, the fund on support for reconstructing livelihoods of disaster victims, is not a remedy to support rebuilding the affected homes, it is worth mentioning that both the national and local governments have initiated efforts to improve their ways of supporting the affected victims in restoring their lives.

Urgent rehabilitation of houses for disaster victims

The program, "Urgent Rehabilitation of Affected Houses" (*Hisaisha jyutaku okyu shuri seido*), aims to provide support to homeowners that need to rehabilitate their existing homes damaged by any disaster. It, however, has several restrictions on use, including an income cap. First, the house has to be severely or largely damaged, yet the household is not expected to live in temporary housing. Second, the homeowners have to initiate rehabilitation within six months from the disaster, and in the case of *Chuetsu* earthquake victims, that meant by March 31, 2005 (Sawada, 2006). On the other hand, *Niigata* prefecture provided similar aid that is more lenient by removing the cap of household income and the restriction of residence in temporary housing, and also accepted its use by households having homes appraised as totally collapsed. The maximum amount of aid provided to each household is US$ 9.2 thousand (JPY 1 million)

for those having severely damaged homes, and US$ 4.6 thousand (JPY 0.5 million) for households appraised as homes largely damaged (Sawada, 2006).

Public (affordable) housing for disaster victims

Governments traditionally construct or use existing affordable housing for disaster victims who lost their homes and have no financial capacity to reconstruct, as a primary form of assistance. This arrangement is secured under the "Act on Public Housing" (*Koei jyutaku hou*) of 1951, which directs the local government to provide low-income citizens a place to live for a small amount as rent (Ministry of Land, Infrastructure and Transportation, 1951). The need for affordable housing after the earthquake in *Chuetsu* was high, due to the number of elderly households (City Planning Institute of Japan, 2007). As the Kobe recovery suggested, the elderly face utmost difficulties in restoring or reconstructing their homes after a devastating disaster, because, without work, their incomes are low and applying for a loan in the market is impossible (Ueda, 2000). In post *Chuetsu* earthquake, a total of 336 affordable housing units were constructed in *Nagaoka* City (including former *Oguni* Town and *Yamakoshi* village), *Ojiya* City, *Kawaguchi* Town,[24] and *Tokamachi* City[25] with the program of affordable (public) housing for disaster victims (City Planning Institute of Japan, 2007). Additionally, 121 housing units for disaster-affected households were provided by local governments,[26] using regular affordable housing programs (Niigata Prefecture, 2008).

Recovery programs provided to communities

Three major programs were used for supporting livelihood restoration of affected communities after *Chuetsu* earthquake. These are "the collective relocation promoting program for disaster prevention" (*Bosai shudan iten sokushin jigyo: Boshu*), "small-scale residential district improvement program" (*Shokibo jyutaku chikutou kairyo jigyo*), and "relocating program for hazardous residential buildings adjacent to cliffs" (*Gakechi kinsetsu tou jyutaku iten jigyo)*.

[24] Merged with Nagaoka City on April 1, 2010.
[25] Details are: *Nagaoka* City (145), *Ojiya* City (96), *Tokamachi* City (10), and *Kawaguchi* Town (85).
[26] The breakdown is as follows: *Nagaoka* City (mainly for *Yamakoshi* region) (57), *Ojiya* City (9), *Tokamachi* City (35), and *Uonuma* City (20).

Collective relocation promoting program for disaster prevention

This program was established under the "Act on Special Measures for National Finance regarding collective relocation program for disaster prevention" (*Bousai no tame no shudan iten jigyou ni kakaru kuni no zaiseijyou no tokubetsu sochi tou ni kansuru houritsu*) in 1972 (Mitsui, 2007). The 1972 heavy rainfalls that affected multiple localities across Japan in early to mid July[27] propelled the national legislation to work toward establishing this program. The program intends to promote relocation of residents from a more hazardous area to a less hazardous area for the protection of their lives and assets. The local government will be responsible for implementing the program, and three-fourths of the total construction cost upon developing a new site will be covered by the national government. There are strict conditions for using this national program, which normally requires meeting the following four criteria: i) Post-resettlement housing has to be an apartment complex and there will be no detached housing allowed, ii) All households from the former site, designated as relocation promoting areas, are prohibited to continue to live there; at the same time, more than 10 houses need to be constructed at the new site,[28] iii) Communities need to accept the relocation, and iv) The pre-resettlement property of individuals will be declared hazardous, thereby strictly prohibiting future residential use (Ministry of Land, Infrastructure and Transportation, 2004a). For local governments, therefore, this program is attractive for the amount of support in developing a new site. The downside of it, for communities, lies in the limitation on land use after employing the program, with residential use prohibited. Further, past research (e.g. Nunotani, Hirata, Murakami, Sadohara, & and Nagano, 1992) suggests that applying this program to a depopulating area is especially troublesome, as the program requires the government to operate and maintain the new site for 30 years after construction. With rural population declining, local government finances will already be stretched to the limit to repay the money borrowed from the program, and maintaining the site will be a large financial burden.

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[27] The statistics shows that 441 were killed, 652 were injured, and 4,862 houses were damaged or totally collapsed just in a few weeks of July. This number is double or triple the annual average in the 1960s (National Police Agency).

[28] In case the number of households in the original neighborhood exceeds 20, more than half that number need to agree to move into the new site. For the affected area of the Chuetsu earthquake this criterion was reduced to 5, instead of 10 houses required for the new site.

In recovering from the *Chuetsu* earthquake, 10 communities decided to use this relocating program; nine are implemented with national funding while one is implemented by the prefectural fund (Niigata Prefecture, 2008).[29]

Small-scale residential district improvement program

The "Small-scale residential district improvement program" (*Shokibo jyutaku chikutou kairyo jigyo*) is intended to support residential areas where basic infrastructure is in insufficient condition. The program is not primarily designed for the use of post-disaster recovery. It aims to demolish and reconstruct residential buildings and improve public infrastructures (e.g. roads and parks) in the targeted area. Prerequisites for using this program include the following: i) more than 15 residential buildings need to be repaired, and ii) more than 50% of houses in the targeted area need to be reconstructed. The rate of financial support to the local government by the national government for reconstruction is a little less than that of collective relocation; demolishing blighted structures and land purchase are supported by half the total cost, while the national government provides two-thirds of the total cost of new home construction (as affordable housing) (Ministry of Land, Infrastructure and Transportation, 2004c) . For local governments, this program is still attractive. In the recovery process post- *Chuetsu* earthquake, former *Yamakoshi* Village has used this program extensively.

Relocating program for hazardous residential buildings adjacent to cliffs

"Relocating program for hazardous residential buildings adjacent to cliffs" (*Gakechi kinsetsutou kiken jyutaku iten jigyo*) shares a similar purpose as the collective relocation promoting program for disaster prevention. The program promotes relocation of residents living in areas close to cliffs, which may pose a risk and danger to them, to less hazardous areas. However, the program's restrictions are much less than the collective relocation program, because it does not require collective relocation, although all houses in the area designated need to be relocated. Conversely, the amount of financial support to individuals is much less than

[29] Out of nine nationally funded relocations, two village communities are in *Nagaoka* City (*Ayase*-Town, *Nishidani*), six in *Ojiya* City (*Jyunidaira*, *Utogi*, *Nigoro*, *Tsumurisawa*, *Asahi* and *Shiodani*) and one in *Kawaguchi* town (*Kodaka*). *Kodaka* village communities also adopted the "small-scale residential district improvement program" and "residential building relocating program for houses constructed nearby cliffs (*Gakechi kinsetsutou kiken jyutaku iten jigyo*)" at the same site (Kawaguchi Town, Unknown). *Niigata* prefecture also decided to fund *Yamanoda*, *Nagaoka* City, with a similar collective relocation program.

the other two ; the maximum amount that can be availed is US$7,200 (JPY 780,000) for each blighted structure demolished in the hazardous area and households that decided to either construct or purchase a house in the market will additionally receive financial support of amount equivalent to the loan interest of which they borrowed (Ministry of Land, Infrastructure and Transportation, 2004b). The other benefit of using this program instead of the relocation program is that the former land could still be used for residential purposes, if the residential development includes risk-reduction construction. This program was used in different locations throughout the *Chuetsu* region.

Other non-governmental financial resources for individuals

Besides public assistance provided by the government, there are other types of assistance that supported affected households to restore their lives. Two of the most important were support from public donations and private insurance.

Support from public donations

Support from "public donations" (*Gienkin*), was perhaps one of the most useful types of assistance for some of the affected victims, as there were no restrictions on its use. Donations that were addressed to governments were allocated to individuals based on the level of damage of their house as follows: totally collapsed, severely damaged, damaged, and partially damaged. The City Planning Institute of Japan (2007) suggests that the *Niigata* prefecture government distributed US$ 18,500 (JPY 2 million), US$ 9,200 (JPY 1 million), US$ 2,300 (JPY 0.25 million), and US$ 460 (JPY 50 thousand) to affected households, respectively. Cities and towns also followed similar criteria in distributing donations to households, although amounts collected varied by local governments.

Insurance

Disaster victims in the *Chuetsu* region generally were enrolled in one of three types of insurance: earthquake insurance (*Jishin hoken*), mutual relief insurance on building reconstruction (*Tatemono kousei kyosai: tateko*), or mutual relief insurance of fire disaster including earthquake benefits. Of these three types of insurance, mutual relief insurance on building reconstruction, sold by Japan Agricultural Cooperatives (JA), paid out the largest

amount, totaling US$ 708 million (JPY 76.6 billion)(Cabinet office, Government of Japan, 2007a).

In summary, varieties of funds were available from national, regional, and local sources to help restore homes and livelihoods of individuals and communities. Because the *Chuetsu* earthquake was designated as a disaster of extreme severity by the national government, the financial burden on local governments to rehabilitate and reconstruct public infrastructure was greatly reduced. Furthermore, local governments decided to adopt national programs to enhance recovery of the affected communities, such as the collective relocation promoting program for disaster prevention, small-scale residential district improvement project, and relocating program for hazardous residential buildings adjacent to cliffs. Meanwhile, affected households had opportunities to receive some assistance through such public and private funds as: the fund for supporting livelihood restoration of disaster victims, urgent rehabilitation of houses for disaster victims, and affordable housing for disaster recovery. Additionally, people were provided with non-public assistance through support from public donation, while some received benefits and settlements from their insurance. Needless to say, these disaster assistance sources were provided on top of national investment on rehabilitation and reconstruction of infrastructure and public facilities.

3.3 Resettlement decisions of local governments for regional sustainability: Economic development vs. Community preservation

Both *Ojiya* City and *Yamakoshi* Village governments then decided to support relocation and repopulation, respectively. Although the two governments' decisions seem to go against each other, their ultimate goal was to support their respective regions and peoples to recover in a sustainable manner.

3.3.1 Why relocate?

The main reason *Ojiya* City decided to support the decision to relocate was for economic sustainability. Other factors, such as geographic conditions of *Ojiya* City and *Higashiyama* District, as well as a community's request for relocation, also contributed to their decision. First, developing the local economy in a declining rural area with a high ratio of elderly did not seem to be practical in the long-term. Therefore, the City encouraged villagers to join

economic activities that are more available in the flatlands so that the villagers would not have to depend upon making a living in the mountains. Furthermore, rural maintenance costs, such as snow plowing, road and public facility maintenance, as well as landslide controls, were becoming an increasing burden on local governments, with costs exceeding the benefits. Particularly, tax revenue from rural areas was becoming way too small compared to the investment needed for managing public facilities, due to the small population and high rate of elderly. The former City Mayor, Mr. *Seki*, commented on their decisions this way:

> In modern society, everyone, even those living in the rural areas, needs some form of cash to pay for electricity, gas, and newspapers. So when I think of managing a region, I can't dismiss the conversation on economic opportunities – people need some level of involvement to economic activities to make a living. So when we thought about providing support to the affected *Higashiyama* communities, it was more reasonable to support relocation rather than repopulation, as their economy in the mountains was not doing well…I truly hope that traditional industries, like *Koi* breeding and bull-fighting, would expand to produce jobs for residents, but overall, these are going downhill… in fact they were facing closedowns of factories and businesses even before the earthquake. So I just wanted to avoid a situation where villagers who wanted to leave had no choice but to continue living in the rural areas without jobs. We, therefore, provided options [by preparing relocation programs] that individual households could decide either to stay or leave.[30]

Several *Ojiya* City officials gave further reasons for supporting relocation:

> Of course we did think about supporting people who wanted to rebuild their homes back in *Higashiyama* District. But then we realized that although the generation who were living there at the time of the earthquake would come back to stay, the next generation would probably leave the mountains anyway.

> We did have a lot of pressure from the media questioning our decision on supporting relocation. But when we thought about the future, however, we decided it was more sustainable to support relocation because the region is definitely on a long term decline. It is harsh to say, but the governments' long-term support and service to the rural area is uncertain.

The topographic condition of *Ojiya* City and *Higashiyama* District as well as a request by one *Higashiyama* community to be relocated further backed up the government's decision to relocate. Because *Ojiya* City administers both urban (flatlands) and mountain areas, unlike *Yamakoshi* district which only covered mountain areas at the time of the earthquake, permanent

[30] An interview with Mr. Koichi Seki, former *Ojiya* City Mayor, conducted on June 5, 2009, by Author.

residents had two choices, either relocate to flatlands or return to the mountains. With these options, it was more reasonable for the local government to guide people toward reconstructing their lives in less hazardous areas. Officials explained that the district has been hazardous historically, with landslides and floods occurring often. Furthermore, the earthquake caused landslides and river clogging which further reduced the inhabitable area. With limited areas that are safe to live, programs that can be used to support return, such as "small-scale residential district improvement," were either not applicable or inefficient. Equitable provision of recovery support was also an important issue for the local government, because affected populations had limited livelihood resources not only in the mountainous *Higashiyama* District, but also in other districts in the flatlands of *Ojiya* City. Consequently, the *Ojiya* government decided to simply prepare lands for the affected victims across the city, so that the benefits would be equally provided to everyone. In similar logic, the public (affordable) housing for disaster victims was decided to be constructed in the flatlands. Officials explained that having such housing in the declining mountainous areas would be a burden for them in the long run, because households needing public housing are usually elderly. The former mayor, Mr. *Seki*, has this to say in an interview:

> [If constructed in the rural areas] Living in the public housing will be difficult for the community because majority of them are elderly who would have problems shoveling the snow off from the roof and to the nearest [public] roads every day during winter. Furthermore, as for the city government, we couldn't take the risk of the public housing remaining unused in the next 10-15 years. Due to depopulation and location, finding subsequent renters will be difficult, and I am aware of the criticisms that may flare up then, suggesting if the construction of affordable housing [in the mountain] was *ad hoc.*

Finally, a strong appeal for relocation to flatlands by a community in the *Higashiyama* District made the City decide to support relocation. The community that requested the relocation support acted quickly, so that by end of the first two months after the earthquake, the government had to decide their policies to support relocation or repopulation.

3.3.2 Why repopulate?

In contrast, the *Yamakoshi* village government, currently under *Nagaoka* City, insisted on repopulation. The rationale to support return was straightforward: primarily to preserve and sustain the village. This decision emerged naturally with a dialogue between the village mayor

at the time and villagers at the initial stage of evacuation. This former village mayor, Mr. *Nagashima*, described his visit to the evacuation center where his villagers largely were displaced immediately after arriving to *Nagaoka* City in the early evening of the 25th, two days after the earthquake. He said that, in his conversations with villagers, his belief in returning them to *Yamakoshi* was confirmed by the villagers, because many of them underscored how much they cared about their communities. At the same time, Mr. *Nagashima* also noticed the varied degree of earthquake damage in each community within *Yamakoshi*, and was becoming aware of a need to develop a consensus to recover collectively. He described it thus:

> The damage [of the communities in the village] was not identical. Some communities were severely destroyed while others were not. So, rehabilitation and reconstruction seemed impossible unless otherwise decided by all villagers that it was possible and they need to share a certain consensus [to recover]….and I thought that both communities and the [*Yamakoshi*] village need to share the same mindset…and figured that it can be through 'returning to *Yamakoshi*', to collectively return, if all villagers love their communities back in the mountains.[31]

"If villagers wanted to return," Mr. *Nagashima* continued, "…finding a way to make this happen was my responsibility."

This decision and the phrase "Let's go back to *Yamakoshi*" (***Kaero Yamakoshi e)*** then became the slogan of *Yamakoshi* village three days after the earthquake, and throughout three years of recovery.

With *Nagashima's* firm decision on returning, village officials also confirmed that supporting a repopulation strategy would be the best solution for the displaced residents. Furthermore, because a January 2005 survey conducted by the local government on willingness to return showed that, 97% of the population was hoping to return initially (Nagaoka City, 2008), the government assured its role in supporting the villagers' decision to return. While the village government was seeking the best way to support displaced residents, the national government introduced the "small-scale residential district improvement project" as an appropriate program for reestablishing residents in the former communities. Although the cost that the local government needs to bear is a little more than in the collective relocation program, the

[31] An interview with Mr. Tadayoshi Nagashima, former *Yamakoshi* Village Mayor, conducted on September 6, 2009, by Author.

Yamakoshi government believed that the process requiring residents' involvement in adopting this program would contribute to the 'community making' (*Shuraku zukuri*) of the village. Furthermore, the village government was optimistic about their financial situation, as they already were scheduled to merge with *Nagaoka* City in the next spring, in April 2005. Although the *Yamakoshi* government could have decided to relocate villagers to the City with this planned merger, they instead insisted on sustaining the identity and culture of the village, thereby deciding to use the residential district improvement program to the six most severely-affected communities. Although communities that decide to avail themselves of this program had to rearrange lands, members were allowed to live in the original community that they are familiar with.

Correspondingly, the village government decided to build affordable housing in *Yamakoshi* rather than in *Nagaoka* City, so that its communities could sustain their functions and members would not think about leaving. Village officials were indeed aware of the risk of building such housing in the mountains, and of the burdens that the government may need to bear in the long-term, as the *Ojiya* City government suggested. They therefore decided to avoid a conservative style of affordable housing that is often too simple and unattractive, which also tends to promote the concentration of elderly people and the financially disadvantaged. Instead, a few public housing units were constructed within the pre-existing communities. The government expected the community to sustain the mutual help mechanism that formally existed in the communities, so that vulnerable populations could survive without depending on the support of public assistance.

As described above, the two local governments of *Ojiya* City and *Yamakoshi* Village each had reasonable explanations for supporting relocating and repopulation. Both governments aimed to provide support that would best help villagers to reinitiate their lives under conditions of financial and human resource limitations. These policy decisions, however, meant that there was no support given to the households that did not follow the resettlement programs prepared by the local governments. More precisely, for *Higashiyama* District, households that either decided to return or individually relocate did not receive any support. Similarly, relocating households and returning communities that declined to return, using the

small-residential district program, did not receive any governmental support in *Yamakoshi* District.

3.4 Emerging differences between the *Higashiyama* and *Yamakoshi* Districts

Although these two districts of *Nijumurago* area shared similar chronologies and emotions of the villagers upon initial evacuation, distinctions gradually emerged as time elapsed, because of being administered by two different governments. Major salient differences are: i) location of the displaced, ii) evacuation order and advisory, and, iii) disaster assistance provided in resettlement.

3.4.1 Location of the displaced

On the very next day following the earthquake, a large number of *Higashiyama* villagers began to be evacuated to *Ojiya* City (population of about 40,000), approximately 6.2 miles (10 km) away from the district center. They were evacuated to either one of the following temporary shelters: *Kesajiro*, *Sanrakku*, or an *Ojiya* City-owned gymnasium, where they stayed for a maximum of two months, before the end of December 2004. At this time, the *Ojiya* City officials did not put special attention to arrange villagers to collectively gather according to their community affiliation; however, they soon found out that the villagers tended to stay with their respective communities, at least in groups of several households. Then in the next step, for the temporary housing, arrangements were made by *Ojiya City* to group the villagers by community, and finally, the villagers were each handed an application form which asks for preferred locations of residence by each community. Subsequently, 10 communities were rearranged with several other communities to occupy the temporary housing sites (see Table 3.2).

The majority of *Yamakoshi* villagers were evacuated to *Nagaoka* City (population of about 283,000) located approximately 12.4 miles (20 km) away from the village center, by the end of the second day after the earthquake. The evacuation process was more complicated for *Yamakoshi* villagers, as some of the members were first displaced to *Ojiya* City and then distributed to seven evacuation centers in *Nagaoka* City. In two weeks, the village government reshuffled villagers so that members of the same community could stay together in the same evacuation centers. Then, by late December of the same year, communities were re-displaced

to temporary housing constructed in three areas of *Nagaoka* City with a few other communities (see Table 3.2) (Yamakoshi District Office, 2009b).

Table 3.2 Temporary housing sites and communities

Location of temporary housing	Communities
Higashiyama District, all displaced in *Ojiya* City	
Uenoyama	*Utogi, Koguriyama (partial)*
Motonakago	*Asahi, Terasawa*
Chiyagawa	*Nakayama*
Chiya Daiichi (#1)	*Shiodani, Tsumurisawa, Junidaira, Koguriyama (Partial)*
Chiya Daini (#2)	*Iwamagi, Nigoro*
Yamakoshi District, all displaced to *Nagaoka* City	
Yokodai	*Higashitakesawa [Kajigane, Kogomo, Komatsugura]* *Takesawa [Takesawa, Kannaidaira, Shoubu, Yamanaka, Yubu, Katsuraya]* *Sanga [Okubo, Ikedani, Naranoki]*
Shinyo	*Tanasuhara*
Aobadai	*Mushigame*

Both *Higashiyama* and *Yamakoshi* villagers then lived in these temporary housing sites for the next two to three years, until new permanent residences were found. Although villagers from both districts perhaps had a difficult time adapting to urban life from a rural one while at the same time coping with post-earthquake stresses, their temporary urban life through displacement was an important experience that helped them to understand the differences between living in the flatlands and living in the mountains.

3.4.2 Evacuation order and advisory

The way in which evacuation was enforced also differed between the two districts, because of different decisions by the local governments. Both *Higashiyama* District and *Yamakoshi* District received information that evacuation would be carried out on the very next day after the earthquake, on the 24th of October. However, *Higashiyama* went through a more lenient advisory evacuation operation, whereas in *Yamakoshi*, the evacuation was more of an order and was strictly enforced (Yamakoshi District Office, 2009b; Yamakoshi District Office,

2009a).[32] There are rationales for these different enforcement levels between the two governments; the former *Ojiya* City mayor made the evacuation as an advisory because he realized the need of citizens for flexibility and mobility due to the varied damage level across the city (Niigata Nippo, 2006). On the other hand, the former *Yamakoshi* Village mayor decided to make it a compulsory order to reduce additional damage and loss from the earthquake (Yoshita-Yamakoshi, 2006) and also to promote a shared consensus among the villagers to return collectively (Special Reporters for Chuetsu Earthquake & Research Center for Hokuriku Region Development, 2007).

With different types of evacuation orders, the responses of the district members were also distinctive; some *Higashiyama* villagers initially tried to remain at their homes to protect their assets, including their bulls and *Koi*s, under the lenient evacuation enforcement, until aftershocks further damaged their properties (Special Reporters for Chuetsu Earthquake & Research Center for Hokuriku Region Development, 2007). Even after they moved into the temporary housing in *Ojiya* City, villagers returned home from time to time to feed their animals and to maintain their home. This was particularly useful during the first winter when snow accumulated more than usual – which could have further destroyed houses without snow being cleared away. The lifting of evacuation advisories was done in four stages; on December 7, 2004, July 22, 2005, December 25, 2006, and April 14, 2006. All displaced residents were then resettled to new or reconstructed permanent homes by the end of the second year from the day of the earthquake.

Yamakoshi villagers were put in a different situation with stricter evacuation orders. Although a two-hour temporary visit was allowed five days after the earthquake, it reconfirmed the devastation brought by the earthquake and further provided reasons to prohibit frequent visits. Because most of the villagers had initially thought that evacuation would be very short, just for a few days, people were not prepared for long displacement. Because villagers had to wait for another six months to visit their communities temporarily, on April 28, 2005, many could not do much to protect their assets, their houses, *Koi*s and bulls. The lifting of evacuation involved four steps of timings by communities depending on damage degree and recovery progress; the first notice of lifting was given in July 2005, then in August 2006 and the third one in April 2007.

[32] The evacuation advisory was initially enforced on the 24th by the decision of the former village mayor, and changed to compulsory evacuation on the 25th (Yamakoshi District Office, 2009).

The last group of displaced residents left temporary housing by the end of December 31, 2007, when the evacuation order was finally terminated (Yamakoshi District Office, 2009b). In contrast to *Higashiyama* communities, *Yamakoshi* communities took one more year to initiate reestablishing their lives.

3.4.3 Disaster assistance provided in resettlement

Almost all *Nijumurago* communities were provided with similar opportunities to use the public disaster assistance as aforementioned. Nevertheless, there are two main differences that affected individual households financially in recovery, between *Higashiyama* and *Yamakoshi* villagers. One was the resettlement programs provided by the local governments, as explained above. The other was an optional insurance benefit paid out by the Japan Agricultural Cooperative (JA) for building damages (*Tatemono kosei kyosai: Tateko*). Because many households in the *Nijumurago* area are engaged in farming, a significant proportion of households had purchased this insurance. The reasons for emerging differences in both the resettlement program and insurance pay are solely because of districts being managed differently by two local governments.

The differences in benefits resulting from the distinctive evaluation methods for *Tateko* insurance led insured villagers to dispute the credibility of the Cooperative, as the majority of customers in *Higashiyama* who had purchased the policy were evaluated to be paid only half of what those in *Yamakoshi* were able to receive. This difference emerged due to the timing when the building damage diagnosis was implemented – for *Higashiyama*, it was done quite early after the earthquake, before the winter began. As a result, most of their building damage was diagnosed as damage caused by the earthquake, which made the insurance liable for payment of 50% of the premium, even if it was totally damaged, in the policy. On the other hand, residential buildings in *Yamakoshi* were diagnosed as damaged by accumulation of snow, as the inspection was conducted after winter. With the mandatory evacuation enforced in the district, the insurance assessors could not make a visit before spring arrived (Asahi Shimbun, 2005). As the winter of 2004 had an extraordinary amount of snowfall, identifying the cause of damage, whether earthquake or snow-induced, became particularly difficult to do for the damaged buildings in *Yamakoshi*. Therefore, almost all houses were diagnosed as totally damaged having snow playing large part of building damage, which guaranteed100% of the premium as

stated in the policy. This difference in the payment rate of the premium contributed to a later dispute between villagers of the two districts. Furthermore, it is also important to underline that there were some households that did not receive any insurance benefits because they were not engaged in agricultural activities.

As earlier stated, communities in the two districts were provided with different types of community resettlement assistance, with different rationales by the *Ojiya* and *Yamakoshi* governments. *Ojiya* City decided to push for collective relocation for *Higashiyama* District, utilizing the collective relocating program. *Higashiyama* households that construct homes will benefit financially if they decide to relocate to the government prepared land, which includes: i) the price of land costing 60% less than market value, and ii) financial assistance by the local government up to US$ 600 thousand (JPY6.5 million) to take over the interest on housing loans regardless of its form by purchase or construction (Niigata Nippo, 2006). Meanwhile, the *Yamakoshi* village government insisted on repopulation of the six most-devastated communities through the district improvement project program. *Yamakoshi* communities that decide to use the program will benefit financially, on condition that the government will be the one to purchase the land and reorganize the land parcels. The rates of assistance will be 50% for debris (blighted structure) removal, 67% for housing construction, 50% for land purchase, and 50% for construction of community (shared) buildings (Ministry of Land, Infrastructure and Transportation, 2004c; Nagaoka City, 2008). Lastly, to clarify, communities were able to avail themselves of either one of the collective relocation program or residential improvement program, to relocate or return, provided by the local governments. They could not use two programs in a community. The reason for this is because the nature of governing styles of Japan only allows collective procedures, intending to provide equal support to all.

3.5 Post-resettlement: Change in demography

More than four years after the earthquake, *Niigata* prefecture (2008) reports that the *Chuetsu* region is rehabilitated for the most part. The region has not only reconstructed housing and infrastructure, but also reinitiated consensus building activities and actions toward community development. People that needed permanent housing have settled into new homes, and most of the industries, whether agricultural, livestock, or commercial, are back in operation. Infrastructure is also largely rehabilitated. Moreover, recovery actions – including consensus

building and organizing processes, such as reestablishing agricultural cooperatives, developing programs of actions to revitalize regions (e.g. eco-tourism projects, product merchandizing projects), and activities toward community development, have been reinitiated in some of these mid-mountainous areas (Niigata Prefecture, 2008). Surprisingly, however, the contrasting resettlement strategies of the *Ojiya* City and *Yamakoshi* Village governments adopted in the *Nijumurago* area did not make much difference in household resettlement decisions. Both the *Higashiyama* and *Yamakoshi* districts had a 52% return rate of the households, despite the fact that two different strategies, to relocate and to repopulate, were promoted (Sawada, 2009).

With respect to the collective relocation program provided by the *Ojiya* City government, 5 out of 10 *Higashiyama* communities that existed in the pre-earthquake period used the collective relocation program. Two new sites were prepared in *Ojiya* City as relocation areas, in *Chiya* and *Sanbushou,* located in flatlands close to the *Higashiyama* District. These two sites are located in close proximity to each other, and approximately 5 miles (8 km) away, or about a 15-minute drive, from the *Higashiyama* District center. The *Chiya* settlement site is larger than the *Sanbushou* settlement site, 28 units of which (including 9 affordable housing units), out of 103 units, are occupied by the former *Higashiyama* villagers. The latter settlement, *Sanbushou*, is smaller, having only 13 units occupied by two communities from *Higashiyama* District.[33] The rest of the former *Higashiyama* households that did not either return or relocated to these new settlements have relocated to other places without any support from the government.

As for the *Yamakoshi* district, five out of six targeted communities used the district improvement program at some scale. The government purchased a piece of land for one community that decided to return, so that the new residential site will be constructed on the nearest possible site to the original ones. The government, on the other hand, only partly purchased lands for the other four communities, because they could not largely support these communities that declined to rearrange the community with the program that support repopulation. In the latter cases of communities, the government constructed two to three units of public housing in each community using the benefit of this program. Throughout *Yamakoshi* district, 35 units of affordable housing were constructed in several communities separately, which is different in design from *Ojiya* City's construction that all housing units built in one

[33] This settlement does not have any affordable housing units.

site.[34] Sixteen (16) out of 35 units were constructed in the most devastated five communities (Nagaoka City, 2008). The rest of the former *Yamakoshi* residents that did not return found a place to live outside their original community without having any support from the local government.

One interesting phenomenon to underline upon villagers' return is that almost all returnees of either *Higashiyama* or *Yamakoshi* district resettled to their original community – no households transferred from one community to the other within the *Nijumurago* area. A *Yamakoshi* government official commented:

> ….long history has already shaped the relationship of the communities – some of which are good but the others are not. Although *Yamakoshi* had the nationally famous slogan of 'Let's go back to *Yamakoshi*', when the villagers say those words, for them, it meant, "Let's go back to our original communities." In fact, there are only two households that resettled into different communities in *Yamakoshi*.

A similar phenomenon, whereby few returning households switched communities, is also apparent in the *Higashiyama* District. This reveals that communities are generally very cohesive, and changes or adjustments are discouraged, even after a drastic event.

Owing to the earthquake and succeeding displacement, *Nijumurago*'s population has drastically declined, as the household return rates show. According to the data of 2004 and 2009,[35] the population of *Higashiyama* decreased by 51%, from 1,101 to 543, while the total population of 6 districts in *Yamakoshi* decreased by 54% from 485 to 224, before and after the earthquake. The population of the *Nijumurago* area was already in constant decline even before the earthquake; however, it was less drastic, with a decrease of 6% for *Higashiyama* District and 2.4% for the entire *Yamakoshi* District[36] between 2000 and 2004. In post-earthquake 2009, the *Yamakoshi* district is particularly faced with a high concentration of elderly people, increasing to 42.2% from 37.2% in 2004,[37] while *Higashiyama*'s elderly proportion decreased from 29.7% in

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[34] Distribution of the affordable housing is as follows: *Takezawa*, 10 units; *Tanasuhara*, 5 units; *Katsuraya*, 4 units; *Yubu*, 2 units; *Kajigane* 2 units; *Naranoki* 3 units; *Okubo*, 3 units; and *Kogomo*, 6 units.

[35] Rate of population decrease for entire Yamakoshi is 35.15%.

[36] Data for six communities are unavailable.

[37] Six (6) districts of *Yamakoshi* are particularly facing a high rate of elderly population□51% in year 2009. Rate for 2004 is unknown.

2004 to 28.7% in 2009.[38] With population decrease induced by the earthquake, the *Higashiyama* district's demographic change is suggested as being accelerated to what it would have been in about 30 years (Review Committee of Higashiyama Communities, 2008). The earthquake indeed caused both districts to lose population at a much faster rate than the normal out-migration.

3.6 Conclusion

This chapter reviewed how the two districts of *Higashiyama* and *Yamakoshi* share similar culture, economy, and social characteristics by historically belonging to the *Nijumurago* area, but had different administrations by two local governments. It highlighted the region's decline, consistent with the national trend beginning in the late 1980s, and then the regional sustainability was further threatened by the devastating earthquake that occurred in 2004. The *Nijumurago* villagers were forced to be displaced to flatlands in the cities for two to three years. In supporting affected households' return to normal lives, national and prefectural governments provided similar types of assistance to the displaced, with uniform criteria to support villagers' resettlement. Differences, however, became notable in several aspects during the planning and implementation processes for communities to recover, because the *Higashiyama* and *Yamakoshi* districts were differently administered by two local governments.

Although local governments supported two different types of resettlement of *Nijumurago* villagers – one to relocate and the other to return – to better sustain their regions, the household return rate of the districts were both 52%. This unique outcome reveals that relocation and repopulation policy itself was not as functional as local governments intended. Rather, different planning processes, including timing of planning decisions and actions by the government, the community processes in making resettlement decisions, and perhaps location and conditions of displacement, are intertwined, resulting in an unexpected outcome of post-earthquake resettlement. It is therefore important to understand: i) how the affected population decided on their resettlement, ii) how planning processes influenced their decisions and current status, and iii) what are the current conditions of communities after resettlement for both relocated and returned communities. By observing the influence and interrelatedness of

[38] All population data for both Higashiyama and Yamakoshi districts are provided by *Ojiya* City and *Yamakoshi* district government of *Nagaoka* City in 2009.

these planning processes to resettlement decisions and to post-resettlement outcomes, policy providers and planners can draw lessons to better assist affected populations.

CHAPTER 4. FLATLANDS OR MOUNTAINS? RESETTLEMENT DECISIONS OF *NIJUMURAGO* VILLAGERS

Both *Higashiyama* and *Yamakoshi* villagers were displaced to flatlands of *Ojiya* City and *Nagaoka* City for a period of up to two and three years, respectively. Affected community households were provided with similar assistance from national and prefectural governments in restoring their livelihoods. Several differences, however, emerged during the course of resettlement, mainly due to the different administrations that they belong to. One of the salient distinctions was the resettlement policies provided by the two local governments; the *Ojiya* city government favoring relocation, and the *Yamakoshi* village government[39] supporting repopulation. However, the return rate of households to *Higashiyama* and *Yamakoshi* districts were both 52%, regardless of this difference.

This part of the research tries to unpack villagers' resettlement decisions in light of the different policies of the two governments by observing five communities that are either relocated, returned or disintegrated. The content analysis used in this section particularly analyzes the data of 48 samples collected in semi-structured open ended interviews. The 48 samples are from 8 district representatives and 40 community members who either returned or relocated.

4.1 Community relocated, returned, and disintegrated

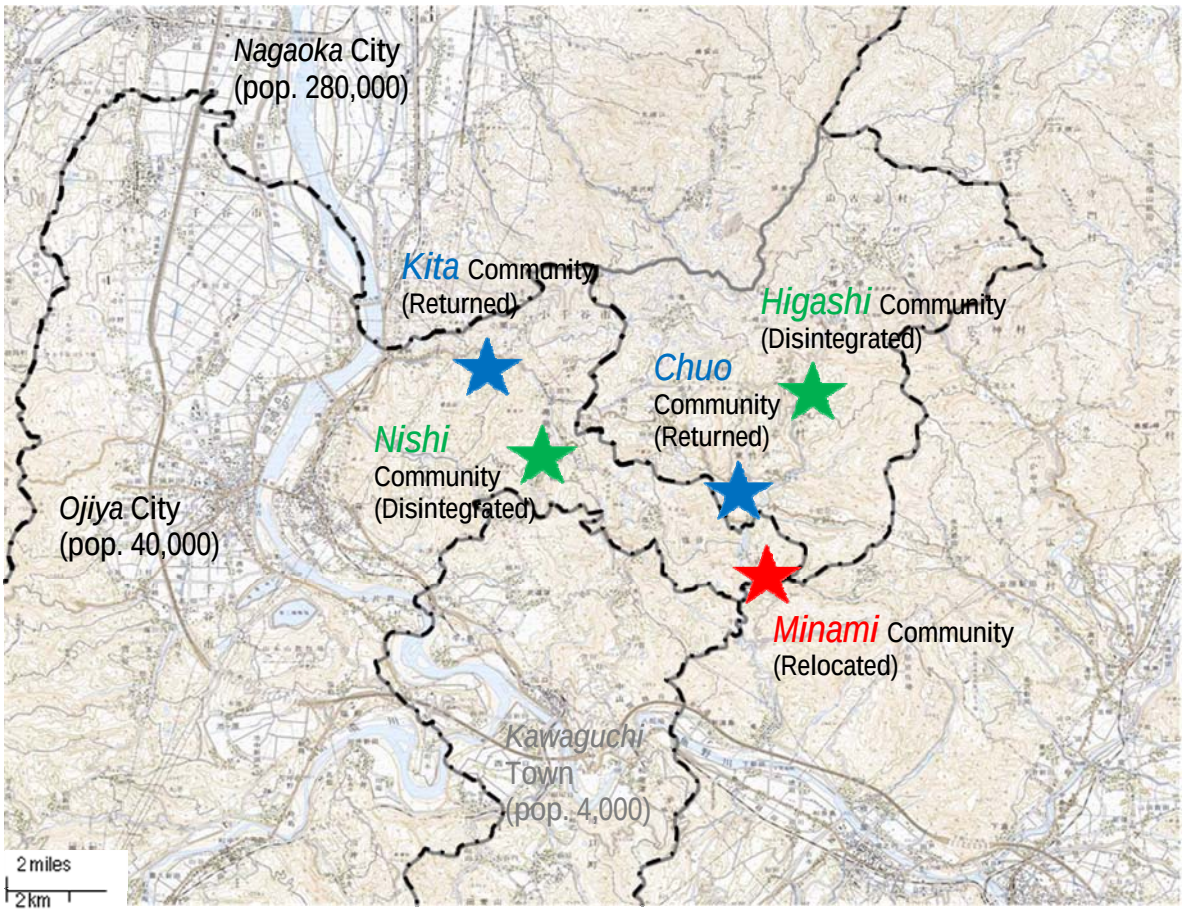
4.1.1 Five targeted communities

Although the household return rate is 52% for both the *Higashiyama* and *Yamakoshi* districts, resettlement decisions, between relocating and returning, by individual households were made under different circumstances and rationales. To understand the reasons that influenced village residents to make a decision after temporary displacement to urban areas, five communities are targeted for detailed observations. These five communities, *Minami*, *Kita*, *Chuo*, *Nishi* and *Higashi*, have different resettlement patterns after displacement, which can be grouped into relocated, returned, or disintegrated. The relocated community, *Minami*, had all households leaving the *Higashiyama* District to *Ojiya* City, making the community a 0% return.

[39] *Yamakoshi* Village merged with *Nagaoka* City in April 2005, five months after the earthquake. Currently, the former *Yamakoshi* government is functioning as the *Yamakoshi* Division of the *Nagaoka* City government. The division still has independent management, particularly on issues related to earthquake recovery.

The two communities of *Kita* and *Chuo*, belonging to the *Higashiyama* District and *Yamakoshi* District respectively, are the returned communities, the former with a return rate of 100% and the latter, 69%. Two other communities, *Nishi* and *Higashi*, also belonging to *Higashiyama* and *Yamakoshi* districts respectively, are the disintegrated communities, with return rates of only 29% for the former and 41% for the latter (see Figure 4.1).

Figure 4.1 Five targeted communities



Note: This map partially uses map of Ojiya (1:50,000) and map of Nagaoka (1:50,000) published by Geospatial Information authority of Japan

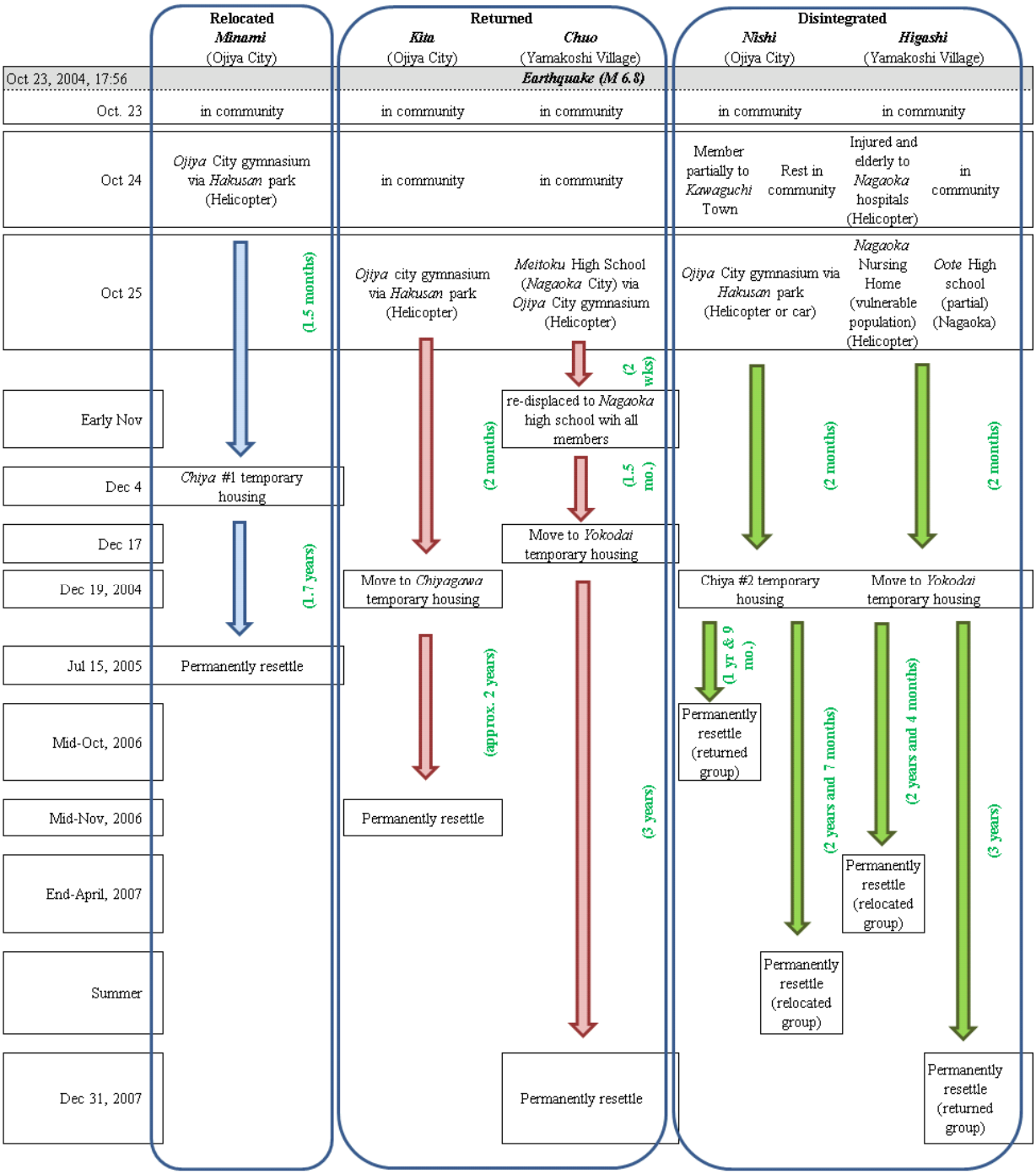
Although most of the communities in the *Nijumurago* area share common physical, social, cultural and economic conditions, each of them has some differences upon close observation. Such differences were born and nurtured out of dissimilar histories and characteristics of each community that have influenced villagers' livelihoods. These differences have largely affected the emotional aspects of villagers across each community in the *Nijumurago* area. Villagers in

each community thereby reacted differently to the earthquake, resulting in outcomes of varied resettlement decisions.

4.1.2 Major milestones for five selected communities during stages of emergency and temporary evacuation

Overall, five selected communities had similar displacement paths in post-earthquake phasing. Communities first spent several nights in their respective original locations and were then evacuated to either the cities of *Ojiya* or *Nagaoka* to settle into temporary shelters. They were subsequently displaced to temporary housing, also prepared in cities where communities belong, which lasted up to three years. Nevertheless, each community's experience was different; some had simpler paths while others had more complicated ones that they followed (see Figure 4.1).

Figure 4.2 Major milestones of five selected communities during post-earthquake resettlement phases



4.2 Community relocated

4.2.1 Community *Minami*

Community *Minami* is one of the communities that managed to settle into a new relocation site at the earliest time. The relocation process was community-led, although spurred on by a community leader who had known some key officials of *Ojiya* City. The community was extremely cohesive, which helped its members to decide on and pursue collective relocation at an early stage, after their temporary evacuation to the nearby *Ojiya* city center. In restoring their lives, members of community *Minami* used assistance and recovery programs of: i) the fund for supporting livelihood restoration of disaster victims (*Hisaisha seikatsu saiken shienkin*) (hereinafter livelihood restoration fund) and ii) support from public donation (*Gienkin*) (hereinafter public donation), both of which were equally provided across the victims of the *Chuetsu* earthquake with qualification criteria.[40] Furthermore, community *Minami* decided to use "the collective relocation promoting program for disaster prevention" (*Bosai shudan iten jigyo*) (hereinafter collective relocation program) provided by the city government. Lastly, almost all members of this community were able to receive the full amount of coverage on their mutual relief insurance on building reconstruction (hereinafter *Tateko* insurance).

Community and the earthquake

Owing to its geographic isolation and the size of the community, community *Minami* has long been marginalized and the least developed community in the *Nijumurago* area prior to the earthquake. The community was located in one of the deepest areas in the mountains,[41] and access from outside was difficult especially during the winter season. The road to the community was paved, but narrow and curvy, allowing only one car passing at a time. The land available for cultivation was also very small, and therefore the production was only enough for home consumption. Living in this community was particularly depressing during the winter, as the time of daylight was very short with the surrounding mountains blocking the sun early. Villagers in *Minami* community therefore had long followed the tradition of *Nijumurago* of

[40] As discussed in Chapter 3, the amount provided to individual households through livelihood restoration fund and public donation depended on the following criteria: housing damage, age of the household head, and the household income.

[41] The distance to *Ojiya* City is approximately 9.3 miles (15 km) by road, but the way is very mountainous, and the road is usually impassable during winter.

having household heads, generally men, taking seasonal work in the metropolitan cities (the Japanese term is *dekasegi*) and being absent from the community for more than half a year. This resulted in the women being left in the community to maintain the house and take care of their children and elderly parents and in-laws. Living under such conditions left them poor and vulnerable. The community was also the smallest in the *Higashiyama* District with 11 households (population 41) in 2004, before the earthquake happened. Furthermore, the proportion of elderly, above 65 years old, was high, at 34%.

When *Minami* villagers explained their resettlement decisions, almost all of them underscored the inconvenience of living in the former community. The difficulties were not only limited to commuting to the city, but also attending schools. Winter was the season especially difficult for schoolchildren and their parents, as commuting became difficult with the snow. As a result, many parents found a boarding house for their children so that commuting could be minimized. Attending school, however, was becoming a difficult task for the children of this *Minami* community even during the snowless season, as public schools had closed down one after the other after the year 2000 in the wake of rapid depopulation in the *Nijumurago* area. For years, children of *Minami* community commuted to a school in *Yakamoshi* District by crossing a district border, as this community was located on the fringe of the *Higashiyama* District. The children would normally walk to school; however, the community was faced with the need to organize a school bus system when this school closed down.

Many community members also expressed feelings of being marginalized from local governments and neighboring communities. A community member described his anger toward both the governments of *Ojiya* City and *Yamakoshi* Village regarding his son's schooling; both local governments failed to inform his family about important school details, such as how to get to school and when school begins. He further referred to a response of *Ojiya* City officials as discouraging when, during the emergency evacuation of 2004 earthquake, no city officials knew about the existence of his community upon being asked about the safety of other village members. On a similar note, a community leader explained, when interviewed, that he has only bitter memories of his former neighborhood, as he and his family have always felt oppressed living there. He claimed that their opinions and comments as a community were always ignored in any meetings held in *Nijumurago*.

As the byproduct of such emotional oppression by outsiders, *Minami* villagers have always had an informal consensus that members are always ready to support each other at any time. Although minor complaints and dissatisfactions exist, almost all of them perceive their members as the main resources they may rely on, referring to them as extended family members. In addition to the strong cohesion, this community was financially privileged with its engagement in traditional carp (*Koi*) breeding; before the earthquake, more than 80% of the households were engaged in this business. This suggests that members of the community had gained some financial benefits in the past, especially when the *Koi* industry was booming. This extra margin has perhaps allowed the members to pay *Tateko* insurance, together with strong community information sharing in recommending members to collectively join. Although paying their yearly premium was not always an easy task for all members, this insurance largely helped save them from possible financial debts after the earthquake. Meanwhile, the *Koi* breeding business that the community expanded had also brought opportunities to socialize with urbanites, which made it easier for them to imagine living in the flatlands.

Surprisingly, however, prior to the earthquake community members had never thought of leaving the community, despite their bitter experiences and memories. Many villagers, particularly those in their late 40s and older, had given up hope to live in the flatlands and were resigned to continue living in the mountains to look after their parents and community. However, these aged generations were supporting the younger generation, particularly their children, to be able to leave the mountains upon getting a job, as they understood surviving in the depopulating community was difficult. As parents, they did not want their children to experience the difficulties and oppressions that they had experienced in the past.

Earthquake impact

The impact of the earthquake was quite devastating in community *Minami*. The majority of villagers explained that their houses as well as facilities for *Koi* breeding and farming were totally collapsed. Their limited lands for housing and vegetable growing in the community had also fallen into a river that runs through the community, after continuous landslides that occurred with aftershocks. Some houses and facilities that survived from the several earthquake shocks, however, were subsequently damaged by the mud and floodwater that invaded their house or by the accumulated snow during the first winter.

Emergency responses, early displacement, and temporary visits to the former land

The emergency evacuation stage for community *Minami* was the shortest among all other observed communities in *Nijumurago* area. After the earthquake struck early in the evening on the 23rd of October 2004, all community members gathered in a place to spend the night. The next morning, they had breakfast together; then helicopters arrived to evacuate them to *Hakusan* Park in *Ojiya* City where they were subsequently transferred to the *Ojiya* City gymnasium, which served as the temporary shelter for them. Villagers stayed in the gymnasium for approximately a month and a half, until December 4. Life in temporary housing for *Minami* community members, following their stay in temporary shelter, began on the following day and lasted until July 15, 2006. The duration of their stay was approximately a year and seven months.

While in temporary shelters and temporary housing, villagers put utmost effort into visiting their former land to save their lands and houses. During the first two months, villagers visited their former community twice by helicopter. In the following stage of temporary housing, villagers initially attempted to visit often, but soon found it difficult, as rehabilitation of roads and bridges was delayed due to the community's marginal location. Soon afterward, villagers had to accept the fact that with snowfall accumulating on the roofs of their houses, and not being able to visit frequently to clear away the snow, their houses were bound to collapse. Consequently, villagers gradually began to give up and decided to abandon their properties back in the community.

Minami decision to relocate

The decision to relocate to the flatlands was made at an early stage in this community. Because the majority of the members view their former community with disfavor, due to its history of marginalization and difficulty of living during the winter time, making a final decision to leave the former community site was relatively easy. The leader of *Minami* community recalls this time in their lives:

> I believe that the majority of community members were not willing to return to the former community site even from the very beginning [when the discussion on relocation began]…we did not even think that we could return there because

> we lost the majority of our lands with the landslides. Houses and agricultural facilities were also totally damaged. (Male, in his 60s)

Community members explained further reasons in detail for deciding on relocation; some attributed their decision to the community's hazards with possible floods, landslide threats, and heavy snow accumulation. Others revealed their disfavor toward their community from the history of marginalization, from both geographic and social aspects. With such circumstances, the idea of using a program of relocation introduced by their leader seemed to be a good solution and, at the same time, an opportunity for them to leave the mountains for good. With both community leadership and cohesion of the members, decisions and processes to collectively relocate were then implemented smoothly. Following are comments made by the villagers to further explain how their disfavor toward their former community site influenced their decision to relocate:

> We lived near the [*Imogawa*] river and it was clogged by the landslides…and thought we can't live here any longer. At that time, I was thinking about leaving the mountains for the City, renting a room in an apartment. Luckily, the leader gave us an idea of using subsidies for collective relocation while in temporary shelter, so we just decided to follow him. (Female, in her 60s)

> Our house was flooded by a landslide disaster just two years after having built it 30 years ago. I didn't want to return to the community because this was the second time it happened [house being flooded]. (Male, in his 40s)

> We thought that the clogged river [by the landslide] would cause flooding sooner or later. Furthermore, we thought we can't return to the community when we were evacuated, because our community was ruined so badly. So deciding to relocate was not as hard as it sounds. I also knew that everyone from the community was relocating together, so it wasn't that bad. We have a good relationship. (Female, in her 60s)

> I did not hesitate at all to leave the place although I was born and raised there, because I never had a good experience living there. The snow made life so difficult. And so my husband had to live in the city to be able to work and was gone for more than half a year annually. I then had to rely on public transportation to do everyday things, but the bus [for commuting between the city and the community] does not run up to our community, so we always had to walk two to three hours from the last bus stop…furthermore, our place has always been marginalized … (Female, in her 60s)

> We decided to relocate because our community leader presented to us a relocation program. We can't directly talk with the city government, but he could. So we relied on him and just followed his lead with other community members. Even if we decide to return with only one or two other households,

> living in the mountains would be so difficult. Furthermore, our rice paddies and *Koi* breeding pond were destroyed so badly that reestablishing a living back there seemed just impossible. (Female, in her 50s)

All of these responses suggest that the earthquake damage made them simply give up their way of living in the mountains and live in the flatlands. Yet, their perceived oppression had nurtured the community, creating a strong sense of cohesion, which was also another factor for their decision and eventual collective relocation. Because the community was well-organized to take a stand on relocation, they managed to find a convenient place in *Ojiya* City.

The collective relocation program was indeed beneficial for the *Minami* community financially. Yet, as a respondent suggested, because her family was thinking of relocating to the flatlands in any case, many villagers would have left the former community even if the policy was not provided. Furthermore, as other respondents commented, returning to the former place would have made no sense if only a few households were to be returned.

4.3 Community returned

4.3.1 Community *Kita*

Kita community had a 100% household return rate, the highest return rate of all *Nijumurago* communities. Throughout the resettlement process, this community had minimum interactions with government officials that supported relocation; instead, there was abundant communication maintained only among members. The majority of households had a definite decision of returning from the moment they evacuated to *Ojiya* City, although some totally lost their houses and lands to the landslides triggered by the earthquake. A few thought of relocating outside this community after losing their lands to the landslides, but other *Kita* members were able to persuade them not to relocate. This collaborative manner of community *Kita* was influential in convincing all members to return. As for assistance, the livelihood restoration fund and public donation were provided to this community, in equal manner to other earthquake affected households. As for *Tateko* insurance, households that had purchased the policy received 50% of the amount of their insurance coverage. The community, however, did not use any other resettlement programs because their decision to return was contradictory to the available *Ojiya* City support.

Community and the earthquake

On the average, community *Kita* has a younger population than any other communities in *Nijumurago* area. The proportion of elderly members was 24.6% in 2004, which was the least among the five observed communities. The size of the community was also small □16 households with a total of 65 people. Livelihoods of community *Kita* were different from other communities, with younger working-age on average, as the majority of the villagers were employed by firms located in *Ojiya* City. As the city had some branches of nationally known companies, including Panasonic and Sanyo to name a few, it was natural for the younger members to seek employment in these companies after having studied in the city. Meanwhile, there were other populations working in the community; the older generation participated in agricultural activities, and other members operated businesses including *Koi* breeding. Besides working, younger males were enthusiastically engaged in bull-fighting activities by owning, breeding, and training bulls. They also gathered frequently over the years to officially participate in the bull-fighting, and also unofficially share time with other bull-owners on a daily basis. These sets of activities helped the young people to develop a shared identity and pride, and also contributed to nurture networks with people outside the community.

Regardless of their severe climate and location, community *Kita* is privileged in several aspects compared to many other communities in the *Nijumurago* area. First, the community is located near the *Higashiyama* District center, where many public facilities such as a post office, a City office branch, and an elementary school are located. The only bull fighting facility in the *Higashiyama* District is also near this community. Second, the community is only nine kilometers (5.6 miles) away from the *Ojiya* City downtown, closer than most other communities in the *Nijumurago* area. Thirdly, the community is located near the national and prefectural roads, which are consistently well maintained in all seasons. This location was especially advantageous during the winter, as the roads are cleared of snow for smooth vehicle travel. The majority of members therefore were commuting to the city, even during the winter time, although the travel time was a little longer than other seasons. Furthermore, villagers in this community have always benefited from having public infrastructures developed in their community way ahead than any other *Nijumurago* communities, as *Kita* community is located closer to the cities.

Community *Kita* is also unique from other communities in that they had a mix of villagers who were born and raised outside this community. Some households even returned to the community after living and working outside *Nijumurago* for a few decades. Because the community had members with various backgrounds and had privileged locations and public services, not many members spoke about negative emotions toward their community. Yet, *Kita* community was still acting collectively, although there were no distinguishable leaders or hierarchy who organized the community. Usually, all members take turns filling in three positions, a leader and two members, in community organizations responsible for community health and agriculture. Additionally, women had networks that are relatively strong across the community, although there were no identified organizations organized by them before the earthquake.

Although no community members had thought about moving out of the community, they were concerned about regional decline prior to the earthquake. Women were particularly aware and were concerned about population decline, as they had to face the closing of schools. Yet, no one in the community could think of actions that could be taken to reverse the decline.

Earthquake impact

Similar to other communities in the *Nijumurago* area, the earthquake impact to community *Kita* was quite devastating. A large proportion of houses totally collapsed, either directly by the earthquake or indirectly by landslides induced by the seismic shaking. Lands that were formerly used for cultivating vegetables were also damaged. Pavement of the roads in the community was torn off, creating myriads of disconnections. Moreover, a historic temple that exists in this community was damaged heavily, which provided further emotional stress to them.

Emergency responses, early displacement, and temporary visits to the former land

Members of *Kita* community took collective actions from the initial stage after the earthquake. The majority of people gathered in their community center to spend two nights, on the 23rd and 24th , after the earthquake, because the building survived the first shock and subsequent aftershocks. Elderly people who were incapable of walking alone were transferred to the community center by the school bus that was kept in the elementary school. In the

morning of the 25th, the 3rd day after the event, members of the self defense army came to evacuate villagers by helicopter. The elderly and sick were first transferred, and the rest were brought to *Hakusan* Park and then to the *Ojiya* City gymnasium by the evening of that day. Approximately 2,800 people were evacuated to the gymnasium, where the majority of *Kita* community stayed together until December 19, for approximately two months. Community *Kita* then collectively transferred to temporary housing where members stayed until mid-November 2006, for a little less than two years.

With the evacuation advisory enforced by the City, villagers could not visit as frequently as they wished to, especially during the time in temporary shelter. The City issued visiting permits to *Higashiyama* villagers in order to control entry into the area – to avoid further injuries and loss of life of the villagers as well as to regulate entry of outsiders into the region.[42] The number of permits initially issued by the City was less than the number of households; villagers could not visit their homes freely during this stage. Once they moved to temporary housing, with the City providing more permits to visit community then, they were able to visit more frequently and assess their housing situation. With frequent visits to the community throughout the displacement, houses that survived the earthquake shaking also survived the snow. Overall, *Kita* villagers were better positioned for frequent access to their community, since it is near to the city center. Rehabilitation and reconstruction of infrastructure in *Kita* were completed sooner than other communities in *Nijumurago* located deeper in the mountains.

Kita Community's decision to return

The decision to return was made at an early stage. Many villagers simply wanted to return, because they found it convenient living in their community, having good access to the city and to other public services. Furthermore, this community is inherently cohesive, which is a comfort to community members. Several interview respondents commented that *Kita* villagers had a consensus about collectively returning during their stay in the temporary shelters, and so neglected to be involved with the collective program that the *Ojiya* City government

[42] Several *Ojiya* city officials commented on the dangers of going back to their communities. First, access to *Higashiyama* District, with damaged roads and bridges, needed special care distinctive from the normal times. Overall area of the district also continued to be prone to landslides. Second, there were quite a few cars belonging to non-*Niigata* prefecture residents seen straggling in *Higashiyama* District after the earthquake.

provided. Individual households had felt a sense of responsibility to collectively return, in order to sustain their small community.

Reasons to return stated by the community members were essentially linked with comfortable living in the mountains. Nobody suggested anything about geographic hazards or emotional marginalization and oppressions that residents of *Minami*, expressed. Comfortable living in this community mainly has two meanings: less living expenses and having pleasure in life. Villagers particularly involved in bull-fighting gave this activity as their reason for going back. At the same time, working respondents replied that they wanted to go back to continue their businesses, and parents with school-aged children took this into account in deciding to return. While the majority of respondents in this community *Kita* commuted to cities, relocation was not an option they considered, because commuting was not very difficult. This is what respondents had to say about making the decision to return:

> I thought of living in the city, but it was cheaper to live back in the mountains. I also feel more secure in the community with people that I know. I would feel out of place in the cities. (Female, in her 30s)
>
> Living in the city will cost you more; besides, I like living in a place where I belong. I was very happy when neighbors persuaded me to return when I was thinking of relocating [to another community]. (Male, in his 50s)
>
> First of all, my house was not totally collapsed. So I didn't have any reason to leave; besides it would cost more to live in the city. I commute to the city without problems, although having a driver's license is a must. Furthermore, I wanted my children to keep commuting to the elementary school [in this community] where they belong. (Male, in his 40s)
>
> I enjoy my life in the mountains, so I didn't think of moving into a city at all. In fact, we [family] returned to this community a few years back from a metropolis to enjoy rural life. So our final decision was made back then. (Female, in her 60s)
>
> My son owns bulls [for fighting]. He really wanted to come back to continue this activity. We lost our land from landslides during the earthquake and thus preparing land to rebuild a house was very difficult, but we decided to do so. (Female, 60s)
>
> Because I own a business here, there were no reasons to think about relocating. This community is where we belong, so we just thought of returning as soon as possible. Rebuilding our business was financially very difficult, but we did not hesitate to do it. (Male, 30s)

With an early collective decision to return, the household return rate of *Kita* community was the highest among all communities in *Nijumurago* area. The community's collective nature has perhaps played an important role in this result, as the community never had a leader who strongly appealed for returning. Few villagers who lost their former residential land had difficulty in making the decision, as they were required to find another piece of land to purchase either in the community or in a place completely new for home construction. Nevertheless, they decided to return at an early stage while in temporary shelters. The returning procedure, however, turned out to be financially burdensome and time consuming with land use and public infrastructure issues,[43] yet no one gave up on their initial decisions. Community members simply wanted to return because they have always felt that living in the community *Kita* was comfortable.

4.3.2 Community *Chuo*

The rate of return for the *Chuo* community was the highest among the six devastated communities in the *Yamakoshi* District, with 69% (20 households) returning. There was no distinguishable leadership or specific actions to return provided by the community or the local government, but the majority eventually decided to return. The community was provided with a small-scale residential district improvement program (*Shokibo jyutaku chikutou kairyo jigyo*) (hereinafter residential improvement program), which is designed to redevelop degraded residential areas. Opinions of the community members diverged regarding its use; there were households supporting this program to totally rearrange the residential parcels, whereas other households opposed the use of this program and aimed to simply return to their original land. Finally, the community decided to rebuild their homes on the original lands by dropping the idea of using the program.[44] Consequently, the assistance that community *Chuo* used was limited to the livelihood restoration fund and public donation, both of which were similarly provided to

[43] The *Nijumurago* area, including this village, is mainly rural. The majority of the land was therefore classified agricultural, except for some residential areas where houses were formally built. With this land use classification, villagers who lost their former land had to follow a process of land use change that involved land survey and other administrative protocols. Yet costs for these additional procedures had to be borne by individual households because there was no governmental support for such things. They further had to bear the construction fee for the repair of the aqueduct, because it was not the responsibility of the local government.

[44] The fund was still minimally used in the community for constructing affordable housing by the local government. However, the majority of *Chuo* community members did not benefit from this program.

other affected communities in the *Chuetsu* region. The *Tateko* insurance paid 100% of the amount of insurance coverage to this community, as damage assessment had taken place only after the winter season, following the damage wrought by snow on the houses. However, there were quite a few households that were either not insured or had received minimum insurance benefit.

Community and the earthquake

Community *Chuo*, one of the *Nijumurago* communities belonging to *Yamakoshi* Village (currently *Nagaoka* City), was an aging community having an elderly population of 38.6% in 2004. This community was also small populated by 29 households with 89 people. The *Yamakoshi* District itself is located deep in the mountains, and traveling to the nearest city, which is *Ojiya*, is more difficult for those living here than for communities in the *Higashiyama* District. However, having a national road directly connecting to downtown *Nagaoka* with a distance of about 15.5 miles (25 km) has enabled this community to develop a strong bond with *Nagaoka* City together with other *Yamakoshi* communities. As a consequence, younger generations working in offices are mainly commuting to firms and organizations in *Nagaoka* City. Nevertheless, the majority of *Chuo* members own a business breeding *Koi* or cattle as well as producing rice. The reason for this is due to the *Yamakoshi* Village rural development plan, crafted in 1972, that highlighted the development of *Yamakoshi* Village through strengthening *Koi*, bulls, and rice production and industries. The population of *Yamakoshi* Village was the largest in their history back then, which made the villagers optimistic about pursuing such a development plan. With several key personnel from community *Chuo* involved in pursuing these strategies, the community has also shaped its industry in accordance with the plan. Consequently, some households own a large-scale business of either one of the industries mentioned, while others have smaller-scale businesses operating at two or three locations. Terrestrial conditions of this community, however, were not necessarily beneficial for agribusiness, as availability of land was one of the smallest among other *Nijumurago* communities. Some households, therefore, extend their businesses outside the community in either or both neighboring communities and the *Nagaoka* area.

Yet the community is in a privileged location. There is a national road that runs through the community, making outside access to this site a relatively easy one. *Chuo* community also

had an advantage with national road maintenance service, particularly during the winter for snow plowing. Furthermore, the community had public services including a post office and an elementary school for 23 years.[45]

Chuo community is a tightly-knit community, with several key representatives playing an important role also in *Yamakoshi* District. Although community members take turns filling the positions in community organizations, in a similar manner to *Kita* community, key personnel have often played a role as unsung leaders of the community. Yet, community members have also had a strong horizontal network extending inside and outside the community, some of which are developed through bull-fighting and *Koi* breeding activities. Many interview respondents expressed the importance of mutual support within the communities, revealing the cohesiveness of this community. On the other hand, this community had also welcomed some households that were permanently returning from metropolitan cities after having left the community in previous years. As for the aspect of community sustainability, members of this community have always retained pride in their continued cultural traditions on *Koi* breeding and bull-fighting. Such favorable response toward their community made both elderly and younger populations aware of the need to be continuously engaged in joint community activities. This community, therefore, has historically worked jointly with community members and neighboring communities; however, the elderly are recently concerned about the diminishing strength of such ties due to population decline and lifestyle changes.

Earthquake Impact

Damage owing to the earthquake was devastating for this community: A large portion of houses in the community was heavily damaged, *Koi* breeding ponds and facilities collapsed, and some lands slid into the river that runs along the community. Many interview respondents commented that their initial reaction after they realized the devastation was to give up returning; almost all members expressed that such emotions were similarly shared with other members while waiting to be evacuated. Due to its devastation and geographic conditions, this community was one of the last communities in the *Nijumurago* area to be evacuated.

[45] The elementary school that opened in 1977 was closed in 2000 along with depopulation of the *Yamakoshi* District.

Emergency responses, early displacement, and temporary visits to the former land

Many people were injured and trapped inside collapsed buildings immediately after the first impact. That night after the earthquake on October 23rd went by quickly for the community as they were trying to save members in immediate danger. Members who were safe tried to stay together, but found it difficult to do so due to the limited availability of land in the community. Many members then spent two nights in their cars, as these were the only places with heat. Evacuation did not begin until the evening of the third day, when the helicopters began to reach the playground of the former elementary school. Upon evacuation, *Chuo* members were first brought to *Ojiya* City then transferred to a high school in *Nagaoka* City by bus. Later in the week, the *Chuo* villagers were again transferred to another high school in *Nagaoka* City as *Ojiya* City decided to rearrange the evacuation center by community. The community then stayed in the high school until December 17, for about a month and a half, until temporary housing was ready for occupancy. *Chuo* villagers lived in temporary housing for three years, the longest among all earthquake-affected communities, until the end of December 2007.

Similar to other displaced communities, *Chuo* villagers found visiting their former lands to be difficult in the early displacement stage while in the temporary shelter. Although the community members first had opportunities to visit home about a week after the earthquake, these trips only raised awareness of the risks of visiting their old community, which was in a devastated state. The village government therefore decided to prohibit community visits for another 6 months, until critical infrastructure such as roads, tunnels, and bridges was rehabilitated. For this reason, *Chuo* villagers did not have much opportunity to visit home during their stay in temporary shelter. However, with the passing of time, visiting permits were given that enabled households to commute frequently.

Chuo Community's decision to return

Making a final decision between returning and relocating took some time for the *Chuo* members. With the community devastation that was confirmed immediately after the earthquake, many villagers, at an early stage, could not see themselves returning in the future. Although some villagers had begun to understand the possibility to return after some time,

continued compulsory evacuation made it difficult for members to firmly decide whether to return or relocate. At the end, the majority of villagers decided to return, although reconstruction needed some additional time. The collective nature of this community, developed along with continued traditional activities, made villagers feel more comfortable about being back in the community.

As expected, *Chuo* villagers described their main reason for returning as comfortable living in the community with other members. Being comfortable, in their description, also included the financial aspect; living in the community secures their livelihoods by producing vegetables and rice that helps to reduce daily expenses. Furthermore, living in the temporary housing located in *Nagaoka* City for three years was an eye opening experience in which many could consider whether they would like urban living permanently. For the elderly population, living in the flatlands was particularly difficult, which made them decide to return in the end. For others, having businesses back in the mountains, or hoping to send their children back to school in *Yamakoshi*, helped them decide to go back as well. Following are some of the comments made by respondents regarding their decision to return:

> Although I initially thought returning was going to be very difficult due to the extensive damage, I eventually figured out there are other communities that suffered less [outside *Nijumurago* area but in *Yamakoshi* District]. Seeing these communities recover, I then gradually thought that we could return and then it was natural to be back – because I figured that my house could be renovated and I have [cattle] business here. (Male, in his 60s)

> I almost decided to go to the city because I lost my land … I thought 'if I had to buy land anyway, why not buy in *Nagaoka* [City]?'…. but [one of the] a community leader provided me [to purchase] a piece of land where I am currently at. In addition, I began wanting to show some support to the younger generation in the community after I heard they were coming back. We, as a community, had such a great coordination throughout the evacuation and displacement periods, and wanted to be of help. (Male, in his 50s)

> With the possible loan that we could get, we'd have a better home in the mountains[46]…also, because both of us [a husband and a wife] work in the city, it's nice to have grandparents around. They could take care of our children when we are not around. Children also liked the school where they were going and didn't want to transfer. (Female, in her 40s)

[46] The respondent explained that her father-in-law had a piece of land back in the community and therefore, her family did not need to buy land upon returning. Consequently, her family was able to invest all the monies prepared in housing construction.

> I didn't have money to live in the city … besides, I learned that living in the city is very boring – I asked to volunteer for carpentry work during the displacement period because I was terribly bored. They [construction companies] said that they can't hire me even as a volunteer because I am over 65. I then had begun to think that living in the city is terrible, because I am not needed anywhere and I will have nothing to do. (Male, in his 80s)

> We came back because we didn't have enough money to live in the City. We weren't insured with *Tateko*. My husband initially arranged to purchase land in *Nagaoka* to relocate, but then when we thought of rebuilding a house and *Koi* ponds, it was financially impossible. I think people who left the community were the ones financially privileged, while those who returned were poor. (Female, in her 50s)

Not all community members decided to return at once. Devastation of the community and compulsory evacuation for two and half years were some of the main reasons that hindered displaced members from quickly deciding to return and reconstruct. Their financial situation also made some households undecided between living in the flatlands or in the mountains. Yet many villagers eventually identified that going back to the community would be better for their quality of life, with trusted members in the community and less living expenses. Furthermore, the elderly particularly insisted that they would lose meaning in life without any activities in the community. They confirmed that they would be happier living back in the mountains, growing vegetables, breeding *Koi*s and bulls, and doing some work like minor house repairs and helping other community members. Meanwhile, village members who have businesses, those engaged in cultural activities, and those with children wanting to return, had already made a decision to return much earlier than others.

4.4 Community disintegrated

4.4.1 Community *Nishi*

The return rate of the *Nishi* community was least among all communities in the *Nijumurago* area. Only 11 out of 39 households returned □ a 28% return rate. The community then became one of the smallest ones in *Nijumurago* area after returning. All households made individual decisions to resettle without much interaction with other members. *Nishi* community's character had long been independent and separated, which perhaps influenced their individual decisions. Resettlement patterns of the community were completely divided into three types in the end; approximately one-third of the households returned, one-third

moved into the lands and houses in the larger site prepared by the *Ojiya* City in the flatlands, and the rest left for places completely different from other households. Assistance provided to the members of this community differed depending on the household decision, yet all of them had opportunities to receive support from the livelihood restoration fund and public donation. Returning households did not have any additional assistance from the local government, because their action was contrary to the relocation program the government provided. Collectively relocating households received collective relocation program assistance, if they decided to move into the land designated by the City. Individually relocating households were in the same situation with returning households, without any additional form of assistance. Meanwhile, *Tateko* insurance covered up to 60% of the amount of insurance coverage of households, yet not all of them were insured with this program.

Community and the earthquake

Community *Nishi* was one of the most populated communities in the *Higashiyama* District in 2004, having 39 households with 157 people. The proportion of elderly population then was 27%, which was relatively small compared to other communities. The community is in a privileged location, being close to the *Higashiyama* District center and downtown *Ojiya*. Therefore, villagers had better access to public services, including a post office and a branch office of the City government, which are located in the district center. The community also had an elementary school serving four neighboring communities until it was closed in 2000. Access to downtown *Ojiya* posed no difficulty as well, since it is connected directly by a national road. The road was well managed by the local governments, and so commuting to the cities was easier for this community than for other communities regardless of the season.

This community, however, has experienced inconveniences with public infrastructure for a long time, similar to other *Nijumurago* communities. For instance, a water supply system was not developed until 1997, despite frequent appeals of *Higashiyama* residents to the City government. Side-wells were used until then, but these often dried up during the summer due to the area's geographic condition. Well developed roads were also constructed only recently; a national road that reaches the community was not completed until 1975, while a prefecture road that runs through the community remained unpaved until very recently – the prefectural road was yet under construction when the earthquake hit, with one section just completed and the other to

be started.[47] Several households were affected by this road construction and were required to be relocated within the community; the majority of households in the first section had finished or initiated relocation at the time when the earthquake hit, while those in the second section were planned to be relocated to the former elementary school that closed.

Although *Nishi* community struggled with having public infrastructure constructed, modern development reached the community earlier than other *Nijumurago* communities deep in the mountains. This history had nurtured a strong bond with *Ojiya* City, which influenced the lifestyles of community members, i.e. being more adjusted to an urban lifestyle from their experience in the earlier years. To cite an example, some villagers recall that approximately half of youth of high-school age in *Higashiyama* communities attended school in the late 1960s, while *Yamakoshi* communities located deeper in the mountains only had less than a quarter. Easier access to the city with better roads and proximity was perhaps one of the major contributing factors to this high rate of school attendance by *Higashiyama* youth. As a consequence, more community members had jobs in the cities in earlier times than some other communities that were still isolated from development. Households in this community therefore managed both paid employment and self-employment by managing traditional work as a side business. Nevertheless, some villagers continued traditional working styles, specializing in *Koi* breeding businesses. Many business owners specializing in the *Koi* business, however, were shifting their business styles from small-sized production to mass production, in order to survive through the changes in the global economy. Consequently, many had extended their *Koi* breeding ponds outside their community to neighboring communities or to the *Nagaoka* area to meet the production demand.

Community *Nishi*'s households became more and more independent owing to the influence of *Maki* and *Koi* breeding traditions in the community's modernization process. The *Maki* tradition,[48] a local grouping system of households, remained strong in this community, so

[47] The completed section of the road is located on the entrance-side in the north of the community, in "lower" (*mura no ue*) part, as per *Nishi* members' description. Construction of this section was completed in 1999. The other section that was planned for initiating constructing was extending from the end of the "lower" (*mura no shita*) community into the "upper" community, where the community center was located.

[48] *Maki* is a cooperative body of farmers sharing livelihood, physically separated but living in one central compound (*Makioya*: Head of the *Maki*) and with other houses of farmers surrounding it. *Omodachi* is the household(s) that lives in the central compound responsible for the *Maki*. *Kobamon* are other *Maki* household members (*Ojiya* City, 1969).

that all communal activities and events in the community were organized with this group of *Maki*. Because this tradition was so strict in the community, intra-communal hierarchies and conflicts often emerged between insiders and outsiders. Historically, villagers who were born and raised in the community (insiders) had more power than villagers who came to live in the community later in their life (outsiders), and were the ones who could speak out and make decisions on community issues. Women who came to the community by marriage had no voice in this hierarchy. Such residuals of the *Maki* tradition in the community had gradually contributed to disengage individual households from the community. Furthermore, the *Koi* breeding tradition played a great role in the disintegration of this community's cohesiveness. Large discrepancies between households that were more successful and households that were less successful became obvious after the national and global *Koi* boom in the 1960s and 1980s. Households that were too business-minded were of particular worry to the rest of the members, because they often withdrew from or neglected to participate in community activities. Dissonance, therefore, emerged among community households, which further contributed to weaken community ties. Despite such orientation toward community disintegration, villagers engaged in bull-fighting activities, however, remained close throughout this time.

Earthquake Impact

Some houses totally collapsed, whereas others suffered less severe damage in this community. The majority of the severely damaged houses were old, built near the district center, in an area where the second phase of the road project was about to start. Some houses situated in the area of the completed phase one road project were also old, because they were yet to be relocated. The majority of the newly constructed homes stood in this area where road construction had been completed. Because construction of these houses took place after 1999, in the post phase one road project, its resiliency against earthquake impacts was higher than previously built buildings; the national building code had become stricter after Kobe experienced tremendous damage from the earthquake of 1995. As a result, these newly constructed houses did not suffer much damage. Besides the houses, other facilities and infrastructures in the community were totally ruined, including the *Koi* breeding ponds, roads, as well as rice paddies and vegetable gardens. Furthermore, the school grounds where all households were to be relocated upon groundbreaking of the second section of the road construction collapsed,

disabling the plan to relocate the households affected by the road project. Due to such severe damage from the earthquake, many villagers upon initial evacuation thought that they could not return home, as other villagers in *Nijumurago* had felt. Community *Nishi* was also isolated from external contacts for two nights, with roads being disconnected, and evacuation by helicopter was also problematic because the only suitable area for landing – the playground of the former elementary school – had a severe crack. In the end, some of the roads were urgently rehabilitated and villagers were grouped to evacuate by land using vehicles, while some others were assisted to evacuate by helicopter. Many male villagers decided to stay behind, to look after their community and animals.

Emergency responses, early displacement, and temporary visits to the former land

Nishi villagers acted quite independently even immediately after the earthquake. Households individually gathered with neighbors living in the upper half or the lower half of the community. The majority of these villagers who stayed around their home spent the first night sleepless in their family car or outside the home. Some households evacuated to the former elementary school with neighboring families. Others who had tents that they use for their *Koi* breeding businesses had put them up to spend nights with other neighbors. Confusion and disharmony of the community continued throughout the next day; some households were told that children and the injured could get medical treatments and villagers could also be evacuated to the neighboring district, while the others were without any information. The group that decided to travel to the neighboring district, however, found out that the different city administration could not take care of them, which forced them to travel back to their own community the following day. Finally, on the 25th, people gradually gathered at the former elementary school as villagers were informed about possible evacuation by helicopter from the former elementary school. Finally, *Nishi* community members then managed to evacuate to the *Ojiya* City gymnasium, either by helicopter or by vehicle. Because they were among the last ones to be placed in the City gymnasium, there was no more space left for them. Additionally, because the majority of males were left behind in the community to keep an eye on it, women organized themselves to secure a space for members in a welfare center, apart from the gymnasium where other communities from *Higashiyama* went. Community *Nishi* and one other neighboring community then stayed in this center for approximately two months. The

length of stay that followed in temporary housing varied depending on individual household decisions; those that decided to relocate by buying a house in the market left as fast as they found a place, households that decided to return left earlier by the fall of 2006, and those that decided to relocate to the government prepared site remained later until the summer of 2007.

As with other communities, the enforced evacuation advisory restricted their mobility between the evacuation shelter and home in the initial stage of displacement. Many villagers, however, managed to visit home secretly, as their community is located closer to the City. Some roads underwent urgent rehabilitation upon initial evacuation and, additionally, the villagers were aware of unpaved roads that have been used privately only by community members. Yet, each visit to the community left them feeling down, as they continued to see their community deteriorate more and more as time elapsed. The home visitation situation was improved by the time the villagers had settled in the temporary housing. The permit to enter *Higashiyama* District issued by the City government made it easier for all households to commute on weekends, which was important for the many villagers that work on weekdays. Yet, the weekend visits were not frequent enough to save their houses from accumulating snow, and many villagers who decided to return had to deal with a lot of anxiety caused by worrying whether they could actually return.

Nishi Community's decision to return and relocate

Many factors seemed to be influencing *Nishi* villagers in deciding between returning and relocating. Earthquake damage to the original properties was one of them. Almost all villagers initially believed that returning would be difficult due to its devastation. Another factor was the expected and completed relocations of several households to clear the way for the implementation of the road construction project. The majority of households that had already relocated before the earthquake returned because of the housing loans they continued to pay; while households that had plans to relocate into a site that was damaged by the earthquake had to find another place to permanently settle. A third factor was that the collective relocation program interfered with resettlement decisions of several households that did not have a thorough understanding of the program and its functions. As *Nishi* community did not have any formal or informal conversation among themselves in the decision process, there was no way to develop a consensus around the collective relocation program, nor correct any misunderstanding

they might have. In the end, each household weighed their preference and financial capacities to make final decisions, making individual decisions at different times. Although many factors seemed to be influencing households' decisions to either relocate or return, the ultimate reasons for either decision were common for a majority of the households.

The majority of returned villagers explained that the reason was their preference for rural living, as they could pursue the "purpose of life." This involved bull-fighting activities, *Koi* breeding, and home gardening, which are the traditional activities of the *Nijumurago* area. Respondents also explained that living in the community minimizes their financial burden by using home grown vegetables and reducing frequency of grocery shopping. Other households having businesses back in the mountains described this as the reason for returning.

On the other end of the spectrum, relocating villagers, excluding those who had to live in the public housing in the City due to financial constraints, mainly described their growing feelings of dislike toward the mountains that had emerged over time; geographic conditions, climate, and inconveniences have made them to aspire to live in the flatlands. Furthermore, households whose heads have to commute to the cities or have family businesses outside the mountains decided to move to a location that is convenient for them.

Returning respondents commented on their decision:

> I had a difficult time deciding whether to return or to relocate, although I preferred to return from the beginning.[49] I was 54 years old back then, and couldn't see myself living in the city, because I wanted to live with what I value in life. I can't give up *Koi* breeding and participating in bull-fights; besides I also work as a driver for a firm. I had to return to the mountains to pursue them all, because it would be difficult to manage all these activities if I relocate [to the City]. (Male, in his 50s)
>
> Our house was built just two years before the earthquake, so I never thought of going to the city from the beginning. My next door neighbor [who also had a home newly constructed], and I were talking about returning together since the time we were at the welfare center [as the temporary shelter]. I also feel that

[49] He continued to explain his conflicted emotions between his own preference to return and his dislike of using government subsidies in reconstructing public infrastructures (i.e. roads, water supply and sewage system) to be utilized in the community. He said, "I was not sure if I could push for returning because it would mean additional investment by the national and local governments. But I didn't want us to become a good example of governments supporting relocation, because then, mountain communities would suffer, disappearing in post disaster…"

> we [the returned villagers] are protecting mountains. I like experiencing the four seasons in the mountains, it's beautiful. (Female, in her 50s)
>
> I was thinking of returning from the beginning. I am a carpenter [owning business in the community] and need space for my work. My house is 88 *Tsubo* [approximately 350 yd^2][50] and I also have additional space for work. I can't afford to buy that much space in the flatlands. Moreover, I still had to pay off loans that I took out eight years ago to build my house. (Male, in his 50s)

The attitude and feelings of the relocated respondents while explaining their reasons to return were distinctive from those of returned villagers based on their comments:

> When I thought about the future of the mountains, I couldn't envision an optimistic future. Commuting is difficult during winter and I didn't want my son to be embarrassed to his future wife for having a home in the [mountain] community. My grandchildren will also have a difficult time commuting to schools, if we return. So, I decided to leave the mountains to go into the city after having discussions with my extended family, although my son said he'd support me returning. (Male, in his 60s)
>
> We are in the *Koi* breeding business and we needed to settle as soon as possible to restart. Because we already had land here [in flatlands], we came here. We just needed to act as quickly as possible for restarting the business. Also, my father [in-law] has always said, 'the City government neglects us and does not need *Higashiyama*' so he must have negative feelings toward the mountains. (Female, in her 30s)
>
> We were initially planning to relocate to the former elementary school grounds with the road development. The City told us we can't relocate to the site anymore because the land collapsed and became hazardous. In fact, if we had to be relocated, I wanted to live somewhere close to *Higashiyama*. Also, relocating to city made commuting easier for my son. I had no choice, as my son is now the household head. (Male, in his 70s)

Although returned and relocated villagers had distinctive responses, both groups had their own particular reasons for their decisions; many returned members had their lives blended into mountain living for work and other activities, which they often described as their purpose for living. Many relocated villagers, on the other hand, had desires to live in the flatlands for the conveniences it affords or just to fulfill their aspirations. Lastly, in a similar manner as seen in other communities, age played an important role in deciding between returning and relocating. First, decision power was mostly given to the working cohort who had financial power. Therefore, elderly people living in a household with younger people did not have a say on

[50] A unit of measuring land in Japan: 1 tsubo = 0.3025 m^2 = 3.25 ft^2

whether to return or to relocate, and merely followed the decision of the power holders. Secondly, similar to residents of other villages, relocating or returning linked strongly with age-related life activities, represented by commuting and operating businesses. One prominent distinction between community *Nishi* and other collectively returned and relocated communities was that no one mentioned community cohesiveness or comfortable living in respect to personal relations.

4.4.2 Community *Higashi*

Although *Higashi* community members had strong ties with one another, their return rate was one of the lowest among the six most devastated communities of the *Yamakoshi* District. Only 12 out of 29 households returned, for a rate of 41%. One of the major factors for this low return rate was the prolonged time in making a decision to return, due to complicated site selection and land acquisition processes. The delayed progress made some households in the community make up their minds to be freed from community bonding and pursue their individual preferences. This, however, influenced the community to disintegrate, despite their collectiveness in both pre- and post-earthquake periods. In the end, *Higashi* households made two different decisions, one of which was to return but to an adjacent land safe from landslides, while the other was to relocate to flatlands located closer to the city. As for returned households, the residential improvement program was introduced by the local government to identify, acquire, and develop a site in their community suitable for development. Households that returned then decided to use this program – with the realization of limitations in permanently resettling on site of individual preference – because their former lands, also in a valley, were identified as hazardous, and villagers were prohibited from continuing to live there. On the other hand, relocated households did not receive any assistance on resettlement, opting not to use the program, but selected new resettlement sites of their preference. Nevertheless, all of the *Higashi* households, including both returned and relocated, received general assistance by way of the livelihood restoration fund and public donations, similarly to other affected households in *Chuetsu* region. Furthermore, almost all households in this community were insured with *Tateko* and received up to 100% of the amount of insurance coverage.

Community and the earthquake

Higashi community in the *Yamakoshi* District originally had extended neighborhoods in the base of the valley. With such geographic condition, the length of time the sun shines during the day was short throughout the entire year, and was even shorter during the winter with the accumulated snow. Community members therefore perceived their neighborhood as quite gloomy. The community had 29 households with 110 people in year 2004, which was larger than the six other devastated *Yamakoshi* communities. The proportion of elderly at that time is unknown, but villagers explained that more villagers in their 40s and 50s were living in the community back then. For villagers, living in the community was quite inconvenient, as the only prefecture road connecting to the district center was narrow and became especially dangerous during the winter season. The local government was responsible for snow plowing; yet, some sections of the road were often closed during this time. Furthermore, other public services, including the post office and the local government office were located in the *Yamakoshi* District center, which was a little distance away from this community. In the earlier years, this community had an elementary school serving three nearby communities, but was closed after 2000.

Living in a low valley floor, the older population in this community followed the tradition of *Nijumurago* of working outside the community as seasonal laborers (*dekasegi*) in the metropolitan urban areas. The majority of women who were left in the mountains while the males were absent engaged in domestic silk threading and weaving works to make a little money, and at the same time took care of domestic chores. However, younger generations were becoming more associated with work and life in the cities, with some being employed in offices while others established businesses outside *Higashi* community. Still, villagers who worked in the cities often faced difficulties commuting in the snow, because commuting time to either *Ojiya* or *Nagaoka* was simply doubled or tripled. Consequently, it had become normal practice for some villagers to live in the flatlands apart from their family for certain periods of time in a year.

Due to the marginalized location of this community, which is a distance away from the district center and flatlands, development arrived at a later time, even compared to other *Yamakoshi* communities. Such location and state of underdevelopment also hindered this

community to develop any type of industry. Although many villagers were engaged in growing vegetables at home, no one was involved in breeding *Koi* or cows, or in rice production, which were strategized and implemented in other *Yamakoshi* communities with the plan developed in the early 1970s. Furthermore, no households from this community were engaged in the bull-fighting activities that *Nijumurago* villagers typically enjoyed. Villagers had long kept a quiet life, being remote from urban and modernized living. Prior to the earthquake, however, villagers were envious about households that left their community, because leaving sounded as providing an opportunity not given to households that remained. They commented that those who left the community were the winners, having a place to work and some money to start a new life, while those who continued to remain were the losers who cannot abandon their rice paddies and small lands for vegetable growing while lacking of money. Further, households having constructed new homes in the community could never get away from the mountains.

Meanwhile, ties (*yui*) within the community remained strong. Many people were originally born and raised in the community, or joined the community from neighboring communities upon marriage. Community members knew each other very well, as they have spent most of their lives together. Interview respondents often sarcastically described themselves as "a frog in a well knowing nothing of the ocean" (*inonakano kawazu*) or as "shy and withdrawn" (*hikkomijian*), with members disliking unusual interactions. People further explained that their strong internal cohesion and a history of conflicts with neighboring communities continue to function as an invisible wall. Furthermore, strong ties within the community, along with a lack of external community networks, developed a strong distinction between insiders and outsiders in the community, which often formed disagreements between these two groups.

Earthquake impact

The earthquake that shook *Higashi* community completely destroyed their neighborhood. Almost all houses in this community were old and could not withstand the seismic intensity, which led to their collapse or extensive damage. Some houses were flooded. Rice paddies and lands for cultivation were severely damaged, and small barns where villagers kept agricultural equipment were also totally destroyed. The community that originally extended along a river immediately faced a threat of massive flooding, with clogging of the nearby river

caused by continuous landslides. Many respondents in this community, as other *Nijumurago* villagers, also felt that they could not return immediately after the earthquake, with the level of devastation they experienced. This understanding was not necessarily wrong, as their original location in the valley was later identified by the local government as vulnerable for inhabitation.

Emergency responses, early displacement, and temporary visits to the former land

Higashi members responded collectively immediately after the earthquake. They initially gathered to three areas in the neighborhood that were relatively safe. Subsequently, members began to confirm damage, casualties and safety of others, and put effort in sharing such information among evacuated villagers in three different locations. On the following day, the 24th, all villagers staying in three different areas decided to reorganize themselves to gather at a higher location for their safety. The water level of the river continued to rise, and villagers recognized that they were at risk at the current evacuation site. Some of the elderly who could not walk crawled up the hill to the safer location. The others supported these elderly and injured people. Injured and elderly people were then evacuated to *Nagaoka* City by helicopters in the afternoon, while the rest waited for one more day in the community. Because there were no available spaces in this community for the helicopters to land, villagers were pulled up into the hovering helicopters. All evacuees were then sent to a high school in *Nagaoka* City initially, and later transferred to a nursing home also operated by the City. Most of the villagers stayed in this place, which also served as a temporary shelter, for a little less than two months, until the 19th of December, with two other neighboring communities from the same district. Some other villagers who had relatives in non-earthquake affected areas left the temporary shelter site to live with them. However, those who decided not to stay in the temporary shelter also visited the site frequently to share and gather information about their community. The villagers were then transferred to temporary housing, where they stayed until the end of December 2007. This community was also one of the last communities to leave the temporary shelter site.

Visits back to their community were especially limited to about one or two times while in the temporary shelters, because they had to be brought by helicopter owing to their community's geographic isolation. Traveling back became easier later in the temporary housing stage, after roads and bridges were rehabilitated. During this time, villagers visited approximately six to seven times in the first winter, between January and March 2005. Yet a few visits per week

were not enough to protect the old houses from further damage by the accumulating snow, which made villagers lose their desire to return to their community. Many villagers explained that they became increasingly depressed each time they visited their former lands. Nevertheless, they continued to visit and did so more frequently after the snow melted in the spring, and reinitiated vegetation and rice on their land. Some even believed their agricultural work back in the community would influence other members to reconsider their decision to leave the community.

Higashi Community's decision to return and relocate

A survey on willingness to return by the *Yamakoshi* government was conducted in early 2005. At that time, the result indicated that 90% of the households in the district were willing to return. *Higashi* community also conducted a similar survey at about the same time, but the positive response was only about 70%. This result revealed that a significant number of *Higashi* villagers at the very initial stage of the resettlement process already had intentions of leaving the mountains. Furthermore, quite a few households changed their decisions from returning to relocating as time passed; their decisions were influenced by the prolonged process of site selection and subsequent resettlement procedures.

On the reasons to return, the majority of returning villagers cited continuation of non-economic activities and the inexpensive cost of living in the mountains. Some were also concerned about community ties and relationships, including their obligations to the community. On the other hand, the majority of relocated villagers mentioned feelings of inferiority and their dislike of living in the mountains, and many also cited the lagged timing and delay in resettlement planning. Meanwhile, both returned and relocated villagers in the working cohort mentioned the convenience for their businesses or commuting, while some parents also mentioned their concern on schooling of their children. In other words, villagers in working and parenting ages may have either returned or relocated, depending on their circumstances.

Returned respondents commented:

> Everyone at least had experienced being a little confused about returning [to the mountains] or relocating [to the flatlands]…honestly speaking, my daughter and I wanted to live in the city, because we have an elderly person in our family and living there would be more convenient, such as for commuting to hospitals. I

additionally thought, 'if we needed to completely rebuild a home anyway, why not built one in the city?' …but my husband wanted to return because there'll be nothing to do in the city after retirement. He said he could grow some vegetables and work for community back in the [mountain] community but not in the flatlands. (Female, in her 60s)

It was really difficult for our family to decide between moving to *Nagaoka* (City) and returning to *Yamakoshi* (District) because snow is extreme here. I couldn't even envision what would be the best solution until we had a final evaluation and decision on *Tateko* insurance benefits. One of the important reasons, however, was the boredom that I experienced during displacement…I was in other places [in the cities] with my son and daughter during the period of temporary housing. It felt like post-retirement life. Moreover, I wanted to continue the business [of growing local vegetables] that we just initiated before the earthquake, so we decided to come back. (Female, in her 60s)

My husband and I wanted to live in the flatlands in *Nagaoka*… but looking for a house there was difficult without much free time [having a husband that works in a different city leaving family behind]. Moreover, grandma and my two sons [schooling] strongly wanted to return to the community. So we decided to stay, because there were no reasons to leave. (Female, in her 40s)

I made a decision to return at an early stage of displacement. And so I took an initiative to collectively return. With this reason, I could not change my mind, although there were difficult times in the process. In fact, there were some villagers telling me that they'd follow me to the flatlands if I decide to do so. But I felt that I have a responsibility to return. (Male, in his 60s)

In contrast, relocated respondents used a negative tone in describing their decision to relocate:

I was planning to move out of the community from the very beginning [after the earthquake]. There is no future in our community because we don't have any opportunity to earn [money]. Furthermore, winter there is terrible – snow accumulates and roads to the valley become so slippery, which made us feel uneasy. We also suffered avalanches. Daytime is also very short during that season… (Male, in his 70s)

I was initially planning to return, but finding a new site for relocation in the community didn't proceed as smoothly as we expected – so I decided to leave. In fact, I was very poor [in the early years] and our family only had lands in the mountain…and I've always wanted to own lands in the city, so I took this opportunity. (Male, in his 50s)

We were initially planning to go back to *Yamakoshi* to live there. We [the community members] were aware of collectively finding a site to reconstruct homes back in the community with some assistance by the local government…yet it seemed like the negotiation did not go well among these

> 'upper'[51] people in the community…As plans for collective relocation back in the community begin to diminish, we found a flyer of this subdivision [in flatlands *Nagaoka*] while in temporary housing. Although my grandchildren wanted to be back in the mountain, this place was convenient for both my son [in-law] and daughter to commute to work, so we decided to move here. (Female, in her 70s)

As also seen in disintegrated community *Nishi*, a large segment of households had intentions either to return or to relocate at an early stage of displacement. However, lagged processes on site preparation in the community gave the villagers more time to come to a decision. With this much needed additional time, more households eventually decided to relocate rather than to return, changing their former intentions. Villagers were indeed aware of the financial assistance program and its functions; yet, this financial incentive did not have much influence on their final decisions. For villagers, financial support, therefore, was not a big issue. This community's resettlement footsteps also explain that a community's physical disintegration upon resettlement could occur by lack of rapid planning processes and implementation.

Age, as also identified in other targeted communities, played an important role when resettlement decisions were made. For example, many households whose decision makers are people over 60 years of age tended to return to the community to pursue non-economic activities, including home gardening. On the other hand, younger households that have members who commute to cities decided to relocate to shorten commuting time. Furthermore, children's schooling was often the reason for returning or relocating, depending on each household's lifestyle preference. In summary, the core reasons for villagers' decision in this community were similar to responses of other disintegrated communities, i.e., returning members wanted to pursue a purpose in life, while relocating members have fantasized about life in urban areas.

4.5 Relocation or repopulation: Villagers' rationales for resettlement

4.5.1 Reasons to relocate and return

Five targeted communities had different geographic, social and financial settings as well as livelihoods in their modern history. The assistance provided by the local governments on livelihood restoration was also distinctive between the *Higashiyama* and *Yamakoshi* Districts.

[51] When she said "upper," she was referring to those community members who were more involved in village politics. Furthermore, she mentioned about hierarchies within the community between the households, not necessarily with the division of *Maki*, but between the head and branches of the family.

Communities further responded distinctively to the provided assistance programs, by accepting or rejecting them. However, clear patterns exist on reasons for resettlement, on whether to relocate or to repopulate, among all observed communities. Further, some factors are found to play key roles in making resettlement decisions, to either relocate or to return, depending on the preference of each household.

Reasons to relocate

There are mainly three reasons given by the relocated villagers; one was the difficulty of continuing to live in the mountains due to natural hazards, second was the feelings of inferiority brought by living in mountain communities, which, conversely implies an attraction to the opportunities of modern city life. Lastly, dislocation to cities before finding a permanent place to live had also played a factor in deciding in favor of resettlement (see Figure 4.3). First, to continue living in the mountain communities was difficult for many households due to the direct damage caused by the earthquake. Many lost the lands where their former houses stood, from the continuous landslides that occurred after the first earthquake shock. Some could no longer rebuild their homes back in their communities because the land was severely damaged or identified as being in a landslide hazard area. Other households were constrained by possible future flooding by having their original lands near a river that changed its path with the earthquake. Furthermore, many villagers who decided to relocate had repeatedly faced the risks of floods, landslides, and snow avalanches, even prior to the earthquake. Leaving the communities behind was quite natural for relocated households to avoid further risks of disaster threats, both from severe past experiences and the devastation wrought by the earthquake.

Secondly, many relocated villagers expressed feelings of inferiority about living in the mountain communities while having aspirations of living in cities and flatlands. Their feelings of inferiority and dislike toward the mountains emerged from a long history of marginalization and sense of isolation. Often, relocated villagers had lived in communities located deep in the mountains or in the valley. Such disadvantaged locations created isolation, underdevelopment, and inconveniences; public services, such as road maintenance, school services, and public infrastructures, were often less well provided. Economic and social marginalization due to location of the community also contributed to the development of depression of the villagers; reasons which respondents said filled them with inferior feelings toward their community. As a

result, villagers began to see cities and flatlands as places to be freed from such physical and emotional marginalization, thereby nurturing their aspiration to live in such areas. Parents with school age children included to consider about better education of their children. Relocation not only made it easier for children to commute, it also presented better opportunities for them to get higher education in the near future.

Thirdly, ability for villagers to visit their original community played a critical role for them in making relocating decisions. While villagers were away in temporary displacement, buildings and facilities in their communities continued to be damaged by snow accumulations on rooftops, making villagers feel powerless to continue living in their former communities. Initially, the former villages just looked damaged, but gradually, they seemed to be dying. Although many desired to frequently visit their communities to keep an eye on their houses and find out the condition of infrastructures, entry control of *Nijumurago* area by local governments made it difficult to pursue. Consequently, villagers gradually gave up returning and initiated to seek a place different from their original communities.

Considering all these three major reasons, a pattern of decision to relocate by villagers became apparent. First, relocated villagers did not have much positive experiences and emotions toward their neighborhoods prior to the earthquake with several reasons: a history of marginalization and isolation as well as a hazardous mountainous geography had just made them dislike their communities and aspired to live in the city. Second, the damage induced by the earthquake then became initial triggers for the villagers to decide to relocate, and temporary displacement further pushed them to a firm decision on relocating. With such negative emotions toward their original communities, attachment to the original communities had just subsided with physical distance and the passage of time.

Reasons to return

Three main reasons provided by the returned villagers were quite distinctive from relocated villagers: one related to sustaining a livelihood similar to pre-disaster, the second was about pride and contentment toward their communities and the third is associated with displacement to cities. First, respondents often believed that they could survive in various ways, if they are back in the mountains, even if they are on the brink of being destitute. The reason

given is that their pre-earthquake livelihood worked well for them, making it feasible to have a balanced economic (e.g. income and expenditure) and social life. The cost of living in the mountains is much less, with modest living, and with vegetable gardening and rice production for home consumption. Furthermore, villagers often had relatively open and good relationships with other members of the community, with daily communications and interactions. Some also described their emotional security in the community, whereas living in the city would only make them look naïve. Some other villagers returned because they wanted to continue rural businesses, to sustain their income. Lastly, households having school age children who wanted to sustain existing relationships with their classmates in the mountains, returned.

Secondly, pride and contentment in their communities were also a great factor for returning. As the *Nijumurago* area has a unique culture and traditions, members involved in such activities found joy and pride taking part in them. In particular, respondents who described *Koi* breeding and bull-fighting as a reason to return had explained this point. It also became apparent that those villagers often had good relationships with other members within or outside *Nijumurago* communities, developed by their shared interest in such undertakings. In this regard, many expressed their interests toward developing and sustaining mountain communities as well as *Nijumurago* culture and traditions. These sentiments were contradictory to the attitudes and emotions shown by those who left the *Nijumurago* communities; many were proud and considered their mountain livelihoods as a privilege rather than as a source of inferior emotions. Contentment in performing rural activities also had a large share for reasons to return. Villagers wanting to continue to grow vegetables and rice also decided to return, because these were part of their motivations for living. Growing agricultural products at home did not necessary link to an income, but they just enjoyed harvesting and consuming their home grown vegetables. Furthermore, the majority of villagers who have established roles in the community or the district were likely to return, because they either enjoyed playing their roles or positively accepted the fact that other members need them. All of these *Nijumurago* traditional activities, home gardening, or taking roles in communities, do not necessarily benefit villagers financially, but they provide joy and a sense of pride. Furthermore, because these activities are less tied to financial production, villagers are free to negotiate their level of engagement with their availability. With the reasons stated here, returned residents made up their minds to reunite themselves to the former communities.

Thirdly, dislocation to flatlands had also influenced villagers who returned in their decision making. Through actual displacement in the cities for a certain amount of time, many returned villagers came to understand that urban living is so different from their former life and is not as great as they imagined. There were no opportunities for them to engage in rural activities they enjoy, and cost of living was high.

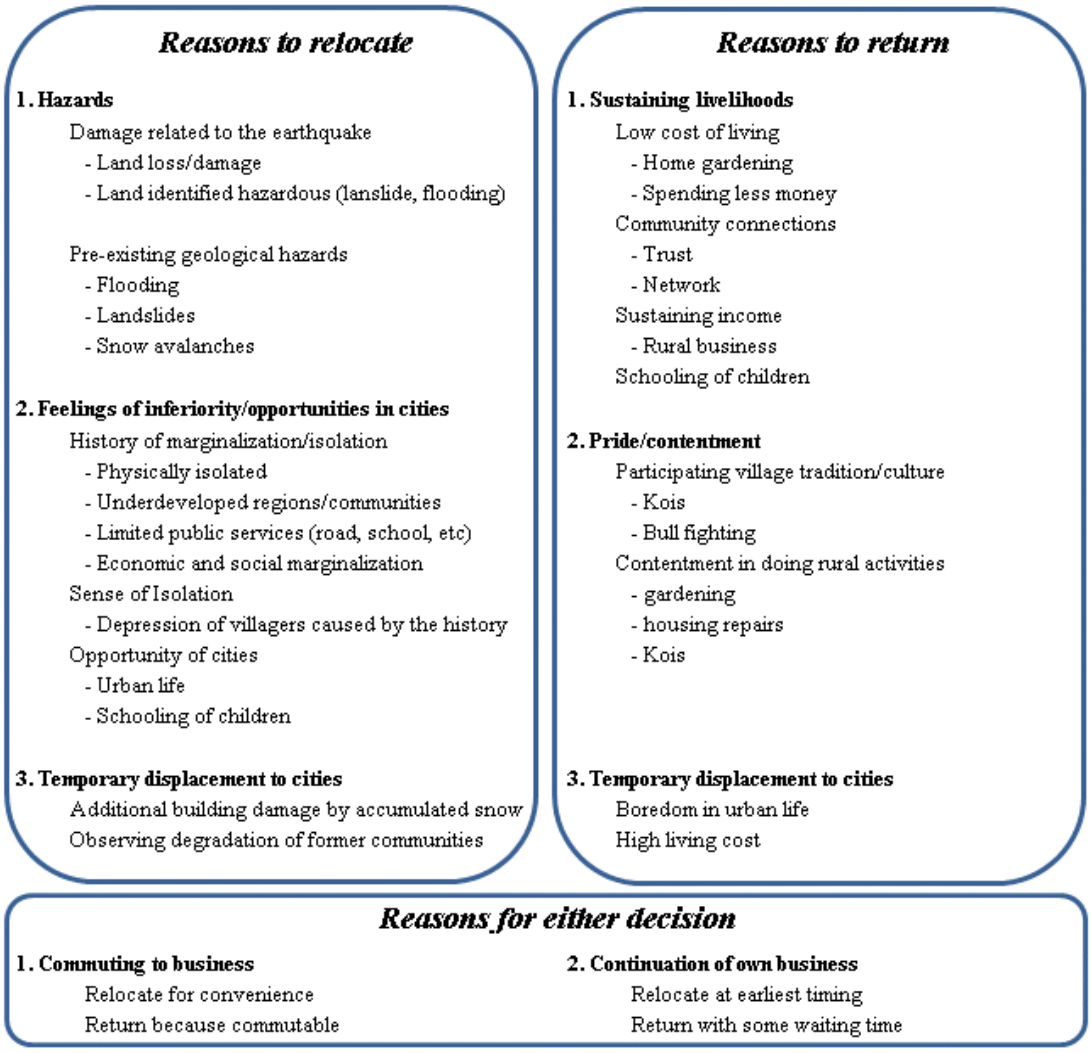
These three sets of reasons suggest a pattern of returning decisions, which contradicts that of the relocated group. First, returned villagers had positive experiences and emotions toward their neighborhoods prior to the earthquake; the lives they have built in their communities work well for them and they are satisfied with what they have – a certain income, modest living, and reliable social ties. Community members additionally felt pride in their place with *Nijumurago* tradition and cultures, which is not noticeable with the relocated villagers. With such positive emotions toward their place, the displacement to flatlands solidified their attachment to their land and communities by confirming discouraging aspects of urban life.

Commuting and continuation of own businesses as reasons in either decision

Villagers provided commuting and continuation of own business as reasons to relocate or return. These reasons, however, did not indicate any specific association with relocation or repopulation; rather, it depended on their own convenience. For example, respondents working in downtown were likely to relocate, if other reasons to return did not exceed their level of importance. Nevertheless, some others returned because the locations of their communities are commutable to the cities. Similarly, business owners, especially those who have large-sized *Koi* breeding businesses as well as those in agricultural businesses, returned or relocated at the earliest possible time to restart their operations quickly. Some decided to relocate their businesses to the flatlands within the first couple of weeks, because they were prohibited from visiting their original communities. Some continued to wait to reinitiate their businesses until they were permitted to reenter. Households, therefore, either relocated or returned depending on where they decided to reinitiate their businesses. Villagers who considered the factors of commuting and continuation of their businesses weighed these elements against other possible

factors related to resettlement, and gradually came to final decisions to relocate or return, according to their preference on lifestyles and conveniences.[52]

Figure 4.3 Reasons for resettlement decisions



Age and its influence on resettlement decisions

Overall contextual analysis on resettlement decisions identified that age of the decision maker influences decision. Respondents who provided reasons for commuting and owning businesses, and schooling were the working cohorts. These cohorts were less financially

[52] Some business owners, mainly aged, decided to quit their businesses. Consequently, not all former-business owners faced resettlement decisions in regard to business operation.

restricted from choosing either one of the decisions, as long as their incomes would be secure. Consequently, working cohorts either returned to their communities or relocated to flatlands by comparing their pre- and post-earthquake lifestyles to make their lives more convenient, or better. The elder population in the working cohort, especially those in their 50s, however, tended to choose to return, because adapting to a completely different lifestyle from their accustomed one in the mountains was simply not attractive. Furthermore, this segment of population had to begin considering about post-retirement, which would begin in a few years. Their age, therefore, hindered them from taking a risk of drastically changing their lives.

The majority of elderly people were already retired at the time of making the decision to return, and many were the decision makers in the household. A decision to return was primarily because they understood that their lives would be more enjoyable back in the mountains, with their shared history of living in the community with other members. They also sought continued engagement in activities in the mountains, i.e., bull-fighting, *Koi* breeding, and home gardening. Furthermore, a few years of experience living in the flatlands during the displacement period made them realize that delightful living in the flatlands is only an illusion, and is rather a life of boredom. However, some elderly people without any financial capacity to build a new house on their own back in the communities had to simply rely on their governments' strategies to relocate or return, to use the affordable housing program. Without any income after retirement, borrowing money for housing construction from institutions is unrealistic. As these observations suggest, relocation or repopulation decisions after a disaster is closely linked with the stage in lifecycle of the affected households; the working cohort usually has more freedom of choice and financial power in selecting a permanent place, whereas the elderly are often limited in their resettlement choice due to their limited financial outlook. Along with this notion, freedom of choice to relocate or repopulate tends to narrow as household heads get older.

4.5.2 Influence of resettlement policy on decisions

Resettlement policies after a disaster, particularly on providing financial incentives, were not as influential in the decision-making as had been expected by the local governments. Both the relocation policy of *Higashiyama* District and the repopulation policy of *Yamakoshi* District did not motivate the majority of *Nijumurago* villagers to follow the government strategies.

Among the three communities of *Minami*, *Kita*, and *Nishi* in the *Higashiyama* District, only community *Minami* decided to use the relocation policy in a collective manner. Yet, the majority of community *Minami* explained that their reason to relocate was the geographic hazard and difficulty of living in the mountains, without saying much about the financial aspects. Rather, this collective relocation program was beneficial to them, only because it supported their intention to leave the hazardous community. The relatively low importance of governmental financial support was also obvious in *Kita* community, as all its members dismissed using the program to relocate, as it was against their intention to return. Furthermore, in the disengaged community *Nishi*, only half of the relocated households used the relocating program. Moreover, a large proportion of the households that relocated to the government-designated lands did not have a choice but to follow the government program to survive. These were mainly financially vulnerable households, such as elderly or female-headed ones, moving into public housing because of financial constraints. Others that built homes on government prepared land mentioned that the benefits of building a home there attracted them, namely being less expensive and, with their limited budget, the only solution to own a house again.

A similar phenomenon is also apparent in the *Yamakoshi* District with the repopulation program. Returned community *Chuo* had an opportunity to use the collective residential improvement program by rearranging their community with some land use procedures. The program would have financially benefited households, yet community *Chuo* eventually decided to drop the program. For *Chuo* members, the financial incentive was not as beneficial when compared to keeping their original lands; some villagers even decided to return by taking out loans in which payment can be passed down to their children. Similarly, financial incentives failed to attract all members of disengaged community *Higashi*; all community members were initially planning to use the collective residential improvement program provided by the *Yamakoshi* Village government, but several households gradually dropped out from the plan by changing their minds to relocate into flatlands. No financial support was provided to these relocating households, yet the number of households that decided to relocate increased with the prolonged time for plans and actions. Some individually relocated households also took out housing loans which also need to be paid off in two generations.

These decisions of communities and households suggest that either policy supporting relocation or repopulation is welcomed only if it goes hand in hand with the community's original intention on resettlement. To put it another way, financial incentives did not influence much of the households to the extent that these are able to change their minds, if policies contradicted their original intentions; but rather, many preferred to use any other financial strategies, such as taking out loans that can be passed down for generations, to pursue their decisions on resettlement. The reason for this was because the resettlement decisions for villagers were largely about sustaining livelihoods in their preferred lifestyles; whether or not they could retain their livelihoods back in the original land, and how they prefer to live in urban or rural areas in a long-term. In the end, the rate of population that used resettlement programs turned out to be lower than expected. Local governments of both *Ojiya* and *Yamakoshi*, however, seem to avoid facing the actual use and impacts of resettlement policies; they were too occupied with piles of post-disaster issues to deal with and could not explore the impacts of program enforcements before accepting certain programs to use. Many had believed that, with the image of historical marginalization of the communities, a large proportion of the affected households would simply decide to use the programs. Additionally, the resettlement had been a taboo topic for all people involved for the past five years. Common understanding of people toward local governments was largely influenced by media and social climate; *Ojiya* City was criticized for its relocation program as it was seen as the main cause of *Higashiyama* District's depopulation. *Yamakoshi's* government, on the other hand, had largely emphasized the 70% return rate, which was the return rate of the entire district including communities outside *Nijumurago*. Overall, both governments were not totally satisfied with the low outcomes of policy followers, but were at least satisfied with the fact that the policies helped the more vulnerable population.

This post-disaster resettlement is perhaps in between of voluntary and forced resettlement distinguished in the prevalent literatures. Voluntary resettlement often provides a choice to relocate or not without a time limitation, thereby taking place when households see better economic opportunities and livelihood improvement (e.g.Goetz, 2002). This type of relocation is therefore observed in a gradual process, by households that have been "pulled" to relocate to more attractive – more financially and socially affluent, for example – locations. On the other hand, involuntary settlement often takes place with development projects without much freedom

of choice to stay behind, being "pushed" out of their original locations and often creating negative consequences on livelihood adaptation in the new location (e.g. Cernea, 1988; Hutton & Emdad Haque, 2004; Nakayama, Gunawan, Yoshida, & Asaeda, 1999; Price, 2009). The prevailing literature has so far described two extremes of relocation – voluntary relocation or forced relocation within the resettlement scheme. The post-disaster case, as observed here, can be considered as being distinctive from previous definitions of resettlement. It can be understood as voluntary resettlement constrained by time, or an involuntary resettlement that requires a decision. As for the result of resettlement decisions, the affected households are likely to follow each of their own preferences based on their pre-disaster livelihoods and emotions toward their original communities. To this extent, monetary incentives on resettlement provided by local governments were not as influential as how government officials expected, because personal factors and histories were more likely to be weighed by the households.

Resettlement programs and policies, however, were meaningful to the least privileged households in the *Nijumurago* area that needed support, because they had no options to reconstruct or rebuild houses by themselves. Relocating programs by *Ojiya* City had provided lands and housing in the flatlands to serve the elderly and female-headed households that would have no other strategies to survive otherwise. The repopulation policy by *Yamakoshi* District also supported the elderly and less privileged households to return. Such use of programs by the least privileged households reveals that policies were successful in serving their role as providers of social welfare to support the most affected populations. Yet, to reiterate, resettlement policies with financial incentives are found not too influential in making the disaster affected communities and households to avail themselves of government assistance.

4.6 Conclusion

This chapter observed five communities that relocated, returned, or disintegrated after the earthquake to explore reasons and rationales for resettlement decisions. All these communities shared similar devastating damage from the earthquake and were temporarily forcibly displaced into flatlands, for approximately two to three years. Detailed observations highlighted different textures of the five selected communities in terms of geographic, social and financial settings, as well as livelihoods in modern history, although population decline and aging were common

issues for all. It was found that these different characteristics of communities have played influential roles in the ultimate decisions to relocate or return; households mainly made decisions upon the likelihood of continuing their former livelihoods and emotions toward their original communities. That is, relocating decisions were made if communities were uninhabitable and traditionally marginalized by physical and social isolations developing negative emotions, whereas returning decisions were made if original livelihoods were likely to be sustained and were at a certain level of contentment prior to the earthquake. These emotional influences on resettlement decisions that emerged as a result of an inherent nature of the communities are yet to be discussed in resettlement literatures. Additionally, temporary displacement, that is distinct from voluntary or forced resettlements, functioned to further release the inherent emotions of the households; households with negative emotions had focused on deteriorations and damages of communities, while contented households had spotlighted the disappointing reality of urban living during temporary displacement. Nevertheless, households that commute to offices and own businesses had made decisions based on their own convenience, if other factors to relocate or return were less important. Lastly, the finding also suggested that the age of the decision maker influences decisions, because households of working cohort simply had less financial restrictions, thereby having a larger degree of freedom in making resettlement choices.

CHAPTER 5. COMMUNITIES AND THE LOCAL GOVERNMENT: DYNAMICS OF PLANNING PROCESSES AND RESETTLEMENT PATTERNS

All of the communities in the *Nijumurago* area faced devastating earthquake impacts. Affected communities were initially evacuated to either the city of *Ojiya* or *Nagaoka* (the jurisdiction to which they belonged) the following day. They were then displaced into the temporary shelters[53] operated by the above mentioned cities by the end of the second day, and they stayed there for the next two months with the compulsory evacuation in effect. Communities were then re-displaced to temporary housing sites that were constructed in several locations in the two cities for a maximum stay of three years.

Communities in both *Higashiyama* and *Yamakoshi* generally had identical sequences of displacement; however, the planning processes managed by the local governments and communities were unique in each. This chapter describes the resettlement decision processes by the local governments and communities to show their influence on the eventual resettlement patterns of regions and communities, so that the dynamics of planning and resettlement can be explained. Data relies mainly on government-published documents, archives related to resettlement, as well as 56 interviews made with local government officers, district representatives, and village members of both districts.

5.1 Resettlement processes in regional context

5.1.1 Resettlement timelines of two districts

In accordance with the "Disaster relief act" (*Saigai kyujyo hou*), temporary housing is permitted to operate for only two years maximum (Cabinet office, Government of Japan, 2009a). The *Ojiya* City government was particularly strict in enforcing this law in affected communities. The government, in fact, included a line citing this restriction in the contract households had to sign before moving into the temporary housing, and they were strongly encouraged to find a permanent residence within the time limit. The *Yamakoshi* Village government,[54] on the other hand, was rather lenient with time, as it understood that developing deliberative plans to better

[53] Major locations used for temporary shelters are gymnasiums, high school grounds, and welfare centers.
[54] The village government was merged into *Nagaoka* City government in April 1, 2005, approximately six months after the earthquake. The former village government is currently operating as the *Yamakoshi* Division of the City government.

resettle communities would take time. The village government therefore assumed a more patient attitude towards its communities rather than pressuring them over following a strict deadline of temporary housing. In either strategy, however, the time spent finding a permanent residence for all community members turned out to be similar nearly three years.

According to the resettlement timeline of the two districts over the three-year period (see Figure 5.1), four distinctive timings of resettlement-related actions are identified for the local governments of *Ojiya* City and *Yamakoshi* Village. These include timings of actions on: i) deciding resettlement programs; ii) initiating formal contacts with communities on resettlement procedures; iii) lifting compulsory evacuation; and iv) initiating construction of resettlement sites. In short, *Ojiya* City had earlier timings in making decisions and actions in general, while *Yamakoshi* Village had slower responses on community resettlement matters.

First, the timing of deciding the resettlement program to use was distinctive between the two governments. *Ojiya* City decided to adopt the "collective relocation promoting program for disaster prevention" (*Bosai shudan iten sokushin jigyo: Boshu*) as the main program in supporting communities to relocate in their flat lands. Its decision was made in early December 2004, within two months after the earthquake, when the majority of affected villagers were still living in the temporary shelters. On the other hand, *Yamakoshi* Village did not make a decision over using the "Small-scale residential district improvement program" (*Shokibo jyutaku chikutou kairyo jigyo*) as the program to support communities on returning, until almost a year after the earthquake in September 2005. By then, communities were already settled with their displacement life in the temporary housing sites. Secondly, the timing when the two governments started formal contact with communities was different, due to the preceding decision timing on the resettlement programs. The *Ojiya* City government initiated such communication with *Higashiyama* communities in early February 2005, soon after the affected communities' re-displacement to temporary housing sites. On the other hand, *Yamakoshi* villagers did not receive official information on the program supporting return until late October 2005, almost 10 months after *Ojiya* City initiated public hearings. Thirdly, *Ojiya* City's lifting of compulsory evacuations was earlier overall, a year earlier than that of *Yamakoshi* District's. It involved four steps considering the physical damage level of the community; the first notice was given at the end of December 2004, then in July 2005 and December 2005, and finally, in

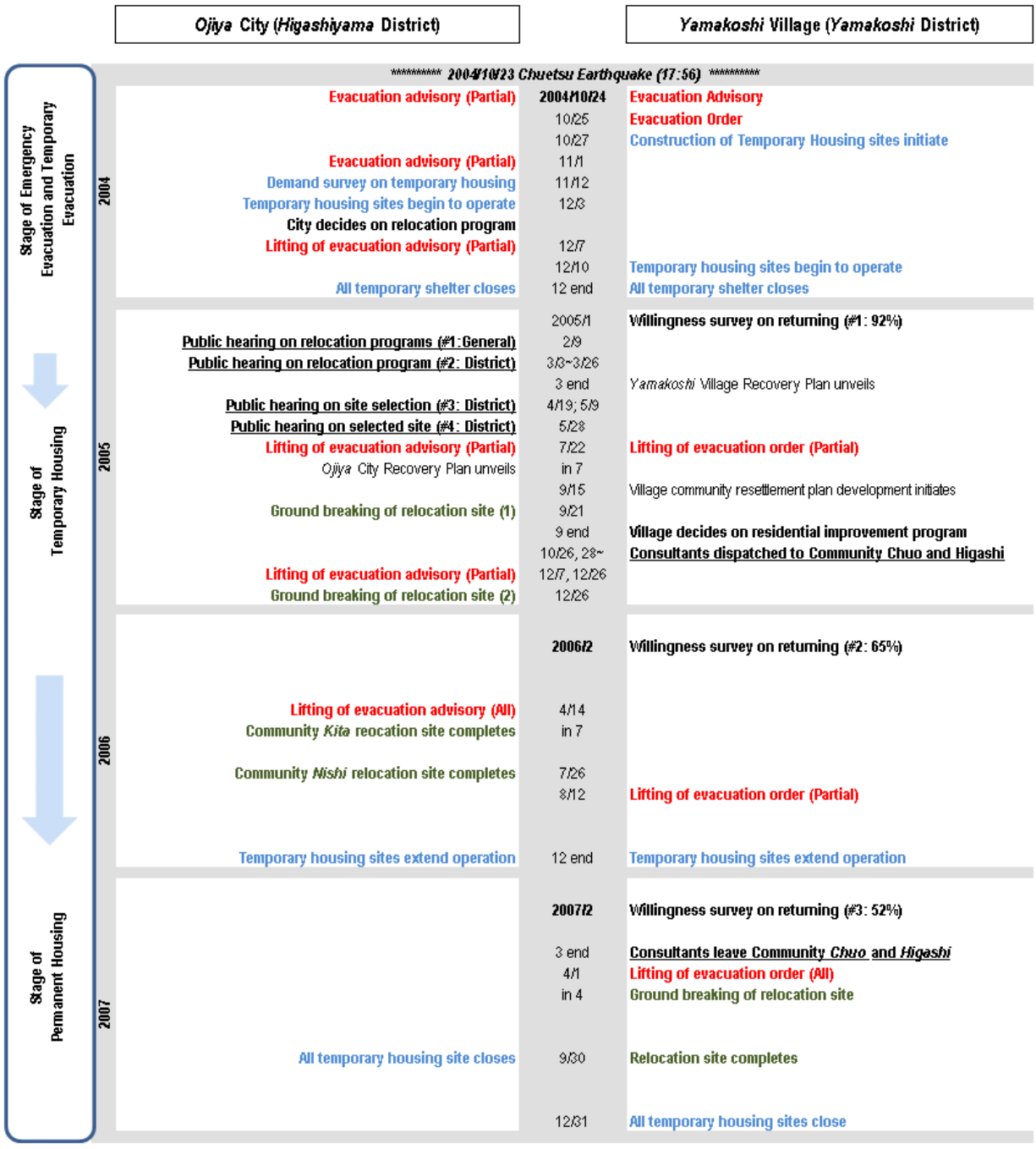
April 2006.[55] Meanwhile, *Yamakoshi* Village waited two-and-a-half years to completely lift the evacuation order. Three steps were involved; the first notice was given in July 2005, then in August 2006 and finally in April 2007.[56] These timings of lifting evacuation orders depended on the level of safety and degree of rehabilitation on basic public infrastructures in communities members were ready to reinitiate home constructions and put their lives back together when evacuation order was lifted. Consequently, communities that received advisory on lifting of the order were located in the northeastern part of *Yamakoshi* District, where damage from the earthquake was relatively small. The evacuation order on six most devastated communities, on the other hand, were in effect much longer. One of the important reasons why it took *Yamakoshi* Village a longer time to lift the evacuation order was the belief of its former mayor that it was extremely important for communities experiencing displacement together to collectively develop a consensus to return. Lastly, the groundbreaking of government managed sites, both the relocation and repopulation sites, was distinctive in timing, because *Yamakoshi* Village could not start site construction until all compulsory evacuation orders were terminated. As a result, the dates when both governments initiated site construction were more than a year apart.[57]

[55] For *Higashiyama* communities, the lifting of evacuation advisories was done four times. The first time was on December 7, 2004 for the three villages of *Utogi*, *Asahi*, and *Terasawa*; then on July 22, 2005 for the four villages of *Nigoro*, *Iwamagi*, *Tsumurisawa*, *Nakayama*, and *Koguriyama*; followed on December 26, 2005 for *Shiodani* village; and lastly, on April 14, 2006 for *Junidaira*.

[56] Eight communities (*Tanasuhara*, *Mushigame*, *Takesawa*, *Kannaidaira*, *Shoubu*, *Yamanaka*, *Katsuradani*, *Komatsugura*), one community (*Yubu*) and five communities (*Ikedani*, *Naranoki*, *Kajigane*, *Okubo*, and *Kogomo*) were the numbers of communities affected by the lifting of advisories on July 22, 2005, August 12, 2006, and April 1, 2007, respectively.

[57] Although construction of the relocation site by *Ojiya* City started in September 2005, groundbreaking of *Yamakoshi* Village's construction site did not happen until April 2007.

Figure 5.1 Resettlement timeline of two districts



5.1.2 Two governments guiding resettlements: Speed versus deliberation

1) Rationales for different timing in plans and actions

There were various reasons for having different timing in the planning processes by the two governments. *Ojiya* City generally managed to act earlier, mainly for two reasons; first, government officers and the city office were less affected by the earthquake, which enabled them to continue their operation. The City was able to establish the "headquarters for emergency disaster control" (*Kinkyu saigai taisaku honbu*), following the "Basic Act on Disaster Control Measures" (*Saigai taisaku kihon hou*),[58] in its office building within an hour after the earthquake, and immediately initiated emergency response operations and temporary shelter preparations (Ojiya City, 2006). Transition of emergency operation to resettlement planning was therefore also relatively smooth. Secondly, a request on supporting community relocation was received by the City government from a community in *Higashiyama* District at an early stage after community displacement. This forced the City to start considering the resettlement program for its affected communities. At that time, the City was not aware of any resettlement related programs; however, the City sought help from the prefectural government in early December 2004 in finding a solution to this issue. The prefecture government then suggested several available programs, including: i) collective relocation promoting program for disaster prevention, ii) small-scale residential district improvement program, and iii) relocating program for hazardous residential buildings adjacent to cliffs (*Gakechi kinsetsutou kiken jyutaku iten jigyo*). Eventually, the City decided to adopt the collective relocation program as the main program for supporting communities' resettlement by the end of December, 2004. City officials believed that the program carries legislative power to relocate members of communities collectively into cities, which, in the long-term, minimizes the costly operation of public services in the depopulated area.

The *Yamakoshi* Village government, on the other hand, did not respond to community resettlement issues until later. There were several reasons for the late response; first of all,

[58] Article 23 of the "Basic Act of Disaster Control" allows all government bodies, including prefectural, city, town, and village governments to establish headquarters for responding to emergency situations in case disaster occurs or is likely to occur in their jurisdictions. The role of the headquarters is to promote control measures that will reduce further damage from the disaster (Research Committee for Disaster Management Policy, 2004).

village officers and government buildings were severely affected by the earthquake, to an extent which even disabled them to immediately establish the headquarters for emergency disaster control. The Village finally managed to establish the headquarters early the next day in *Yamakoshi* junior high school, instead of in the village office, which was damaged. The government and the headquarters were then displaced to a branch of *Nagaoka* City government on the next day, together with all village communities. The office was displaced a second time, approximately one and a half months later on December 7, 2004, to another location in *Nagaoka* City office (Nagaoka City, 2006). Such consequent displacement of the city government that is responsible for providing resources for disaster relief and recovery made it difficult for the Village to initiate community resettlement at an earlier stage. Second, because the Village put priorities on macro politics in order to sustain village administration upon recovery, the time it would take for the resettlement of communities was less emphasized. The village already had a plan to be merged into *Nagaoka* City in the following April 2005, thus, finding a way to sustain their presence in the administrative change while recovering from the earthquake was the critical issue for the village government. Consequently, the local government put effort on negotiations with the national government and prefecture initially, in seeking the village's sustainable presence in national and local politics. As a result, planning related to villagers' return did not take place until almost a year later.

2) Relocating community with speed: *Ojiya* City Government

The two governments also differed in the ways they approached communities to support their livelihoods to recover. The *Ojiya* City government put effort in approaching the community uniformly and formally, particularly by way of holding public meetings. Three purposes were intended to be achieved through these meetings; the first set of meetings was to explain and provide information on the relocation program that the government decided to support. In this stage, a total of four official meetings were held in the city government office, temporary housing sites, and back in the *Higashiyama* communities. The second set of meetings was aimed at identifying relocation sites with the communities and their members; the government prepared five prospective sites – three of which were owned by the government, while the other two were privately owned. These private lands had reasons to be proposed; one had a history of planned subdivision development that had failed 20 years ago, and the other had

a possibility to be sold with an existing relationship between the land owner and the relocating community. The series of meetings held to identify the relocation site included site visits and a preference survey targeting the relocating population. Thirdly, the last set of meetings was about confirmation of the two sites selected, both of which were selected from private lands. All these three types of public meetings and interactions on planning relocation between the local government and the *Higashiyama* communities were done over a period of four months, in the early stage of planning resettlement, between February and May, 2005. Throughout this period, the government put effort in providing information equally to displaced communities and populations, and called for public meetings through city news reports and documents that circulated in the temporary housing sites. By such a procedure on promoting relocation, *Ojiya* city officers had direct interactions with communities and their members.

Following these public hearings for site selection, ground breaking of the two relocation sites was initiated in mid-September and late-December of 2005, respectively. These sites accommodated two types of households: those that needed to live in affordable housing and those that wanted to live in individually constructed houses. The affordable housing was designed to accommodate low-income households in a traditional large apartment building complex. Individual houses were, on the other hand, built as detached housing units on the subdivided land, by individual contractors. The benefit of constructing a house on such a government prepared site was mainly on its price; the cost of land to households was approximately one-third of the maximum market price.[59] Furthermore, some financial assistance, i.e. exemption of interest on the housing loan, is provided if households decide to build their house on the land prepared by the government. By the end of July 2006, construction of public housing on one of the government lands was finished, and households began to settle in. Meanwhile, the individual houses took a little longer to complete, but eventually households were able to move in by the end of September 2007. Soon after all *Higashiyama* households found permanent places to live, *Ojiya* City then closed the temporary housing site on the last day of September 2007.

[59] The "Act on Support for Reconstructing Livelihoods of Disaster Victims (*Hisaisha Seikatsu Saiken Shienhou*)" regulated the unit price of land, based on the level of damage and income of a household. Households that incurred the most damage but have less income were given financial priority. As for the land price, the least expensive ones were sold at a price that is approximately one-third of the market price ((1 tsubo (3.25 ft^2) priced at $400 (JPY 40,000)), which was over $1,100 (JPY 110,000).

In brief, the process of the *Ojiya* City government in leading communities to resettle was rapid, more uniform, and relatively formal. However, because the government only had few personnel to carry out this formal procedure, the frequency of public meetings was very low. Because informal interactions between the government and communities were also not common, the flow of information and the role of government in influencing communities in resettlement decisions and actions were very limited. The limited interaction with the government created confusion with the resettlement process and actions villagers needed to take, and many individually visited government offices to clarify their situation. Unfortunately, officers in charge of each community changed frequently, which made villagers feel uneasy.

3) Plan deliberately before community returns: *Yamakoshi* Village Government

The planning processes carried out for returning communities by the *Yamakoshi* Village government were quite different from those implemented in *Ojiya* City. *Yamakoshi* Village interacted with the returning communities in a more varied and informal manner, as official resettlement plans did not initiate early. During this moratorium period, before official resettlement plans were implemented, the village officers put utmost effort into providing information about the damage status and recovery conditions by informally communicating with the communities. Furthermore, the government conducted the first survey on willingness-to-return in January 2005 (City Planning Institute of Japan, 2007).[60] Despite all these efforts put into action, the formal plans and actions to return did not start until approximately a year after the earthquake, in September 2005. Such lagged initiation of resettlement plans as well as informal interactions between community members and the Village government gave rise to an unequal distribution of information among the returning communities. This meant that communities having more political connections with the local government tended to accumulate more information, while communities having less links to politics needed to strive for more resettlement information.

Nevertheless, *Yamakoshi* Village government's official response was careful plan-making processes that required patience and time. Such planning process came upfront a

[60] Three surveys were conducted annually in January 2005, February 2006, and February 2007, all of which aimed to use the results as input to district/village plans. The result of each survey was 92%, 65%, and 52%, respectively, which made clear that the willingness of affected populations to return decreases as the years pass.

year and a half after the government decided to support repopulation. After the decision, the Village dispatched planning consultants to each of the 6 most devastated communities upon crafting resettlement plans, which were initiated at the end of October 2005. The government decided to take this approach, because outsourcing planning work to professionals seemed to be the best way to make plans that would be tailored toward the needs of each community, while at the same time facing a reality of limited capacity of planning officers for conducting appropriate planning displaced communities. Consultants in each community perhaps had minor differences in their planning processes; however, most of them followed the village's ideal view of putting the community first, by hosting frequent meetings to exchange ideas and provide feedback to the community members. As a result of these meetings, three variations on resettlement were planned for households in six *Yamakoshi* communities; to permanently settle in: i) public affordable housing on government's land, ii) new houses built on government's prepared land adjacent, but higher in altitude, to their original neighborhood in a valley floor,[61] and iii) rehabilitated houses or reconstructed individual houses on original lands. The entire stage of planning resettlement lasted approximately a year and a half, from the end of October 2005 until the end of March 2007 (Nagaoka City, 2008). At this time, the *Yamakoshi* District was approximately one and a half years behind the *Higashiyama* District's schedule regarding government-led site construction.

The evacuation order in *Yamakoshi* District was finally terminated on April 1, 2007. Construction and rehabilitation of all housing units, including public housing and individual homes were then initiated. With villagers hoping to return as soon as possible, the construction was accelerated to shorten the period; most of the construction started in April and was finished by the fall of that year. People then began returning to their neighborhood around September, and by the end of December 31, 2007, all villagers had left the temporary housing (City Planning Institute of Japan, 2007). In summary, the approach of the *Yamakoshi* Village government toward its communities can be explained as lagged, varied, and informal, as compared to the way *Ojiya* City handled community resettlement. The other salient difference to note was the outsourcing of the resettlement planning process by the *Yamakoshi* government, which did not

[61] The new relocation site is on the upper west side adjacent to the original neighborhood. The communities needed to relocate from the original site because of the increased risk of landslides and floods from the earthquake. Because the new site is located higher up on top of the valley, relocated villagers could look down and see their original neighborhoods from the new site.

hesitate to use this alternative for an extended period of time for the sake of better resettlement planning.

The guiding of community resettlement by these two governments was contrasting, although the total amount of time needed to permanently settle all affected residents was about the same □ approximately three years. In short, *Ojiya* City valued speed in resettling communities while *Yamakoshi* Village emphasized careful planning before action. With such a difference in their principles, the subsequent resettlement procedure was also distinctive; that *Ojiya* City had more uniform and formal access to the communities, while *Yamakoshi* Village had a less uniform and more informal approach. In either case, however, both local governments had limited resources for resettlement planning after a devastating earthquake. For example, although *Ojiya* City government officials and the government buildings were less affected by the earthquake, they were still constrained by human resources, as there were no additional officers who could fully participate in plan making in the aftermath of the earthquake. With such personnel shortages, interactions between government officials and villagers were minimal. Meanwhile, the *Yamakoshi* Village government was largely devastated by the earthquake, which disrupted its normal operations, and it needed additional time to reestablish its administrative functions. The Village government was also lacking in professionals who could devote time to plan making after the earthquake with its overwhelming volume of work, and thus decided to hire specialists to pursue bottom-up planning processes. In both cases, the capacity of local governments to fully conduct resettlement planning after a devastating disaster seems highly uncertain and limited.

5.1.3 Responses of two Districts: Toward integration and disintegration

1) *Higashiyama* District, *Ojiya* City

As resettlement processes were differently undertaken by the two local governments, differences began to emerge in the two districts of *Higashiyama* and *Yamakoshi* in their resettlement phases. *Higashiyama* District began to reinitiate regional activities earlier than *Yamakoshi* District, in a parallel manner to *Ojiya* City's faster actions. To cite an example, the regional district council of *Higashiyama* restarted in May 2006, immediately after the evacuation advisory was terminated in all communities. Moreover, communities in *Higashiyama* District

initiated to organize themselves in recovery actions, and such collaborative actions were not apparent in the pre-earthquake period. The district leader explained their situation at that time:

> When the regional district council reinitiated, we were aware that 10 villages of *Higashiyama* District needed to work toward uniting. At that time, however, all communities were beginning to act independently, as each community had a different degree of devastation from the earthquake. I therefore thought that sharing damage information across the communities in *Higashiyama* was very important, in order to understand the sufferings of other communities. Otherwise, individual communities would only care about their own recovery and neglect to think about recovering as a whole. So we decided to do a damage assessment of each community, with the help of community leaders across the District. Luckily, we got public support in doing this, from the national, prefecture and city governments, as well as volunteers …

With the joint effort of the district and the public, communities extended collective works through such activities as damage assessment, community mapping, and roundtable discussions in the resettlement phase. A long-term vision of uniting the district to one[62] was finally going to happen by communities experiencing a process of displacement to resettlement.

2) *Yamakoshi* District, *Yamakoshi* Village (currently *Nagaoka* City)

Responses of *Yamakoshi* District were different from that of *Higashiyama* District. *Yamakoshi* District could not reinitiate their normal administrative activities until later due to the lagged timing of the lifting of the evacuation order; the first residential council after the earthquake did not reinitiate until July 2007, which is approximately three years after the earthquake. Furthermore, collective actions that took place in several communities prior to the earthquake did not reemerge during the resettlement phase, while informal plans to unite several neighboring communities continued to fail. One significant example was a plan that failed to reestablish three neighboring communities as one neighborhood toward permanent settlement. The three communities were among the six most devastated communities in *Yamakoshi* District and were provided an advisory on the difficulty of returning to their original lands due to geological hazards. Since these three communities had long been functioning collectively in

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[62] The concept of uniting 10 communities into one administration (*Icchona- ka*) in *Higashiyama* District emerged way back in the mid 1980s. It was because some members of *Higashiyama* regional district council were concerned about long-term depopulation of their region. However, the majority perceived it as too soon to act, and preferred to focus more on urgent development needs of that time. These needs, stated as "three sacred treasures (*sanshu no jingi*)", included road development, water distribution, and merger of elementary schools.

Yamakoshi Village, it would seem natural for returnees of these communities to consider establishing a collective neighborhood, especially with aging and depopulation being significant factors. This merger plan was therefore informally initiated under a leader, immediately after the initiation of resettlement planning. The plan became more credible around the spring of 2005, as it seemed that a plan for villagers to return to *Yamakoshi* was about to happen in the near future. Furthermore, the leader had successfully continued informal conversations with the village government, leading most of the households in the communities to believe that the plan will be implemented. This plan, however, began to derail toward failure in the next half year, owing to strong opposition from one of the communities. The rejection derived from an emotional entanglement that had emerged a long time back regarding issues related to development. The leader who was responsible for the plan commented about it:

> It was the only timing to merge the communities. Because *Yamakoshi* is facing severe depopulation, resettling together in a neighborhood meant a lot to the government and to the communities in the long-run. Activities requiring collective efforts can be performed, particularly snow plowing during the winter, as government and communities will need to bear more burdens with depopulation and aging …but at the end of the day, all communities returned to their neighborhood, because we couldn't get rid of the emotional conflict that developed between the communities a long time back. Our community offered to change its name, give up the land and move somewhere else, but this was vigorously rejected…

As this case shows, although some informal efforts to unite communities in the district emerged in *Yamakoshi*, it did not happen because of the emotional conflict that had developed a long time ago. Furthermore, favorable opportunities to remove such emotional conflict did not appear to develop in *Yamakoshi* District, because communities did not have much opportunity to work together across the District. Limited interactions over the three-year displacement period among *Yamakoshi* communities had perhaps hindered them from reinitiating collective and self-organizing activities. Instead, individualism and competitiveness of communities prevailed with the external financial support directly provided to individual communities rather than to the whole district of *Yamakoshi*.[63]

[63] Because the national law generally does not financially support individual livelihood recovery, most of the support was provided through communities after the *Chuetsu* earthquake. The collective relocation program and residential improvement program are the best examples of such a rationale. The problems arose when the support was only given to the communities that had found some ways to reach the resources, making some communities without strategies to fall behind in recovery.

3) Household return rates by communities in the *Nijumurago* Area

Household return rates by communities in the *Higashiyama* and *Yamakoshi* Districts varied significantly. Although both districts have a 52% household return rate in average, the detailed return rates by community differed between the two. *Higashiyama* District had return rates of communities varying from 0% return (all displaced) to 100% return (all returned). The return rates of other communities also varied in this district, from as low as 28% to as high as 91%. Meanwhile, *Yamakoshi* District had less variation on the return rate, varying between approximately 40% and 70%. These different resettlement patterns imply that the dynamics of planning processes and the decisions to be made were very complex inside the communities.

5.2 Resettlement processes in community context

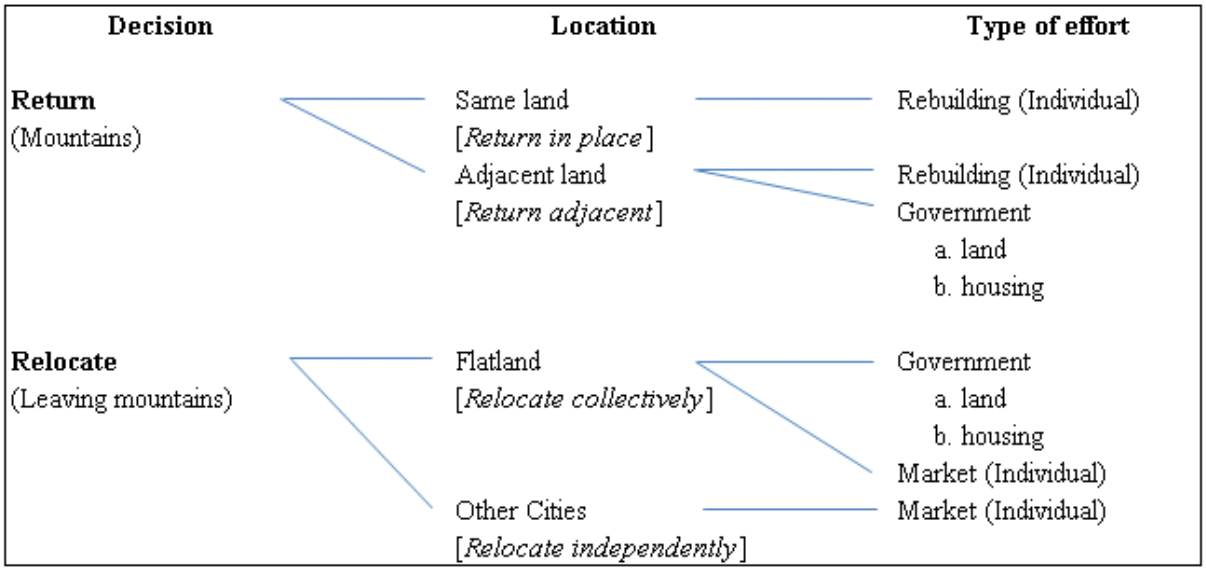
5.2.1 Resettlement patterns and timelines of five selected communities

1) Resettlement patterns

Household resettlement patterns in *Nijumurago* communities can be described by location and type of efforts (see Figure 5.2). There are four types of resettlement outcomes that households selected for permanent living place: i) original land back in the mountains (return in place), ii) adjacent land back in the mountains (return in adjacent place), iii) commutable flatlands different from the original land (relocate collectively), and iv) other cities different from the original land (relocate independently). Different types of efforts are further observed within these classifications; first, households that returned to the original land mainly rebuilt/rehabilitated their home by individual household efforts. Second, households that moved back to adjacent lands either rebuilt their houses individually or used the government land prepared under the residential improvement program. The program accommodated two types of households, one of which was the lower-income households and the other was households needing to reconstruct homes. Third, households that relocated to flatlands in group either settled on the government land or bought a house in the private market. Two types of households, those of lower-income and those needing constructed housing, were accommodated in the government land with the relocation program. Lastly, there were small numbers of households that individually relocated to place of their preference, in places close to *Nijumurago* where households could commute or far from the *Chuetsu* region to start anew in other cities,

either living independently or moving in with their children. Households of this type mainly purchased a house in the market or constructed new homes, or joined other family members without acquiring new homes. But as stated earlier, their numbers are not significant.

Figure 5.2 Resettlement patterns of households



Resettlement patterns of communities, therefore, can generally be explained by the combination of household resettlement patterns. Some communities had the majority of households relocated into flatlands, while other communities had the majority of them returning to their original neighborhood. Other communities had mixed patterns of grouped households taking different resettlement paths as mentioned above.

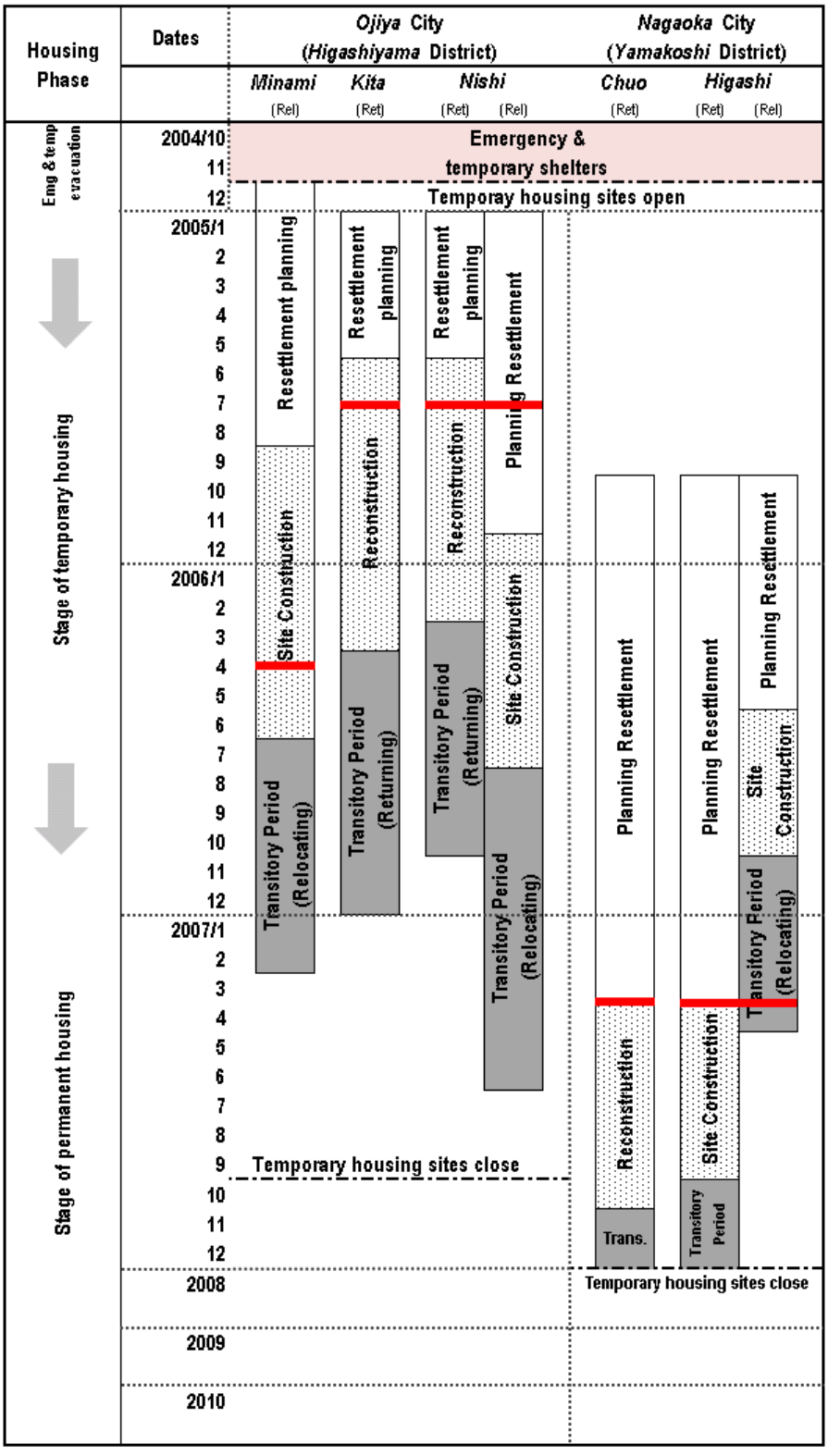
2) Resettlement timelines

Resettlement timelines of five communities were distinctive between three communities studied in the *Higashiyama* District and two communities studied in the *Yamakoshi* District (see Figure 5.3). The recovery pace was simply reflective of the timing of plans and actions introduced by the local governments; communities in the *Higashiyama* District in general had a faster pace of recovery throughout all periods of planning resettlement, site construction, and

transitions.[64] The duration of the planning resettlement phase and periods of construction and transition that followed gave communities an impression that resettlement is advancing smoothly. However, the situation was different for communities in the *Yamakoshi* District; there was approximately 9 months of moratorium before the initiation of community resettlement planning, and crafting the plan lasted one and a half years. However, the subsequent construction and transition periods were short, because the closing date of temporary housing sites was fast approaching.

[64] Four dynamic models of settlement processes are defined by Scudder for schemes of government-sponsored voluntary settlement (1985). These include i) planning, initial infrastructural development, and settler recruitment; ii) transition; iii) economic and social development; and iv) handling over and incorporation. Resettlement after disasters has differences in contextual definition, although the basic flow of government management in resettlement process is similar. The resettlement timeframe in this dissertation is the first stage in the Scudder model, the stage of planning, initial infrastructural development, and settler recruitment. Following his model, time of displacement to resettlement is divided into the following periods: i) planning resettlement, ii) reconstruction/rehabilitation, and iii) transitory.

Figure 5.3 Resettlement timeline of communities



By referring to the general resettlement patterns and timelines described in this section as a guide, the planning processes of the five communities will be chronologically described, so that a series of resettlement actions within communities can be analyzed. Narratives of each community will start with the most recent phase first, on the location where the community had permanently settled. It will then jump back to the time of communities living in the temporary housing sites, with information that includes conditions of temporary housing sites, official resettlement procedures, and informal processes, to describe the resettlement processes that took place inside the communities. In the last portion of each community discussion, rehabilitation and construction as well as settlement procedures will be explained.

5.2.2 Communities in the *Higashiyama* District

1) Community-led relocation with government subsidies: Community *Minami*

> We signed a petition for collective relocation and went and presented it to the [*Ojiya*] City office to ask for support. It was in December 2004. (A leader, Male, in his 70s)

Resettled location: Government flatland

By the end of February 2007, all community members had a new permanent residence in the flatland that was prepared with the government relocation program. The resettlement process came to an end in this community approximately two and a half years after the earthquake. The new site is convenient, with nearby shopping malls and in proximity to downtown *Ojiya*. Moreover, the site is within commuting distance to the original community back in *Higashiyama*, which was one of the important requirements in relocating for households engaged in farming and *Koi* (carp) breeding. To be collectively relocated to such a convenient location, the community had taken a lead in the resettlement processes to gain support from the local government, while also having put a large effort in organizing themselves in building a consensus to pursue collective relocation.

Stage of resettlement planning

Throughout the displacement period, most of the members spent time together in the temporary shelter and temporary housing sites prepared by *Ojiya* City. The temporary housing site was the largest one among the sites prepared by the City; however, all communities in this

site were enabled to stay in close physical contact with other community members, as *Ojiya* City decided to collectively manage households by communities.

Community *Minami* was one of the earliest communities transferred to the temporary housing site on December 5, 2004. Soon after their re-displacement to temporary housing, the village members began to think about their permanent settlement. Until then, the damage conditions of their former neighborhoods and progress of early rehabilitation were the predominant concerns, especially because community members could not think anything of their future while in the temporary shelters, with the stress and chaos they continued to suffer as a result of the earthquake. There was an unofficial, long-time community leader that initiated the conversation on relocation, because he believed that he owed elder community members his current social status. He therefore wanted to work and help his community and fellow members. He said:

> I didn't want to force the community members to relocate, but I wanted to help them. So I explained about the relocation program that I knew and emphasized to them to think it over carefully... I became aware of this program because I knew of a community that used this in the past, after experiencing severe damage from snow avalanche…We probably had about six community meetings on this issue and everyone began to express his/her interest on relocation in about the third meeting…I then carefully confirmed their desire over and over again before approaching the government about this, because we can't back off after everything starts…

Signatures of all community members were collected and then submitted to the City government by the end of December that year.

Informal conversations, however, took place outside such formal community meetings. A respondent who has one of the longest family histories in the community commented that he coordinated the community households under a public setting to make the plan work. As his household was the head of the *Maki*[65] group in the community, his decision to relocate or return was critical for the community, as many households would follow him. With several requests directed to him personally to relocate, he, together with other members, decided to relocate to the flatland. Upon expressing his intent, however, he encouraged other members to follow the decision of the leaders who were negotiating with the City, to keep the community in balance.

[65] See chapter 4 for description.

He, however, in return gave up his status and power that he held in the former community, represented by a large historical house passed down for generations as the symbol of wealth, tradition, and power. Another respondent also commented on informal conversations that took place outside the public meetings of the community, about many conflicts that emerged during the resettlement process. She explained that she rebuked and convinced some members who disagreed with relocation, as the program had to be pursued collectively as a community. Her inner thoughts were not always for collective relocation, as she had always wanted to leave and cut the strong networks and ties to her community. Nevertheless, she gradually gave up this thought, as it was important for her household to align with the community policy for everyone's happiness. Many others also decided to follow the community consensus, because they understood that they cannot be selfish, particularly after recognizing the significant contributions of village leaders and members. Taking a cooperative process in this community was the solution to find a permanent place to live collectively, by using the government relocation program.

The *Ojiya* City government responded to the request submitted by this community in December 2004, by holding a public meeting for them on March 7, 2005. The purpose of the public meeting was to explain the function and procedures of the national relocation program that the community would be using. Following this public meeting, site selection and construction were carried out in a sound manner, as the leader had already selected the prospective relocation site by the time the City accepted the relocation request. With this leader having many connections through his political activities, a convenient land parcel in the *Ojiya* flatland was proposed at the initial stage after the community decided to relocate. No one opposed the location, as its condition was suitable, and subsequent negotiations with the landowner went smoothly. The City accepted the proposed land by the *Minami* community as the relocation site in April 2005, as the necessary procedures had already been finalized.

Site construction and permanent settlement

About a half year later in September 2005, groundbreaking of the new residential area in the selected site took place. The community once again had to go through a difficult task of dividing the land into individual lots. The leader again took the leading role; each household requested a desired lot size but the leader made the final arrangement. Individual houses were

then constructed by each household; in some cases, several households arranged jointly for a contractor to take advantage of cost savings. Finally, each household moved into their newly constructed home when completed; the first group moved in July 2006 and the rest by mid-February, 2007.

Overall, Community *Minami* had a leader who had knowledge of collective relocation, techniques to negotiate with local governments, and enabling connections with politicians to pursue the community's relocation plan. Under his leadership, the community was successful in gaining support from the local government. Achieving this goal, however, required the community members to act in a collaborative manner. This contributed to balance community members in keeping the resettlement pace together, by sharing information and building consensus while sacrificing their independent actions to align with the community strategy. Some members later recall how much they wanted to have their normal life back as soon as possible during their time of displacement. Such mentality that pushes for speedy resettlement as well as the consensus to resettle together contributed to the community members' acceptance of the housing plan presented by the leader without much opposition. A respondent mentioned, however, that she would often feel envious of households that had a longer time to think about their relocation, because she thought it resulted in building better and larger houses.

2) Self-organized return without government subsidies: Community *Kita*

> The City was such pro-relocation…they didn't support us returning. So we decided to make a direct appeal to the prefecture government for support. (A leader, Male, in his 50s)

Resettled location: Original neighborhood

The majority of the community members returned to the original neighborhood by the end of 2006, which was a little more than two years from the time of the earthquake. Almost all members were able to reconstruct or rehabilitate their homes where they originally stood; however, few had to identify new locations to construct houses in adjacent lands of the community. The location of the neighborhood is traditionally convenient, with public service offices in proximity to *Ojiya* City downtown. The community's predominantly younger population had commuted to the cities before the earthquake and decided to continue this lifestyle by coming back to the village after displacement. To return collectively with all other

community members, community *Kita* informally organized themselves while working collaboratively toward a return without any support from the local government.

Stage of planning resettlement

Community *Kita*, together with other *Higashiyama* village communities, was provided with information regarding the maximum stay in the temporary housing, which was two years. The City underscored the time limit in accordance with the "Disaster Relief Act" (*Saigaikyujyohou*), which regulates the length of operation. Consequently, members of community *Kita* signed a contract, upon their arrival to the site on December 19, 2004, that included the time limit of their stay. As this site was one of the smallest ones in accommodation capacity, occupants of the site were limited to this community. Such an environment proved advantageous for *Kita* villagers, as they often were able to share their anxieties while discussing their future return and rebuilding their communities.

Soon after arriving to the temporary housing, the majority of villagers began to think about their permanent settlement, with the limited length of stay at the temporary housing uppermost in their minds. Formal meetings, including public hearings, prepared by the *Ojiya* City government were held quite frequently at an early stage of temporary housing. The community also had official meetings (*Chonai kai*) approximately once a month throughout the resettlement phase. However, as the resettlement policies of the City on relocation became more apparent, community members began to notice conflict with their plans, resulting in dwindling participation at the meetings held by the City. A respondent recalls:

> The city officials came [to the temporary housing site] and explained about the relocation policy. Every time they came here, they asked us why we were returning. They even said, 'you just need to be thankful for the availability of relocation policy', trying to make us use the policy. Comments like that only made us think more strongly about coming back together… (Male, in his 50s)

The majority of villagers then, regardless of the extent of earthquake damage they suffered, made decisions, within half a year after their arrival to the temporary housing, to permanently resettle in the former community.

The process after deciding to return to the former community, however, was not simple for all. Unlike the situations found in village *Minami*, this community did not have a leader

who organized and coordinated the community. Although the majority of households decided to return soon after the formal interactions with the City government, some households were facing further complication to make a decision, particularly if their lands were severely damaged. Few respondents made reference to the decision making of the households having difficulty, i.e., that they were persuaded to stay and work toward returning, because losing any households from such a small community as *Kita* was crucial for future sustainability. Households that were persuaded to stay also touched on this subject; they did not look to any selfish reason about being asked to stay, but rather they considered it a compliment they were being asked to stay and felt their family was very much accepted by the community members. All of this seems to be coming from the sense of compromise of this community in sustaining community; many explained about community's consensus to return together, because members are aware that leaving behind the community meant also leaving burdens to the members. After all, members were aware that returning to the neighborhood would not benefit them financially without public assistance, but they decided to do so anyway at an early stage. The informal conversations as well as sense of compromise extended in this community had a large influence in keeping the community together, although returning would burden them financially. Additionally, many respondents pointed to the fact that the small size of the temporary housing site contributed to better develop the inter-community relationship.[66]

Reconstruction and permanent settlement

Households in community *Kita* continued to struggle while they were preparing to permanently return. Households wanting to return as soon as possible began arranging contractors and carpenters in early summer of 2005, before the advisory on evacuation was terminated. Immediately after the lifting of the compulsory evacuation, the rehabilitation and construction of houses began. However, the reconstruction process did not go as smoothly as planned for some households. The households that needed to return to the closest possible land after losing their former land[67] particularly had to go through many extra steps, some of which

[66] Women in this community had established a group that focused on gatherings and sharing quality time in the temporary housing site. Their activity contributed in sharing information during that time, and currently extending to such activities as planting trees and flowers in public places around their neighborhood.

[67] In almost all the cases, households that had several pieces of lands in their community thereby decided to reconstruct on such land parcels. However, there were few cases that village leaders, often former *Maki* heads, gave their lands to households that did not have any lands build on.

included administrative procedures and topographic surveys to change the former land use. This procedure had to be followed as most lands in the mountainous communities were agricultural, which do not allow construction of residential buildings. Furthermore, problems with new construction of infrastructure, i.e. water supply, became apparent, as the local government is not required to provide such service to non-residential areas. One respondent described his encounter with the local government during the reconstruction stage: First, they were required to have a topographic survey done at their own expense. Next, they were asked to pay a construction charge for the water distribution system for their use. Both costs were too much for a household to bear, and therefore the community requested support from the prefecture government as a last resort. With a direct appeal to the prefecture government, households in the community needing similar assistance were provided funding from the *Niigata Chuetsu* Earthquake Recovery Foundation (*Niigata-ken Chuetsu daishinsai fukko kikin*). Throughout the construction phase, the community kept sharing information through community meetings (*Chonai kai*) as well as informal conversations to update their situations for returning. However, the households' strained relationship with the local government became exacerbated especially after their appeal was positively answered by the prefecture government. Finally, some households of this community initiated their return in April 2006, and almost all villagers returned about a half year later, by around November 2006. It was a little more than two years from the earthquake, and was just before the scheduled closing date of temporary housing.

The resettlement process of this community did not involve any strong leader or leadership to steer their collective return. However, with the community being collaborative while having a sense of compromise with other members, all households decided to return to the village at an early stage. One of the salient reasons for this community being able to minimize households dropping out was the informal communications that provided a sense of belonging to the community. The small temporary housing site, in this respect, had also contributed to creating a supportive and collaborative atmosphere, which influenced to strengthen the community's consensus on returning together for future sustainability. Overall, no obvious negative responses on returning to the neighborhood were given. None of the households had felt being forced by the community; rather, they took it as a satisfactory decision in consultation with other community members.

3) Individualistic resettlements: Community *Nishi*

> Although there was a meeting room in the temporary housing site for us, we never gathered there to talk about resettlement or the future of the community… (Male, in his 50s)

Resettled location: Original neighborhood, government flatland, and housing market in flatland

Households in *Nishi* community took mainly three different paths to resettle permanently. The first set of households returned to their lands in the original neighborhood. The location of the community is traditionally convenient, with available public services nearby, and also in proximity to downtown *Ojiya*. The second set of households relocated to the flatland, to the site prepared by the local government. This site has two different types of housing; one is the affordable housing for disaster victims and the other is the subdivided lots sold to individual households. The third set of households relocated to the flatland, purchasing a house in the private market. These households may have relocated to different locations, yet they all live within commuting distance to their former land. Interestingly enough, the number of households that followed each of these three paths was almost the same. The length of stay in temporary housing for these groups was different, however; the group that moved into houses in the private market had the shortest stay, as they were each free to choose a house that suited their need. Of the remaining two groups, members that returned to the original neighborhood had a length of stay for approximately two years, up until the end of October, 2006. Households that relocated to the government prepared land resided in temporary housing the longest, taking more than two and a half years, up until June of 2007. The lag in their resettlement was due to some households facing financial complications, which unexpectedly developed after deciding on relocation. With this group relocating to the government prepared land, the majority of households in the *Nishi* community found a place to live by the end of June 2007.

Stage of resettlement planning

Members of the *Nishi* community arrived at the temporary housing site on December 19, 2004. This site was relatively small, with only one other community placed there. The difficulty of living in temporary housing was the size of the unit, which was too small for the

village households.[68] Some suggest that separation of households into separate housing units, due to the small unit size, negatively affected communications within the communities (Ojiya City, 2006). Community *Nishi* was perhaps affected in this way, but their communication also suffered because they did not gather to use the community center that was prepared for the displaced communities.

Nevertheless, all of the *Nishi* households were very concerned with their future – with their place of residence and recovery of their work – just as other households in different communities. Consequently, the majority of households participated in the government-prepared public hearings on relocation, which were initiated soon after their transfer to the temporary housing site. However, with dissolving ties and eroding trust in the community even before the earthquake, almost no one in the community attempted to initiate formal or informal communications across the community. There were no gatherings or conversations held on this issue outside the public hearings that the government arranged. No public community meetings (*Chonai kai*) were held throughout the displacement period, which meant there were no opportunities for sharing anxieties, frustrations, or even hopes, with other community members before making any decisions. There were, however, minor informal communications held between the households that were told their former land was uninhabitable. This was because the government initially explained to them that the relocation program could only be used if certain numbers of households would relocate collectively.[69] Consequently, some households negotiated with neighboring families to relocate so that they could use the government relocation program.

One way or another, however, the decision making was basically individually implemented in this community. Many interview respondents explained about their increasing

[68] After the Kobe earthquake experience, most of the temporary housing units were prepared to accommodate nuclear households with four members in urban areas. Consequently, household size in rural areas did not fit in the housing unit size and needed to be disaggregated. In many cases, grandparents lived separately in a smaller housing unit while their children and grandchildren lived in a larger unit.

[69] Rules on collective relocation fundamentally promote and regulate a certain number of households to move out from original hazardous land collectively. However, this rule was modified to be more flexible in the case for *Chuetsu* earthquake so that any households in the area designated hazardous by government can use the program, provided that more than five households are relocating collectively to the new site. As this change was gradually instituted and not widely publicized, some households were not aware of it.

anxieties as time in the temporary housing elapsed, without any interactions with other households. A villager commented:

> It was such a lonely process. Our community never had an opportunity to talk with other members [*about resettlement or recovery*]. The speed of recovery was completely different by each household and it was uneasy... I had to work hard to recover my workplace during the day as it was also badly affected by the earthquake, but whenever I came home at night [*to the temporary housing*], I often found out that the neighbors left silently without any goodbyes…seeing lights diminishing one by one … made me feel so alone and depressed … (Male, in his 50s)

The timing of resettlement decisions, however, was quite early and uniform across the three groups mentioned. It was because the decision, whether or not to use the government program, came at once. The majority of households that decided to relocate to houses in the market either made up their minds immediately after the earthquake or made a final decision after comparing it with the government relocation program. The rest of the households that returned or relocated to the government prepared land also had to make their decision on its use by March 2005, for the City to initiate site design of the collective relocation. As a result, the majority of households had their preferred plan on their permanent settlement within half a year after living in the temporary housing.

Distrust between those members that decided to leave and those that decided to stay aggravated around this time. Although community members did not have many interactions on resettlement decisions, returnees had expected that their members had similar emotions toward their original community and thus chose to return. But the outcomes were different from what returned households had expected: Majority of households made individual decisions to permanently live in other places but original ones. This fact caused a large emotional disturbance to those that believed members would be returning, and made them no longer wanting to interact with households that decided to leave the community.

Although community *Nishi* seemed to be segmented from beginning to end during the resettlement process, attempts to act collectively, however, existed. Women organized themselves to support the elderly in the temporary shelters, to distribute food, clean up their shelter, and handle garbage, in the first two months of displacement. However all these communal systems that elaborated could not continue in the temporary housing site, as the *Maki*

tradition, persistently exercised in this community, reinitiated to dominate in the community relationship. With the *Maki* tradition, males, particularly the landlords with vast holdings, are provided with more power in community decision making, thus women were often put last for any communal decisions and actions. Such tradition once again became apparent in the temporary housing phase, as the community had gotten back some order and settled into a routine from the post-earthquake chaos. As a result, the women could not restart their volunteer activities in the temporary housing or initiate any new activities for the rest of the period. A female respondent explained:

> In the temporary shelter, women began to say that outside volunteers are treating us too well. So we gradually agreed to start working on anything we can handle by ourselves. Working together in the temporary shelters went well, because we were working for the elderly from two communities, and it all became not only about our community. However, things changed upon our arrival to the temporary housing site, because we were regrouped tightly into our community. On one hand, this made us understand what was happening in the community more easily, but on the other hand, it made it difficult for us to do whatever we would like to do… (Female, in her 40s)

Preparation on place to live and permanent settlement

Without any formal or informal communications across this community, resettlement processes following their decisions varied by individual households, although they follow three typical patterns. Generally, households relocated to the market housing had the largest flexibility in terms of location and time. They were also free from local government's control in preparing their permanent residence, as they were not affected by compulsory evacuation and by construction speed of the government. In their search for permanent residences, some households purchased an existing building in the city of their preference, while others purchased a lot and built a house. In short, most of the households in this group were independent in this process and resettled in a disaggregated manner.

Households that returned to the village, either rehabilitating their former houses or reconstructing new houses, could not initiate action until evacuation advisories were lifted. Households eventually initiated return to their neighborhood in early spring of 2006, and almost all were resettled by the end of 2006. Informal interactions among the community members were more evident than in the other groups, because they had more opportunity to meet others in

the community, while preparing for their return. Furthermore, their emotional bond began to reignite as they were the only households returning. But there was little time for formal or informal meetings to talk about resettlement or the future of the communities during the displacement period, as the majority was busy working during the weekdays. As stated earlier, this group initiated their permanent return in early spring of 2006, and almost all returned by the fall of 2006. Lastly, households that decided to relocate to the government land consisted of two groups: one transferring to the affordable housing and the other to subdivided parcels. These households' processes were aligned with the speed of government action, because it required having contracts on lease or purchase by end of November 2005. Site construction did not initiate until then, because the local government needed time for administrative procedures required by the national government, to approve site location and designs in particular. Furthermore, the government also handled negotiations with relocating households on the size and price of land they were planning to purchase.[70] The construction of the site was initiated in late 2005; affordable housing units were completed by July 2006, and other houses constructed individually on subdivided land were completed by summer of the following year.

The disintegrated process of this community to permanently resettle illustrates several important issues. First, the government-led public processes on resettlement, particularly on public hearing of collective relocation, did not have much influence on the households' collective decision. In other words, no collaborative decision making emerged, despite the fact that the majority of *Nishi* households participated in government-led public hearings and meetings. Rather, secondly, disjointed resettlement processes across the community, directly caused independent outcomes of resettlement patterns. Without any cross-community conversations, all households made individual decisions. Thirdly, however, there were opportunities for collective actions at particular stages in the displacement period, particularly when traditional norms of communities were disturbed or disempowered. The case of women volunteering for the elderly in the temporary shelters suggests this point. Such newly emerging

[70] This part of the negotiation was particularly difficult for the local government, because it did not want to underestimate the price of land to present to the community members. Initially, therefore, the government named a price that was not as inexpensive as finally presented. But later, the government cut the price of the land price to more than half of the original price, then the people began to increase the size of land they intended to purchase.

collective actions, however, were likely to be suppressed as life got back in order, with a long-tradition of excluding newly emerging concepts.

Unfortunately, the story of disaggregation in this community suggests that community characteristics that existed pre- earthquake are difficult to change in the short-term, in this case, two years, even under a period of abnormality. The site design of temporary housing did not help much in creating opportunities for communal interactions, and women's activities that emerged at an early stage of displacement disappeared after living returned close to normal. The disintegrated resettlement process of households has further negatively influenced the relationship of those returned and displaced, because returnees feel betrayed by those that relocated, as there was no mutual understanding when households were making decisions.

5.2.3 Communities in *Yamakoshi* District

1) Gradually gathered to return without government subsidies: Community *Chuo*

> We gathered at one of the community leader's place [in one of the temporary housing unit] almost every weekend. There, we gradually began talking about resettlement… (Male, in his 50s)

Resettled Location: Original neighborhood

A large proportion of the households gradually decided to return to the former neighborhood, despite the prolonged resettlement processes controlled by the government. The majority of returned households either rehabilitated or reconstructed homes on their former land, although some had to find an alternative piece of land in the same neighborhood due to damage to the original land. Moreover, some low-income households gave up owning a new house, but decided to live in the affordable housing constructed in the original neighborhoods. The concept of constructing affordable housing in *Yamakoshi* District was different from that of *Higashiyama* District, as single-family attached dwellings were built for the former, while a traditional apartment complex was constructed for the latter. This village *Chuo* is traditionally more privileged with its location than the other six devastated *Yamakoshi* communities, as it had relatively easier access to the district center and national roads. Its land conditions, however, are not necessarily as suitable for farming production. Informal gatherings in some households'

houses almost every weekend became occasions of informal yet important venues for discussions, which contributed in having a majority returning to the original neighborhood.

Stage of planning resettlement

Community *Chuo* was transferred to the largest temporary housing site prepared for *Yamakoshi* villagers in *Nagaoka* City, with 12 other communities (327 households) (Yamakoshi District Office, 2009b). The site was located in a newly developing residential area at the edge of the City.[71] The site was large in size, yet was arranged in a way that community members could stay together. Such deliberate arrangement of displaced communities in the site has successfully minimized possible stresses of the displaced population, enabling them to exchange pleasantries and share the struggles of their daily lives. The pressure on the villagers to find a new permanent place early was less than that of the *Higashiyama* communities, as the former *Yamakoshi* village mayor insisted that he would bear the responsibility of reconstructing and rehabilitating *Yamakoshi* and told them not to worry too much about their homes. In return, however, he asked villagers for patience and trust in him.

Although the plan for community return did not officially initiate until about a year later, local governments had taken many actions related to village recovery. In the early stage after communities were displaced to the temporary housing sites, local government officials were busy providing updates on damage and status of reconstruction. The government had also conducted three willingness-to-return surveys in consecutive years, as an input for *Yamakoshi* village and community recovery plans. Furthermore, the village recovery plan was unveiled at an early stage in March 2005, approximately three months after the re-displacement of community members into the temporary housing site. Nevertheless, formal planning processes by the local government were not visible until about a year later in September, 2005.

The local government visited the temporary housing sites to explain about the "small-scale residential district improvement program" (*Shokibo jutaku chiku tou kairyo jigyo*) after they decided to use the program in supporting the community to return. However, the detailed plan for returning was outsourced to consultants dispatched to each village. The

[71] The site was approximately 10 km (6.2 miles) west of downtown *Nagaoka*. The distance between the sites to the original village was 34 km (21 miles) by road, requiring them to cross the city center.

consultant initiated the dialogues with Community *Chuo* in September 2005, and finalized the community resettlement plan in March 2007. Generally, the majority of consultants put a large effort into having public hearings on households' expectations as well as individual meetings to understand and comprehend the needs of the community. As for community *Chuo*, more than 50 meetings and field investigations were implemented in the community during the 1.5 years period (Nagaoka City, 2008). In this planning process, the needs of households needing affordable housing as well as the application of the residential district improvement program were used to develop the final site design. As such, the official planning process handled by the consultant seems fairly straight forward. However, there were many plans that emerged and disappeared in the community behind the public scenes.

During the nine - month moratorium between the time when community members settled into temporary housing and consultants came in to the community to initiate the plan, individual households had come up with different plans and thoughts on resettlement. Households that lost their houses or lands in the earthquake had carefully considered their decision to relocate or return. Those with children and household heads commuting to the City had a particularly difficult decision; some had actually arranged lands in the flatland during this period to pursue relocation. Yet, many of them eventually cancelled the relocation, because it was either financially difficult or became less attractive. Several respondents commented on this issue:

> I prepared a piece of land for my son so that his family could live in *Nagaoka*. But he didn't want to live there, saying 'if ever hard times should come like losing a job, it's better to be in the mountains to have a chance to survive'. So I cancelled the contract. (Male, in his 80s)

> I once contracted 600 *tsubo* (1,954 ft^2) in *Nagaoka*, thinking about relocating the house and business there. But when I calculated the construction cost of a house and the [*Koi* breeding] pond, I figured it is way too difficult financially. Furthermore, my close friend in *Yamakoshi* village decided to return, so it pushed me toward returning. (Male, 60s)

Another informal community resettlement plan emerged at the initial stage of resettlement planning, when the *Yamakoshi* village government decided to use the residential district improvement program in September, 2005. A community leader at that time proposed a land adjusted development upon returning to be able to live close to one another and help each other out; it would also make it easier to sustain and receive services from the government in the

near future. Furthermore, if this type of development was accepted, then the district improvement program could be applied to benefit community members financially on reconstruction. Consequently, members were initially supportive of the land adjusted, but in the end, it was not implemented after one household disagreed with the plan. Many households began to realize that letting go of their land was difficult. Furthermore, the top-down processes by the leader engendered emotional resistance among the members, which pushed them further to disagree with the plan. These discussions on whether or not adopting the land adjustment plan were, in many cases, held in a private setting; not many of the members spoke about their intention even in the community meetings (*Chonai kai*). Trustworthy information was more available in the informal conversations and gatherings that naturally took place in the temporary housing site. Informal processes of sharing information, therefore, largely influenced the creation of a general climate of where and how to permanently resettle.

Reconstruction and permanent settlement

The resettlement planning process took a-year-and-a-half and provided the community and its members an opportunity to consider their future more carefully. The majority of households in community *Chuo* decided to return, a decision that came from repetitive communications within the community, which was made possible only by the time extended for the process of resettlement planning. Households that decided to return included those that once planned to relocate. Moreover, returning households decided to reject the idea of using the residential improvement program after in-depth discussions, although they were aware of the financial benefits that the program could bring.

Once the return process was designed with the assistance of planning consultants, the subsequent stages of reconstruction and transition only lasted for a short time. Approximately 2.5 years after the earthquake, returning households initiated rehabilitation and reconstruction of their home immediately after the last evacuation order was terminated on April 1, 2007. The first group of households, those with less damage, initiated their return the following month, in May, while other households gradually returned by the end of the same year. Paralleling to the permanent return of this community, the last temporary housing site for the *Chuetsu* earthquake victims was closed on December 31, 2007.

This community's resettlement process, especially under the tardy progress of official plans on returning, provides several interesting insights. First, individual households and the community, in private, had begun developing some resettlement plans at an early stage, although the official plans of community to return did not initiate until a year after the earthquake. This is perhaps because finding a permanent place to live is the basic need of the disaster-affected population. Second, many informal discussions and conversations that were held in the temporary housing site were influential in building a general movement toward the return of the community. This was not the result of persuasive leadership, but, rather, decisions were naturally made by each household in a gradual process. Although there were myriads of conflicts, exemplified by the rejection of the residential improvement program, informal communications and gatherings ultimately contributed to nurture the general belief that returning and restoring their mountainous livelihood together would be better than individually relocating. This observation suggests that slow planning processes may provide opportunities for in-depth thoughts for better resettlement, while also facilitating independent efforts in seeking a better way to resettle. What is also apparent was that the inherent character of communities, whether or not having potentials on information to flow in private setting, seems to play a large role in the community's resettlement decision making.

2) Gradually disintegrated: Community *Higashi*

> A majority of community members were initially planning to return…but gradually began to leave [the village]. Things didn't go right…the final decisions on resettlement lagged and lagged with many complications… (Female, in her 60s)

Resettled Location

Large proportions of the community's households were separated to two locations. The first group of households returned collectively to the previous neighborhood, but to an adjacent land located on top of the valley instead of down below, due to the hazard of the former neighborhood. Living in the traditional neighborhood was not attractive to community members, as its location was gloomy, inconvenient, and marginalized in a deep valley floor. Life became especially severe during the winter time, with short day time and large amounts of snow accumulation. Moreover, its location was far from the district center. The second group of households relocated to the flatland by purchasing houses in the private market. Yet the

relocation pattern is different from that of *Nishi*, because almost all households that relocated eventually settled in a subdivision where other *Higashi* households also came to reside. The number of households in each of the two groups is almost equal, a little more than 10 households. In regard to the duration in the temporary housing sites, the group that relocated left by the late spring of 2007, while the group that returned stayed until the end of the year 2007.

Stage of resettlement planning

Almost all *Higashi* villagers, including those who were living outside temporary shelters for two months, collectively moved into the temporary housing site on December 19, 2004. A total of 12 communities, including the six most devastated communities and the community *Higashi*, were allocated to this large site in *Nagaoka* City, in the same site where *Chuo* members were housed. Living in the temporary housing site was indeed different from the life in the mountains, but the local government put utmost effort into minimizing the stress by grouping them by communities. The local government further provided lands for gardening, because many displaced villagers were beginning to face increasing boredom as their urban residence endured. Villagers in the site gradually put their lives back in order in the temporary housing site with such arrangements. In similar manner to community *Chuo*, the community residents felt little pressure to immediately find a place of permanent residence, with the *Yamakoshi* village government taking the lead and aiming for full support for returning.

Similar to community *Chuo*, there were limited numbers of reported interactions on resettlement issues between the Village government and the community during the first nine months in the temporary housing. Immediately after the decision of the government to use the residential improvement program, the community members were notified about the program and its functions, as their former lands were declared uninhabitable. The formal planning process then followed in September 2005, upon the consultant's initiation of contacting the communities. The official resettling process was then finalized in March 2007, in similar timing and concept with other communities. The idea of a "participatory planning process" was pushed up front by the local government, and therefore the consultants invested considerable time and effort in having meetings and conversations with the community members. The official record shows the number of meetings totaled around 30 over this period (Nagaoka City, 2008). Details of meetings included individual interviews/consultations, public hearings, and plan critiquing, all

aimed at improving the resettlement plan for the community. In the consequence of *Higashi* community returning to the adjacent land, all households were eligible for the residential improvement program by collectively resettling. The consultants therefore took a role in developing a site plan on the government land. But again, complicated processes were being worked out behind the scenes.

Immediately after the community's re-displacement to the temporary housing in the early months of 2005, a leader of this community was told by the local government that the original neighborhood in the valley would be difficult to redevelop because of future landslide risks. Given this problem, it was suggested that the community use the land owned by the government, which was a land parcel of a former school that closed in 2000. The leader then decided to conduct a survey on willingness to return, with a suggestion of the adjacent land as the place to resettle, to obtain an accurate number of households that would participate in this plan. All respondents were asked to write their name in the survey sheets, so that the responses would be reliable while making respondents responsible for their input. The result showed approximately 70% of households agreed to join the plan at this time.

The final site selection process, however, proceeded with many complications. Although the *Yamakoshi* village government's intention was to relocate community to the former elementary school site from the beginning, the official announcement did not come out early enough to suppress anxieties of community members, who began to create many informal plans. Because many community members did not know or realize the government's intention to help return the community to the adjacent land, they were facing anxieties brought by hearing informal decisions about relocation sites that changed over time. Informal plans that community members were hearing about were, in fact, developed among a limited number of community members, who were more politically invested in the village. Initially, there was a joint relocation plan with another two neighboring communities which failed, and later, an alternative site different from the current site was sought to develop for this community. With such different stories that spread and then died down, community members with less access to informal information began feeling that the returning plan itself was deadlocked.

Even at the time when the consultants arrived in September 2005, the final decision on the relocation site was still fluid. Community members gradually lost patience with the

uncertainty and pending decisions, and began to look for a place in the flatland to settle sooner. Around this time, when the frustrations of community members reached a peak, a flyer on subdivision development in a flatland conveniently close to the *Nijumurago* area was mailed to the temporary housing units. This flyer changed the resettlement paths of significant groups of *Chuo* households. Initially, some households decided to move into this area based on the information in the flyer, and then others followed after getting in touch personally with neighbors who had initiated relocation earlier. *Higashi* respondents had this to say about this issue:

> When our family decided to leave the mountain, I asked my neighbor who already had a contract here [*in the subdivision*] if there are some other lots left for sale. The person said that there still is an available lot right across from her parcel, so we decided to buy the lot…and soon after we decided to move, a few other neighbors asked me if there are other lots available. And so I gave them the information, and two to three households followed us… (Female, in her 70s)

> People who left could no longer understand the prolonged plan and uncertainty of relocation…and there was a flyer explaining about subdivision development in *Nagaoka* flatland. I believe that community households wanted to live close to their old neighbors rather than completely being alone in a new place, so most of them relocated to the subdivision where they can connect with others. People were informally talking about going to the subdivision, making statements like 'I'm going to leave the village, what is your decision?' Actually, my husband was also told by those that had already left that there were only two more lots left in the subdivision and asked him what he was going to do. (Female, in her 40s)

Such movement of relocation to the flatlands was never publicized in the community, especially because the community and district were officially working toward returning. Many relocating households therefore felt guilty in taking these contrary actions. They explained that they felt they were breaking off their link with the mountains and that they acted sneaky, even if unintentionally.

Preparation on place to live and permanent settlement

The group of households that decided to relocate was quick in taking actions after making up their minds about living permanently in the subdivision. They initiated housing construction in the early summer of 2006, in May and June, and finished by November and December of the same year. Most of the households moved into the new homes soon after. Meanwhile, the

adjacent site in the *Higashi* neighborhood was not yet decided while the other groups were preparing to relocate; the selected site for relocation had finally become official in late 2006. Due to the compulsory evacuation that was not lifted until April 2007, however, the construction of the new could not begin until then. Settlement to the permanent site was finally initiated in mid-fall of 2007 and the last set of households moved into the permanent houses by the end of 2007, at the same time as the closure of temporary housing.

The story of *Higashi* suggests several key factors critical in influencing the resettlement patterns. One is the long time it took in making the official announcement on the site selection for resettlement. This story made clear that households that left the village were initially planning to return collectively. Yet the uncertainly and pending processes made them give up returning to the adjacent land, and they pursued their own solutions for quicker settlement. Another critical aspect that may have helped to give rise to uncertainty and irritation was the limited information made available to households; many households were not well-informed about the problems and issues the community was facing for final resettlement plans and actions. If such information was well shared even in an informal manner, relocated households may have made different decisions to resettle. The other critical suggestion in this *Kita* story was the power of informal communication that emerged between neighbors to decide their course of action on relocation. Most of the households that relocated to the flatlands depended on the information of neighbors, which was never spoken out in public. The majority of these households followed what other members of the community *Higashi* decided, because they did want to partially retain their ties and networks to their former community.

5.3 Dynamics of planning processes and communities

Two different degrees of resettlement processes, one led by the government and the other held within the communities, were carefully observed in the preceding sections. In short, observations suggest that, although the government processes controlled overall resettlement pacing of the communities, they exercised minimal direct influence upon the communities' resettlement patterns. Rather, processes undertaken within the communities, which are often closely tied with community's inherent characteristics, more directly affected the outcomes of the resettlement pattern of each. The following sections describe the logic of this argument, by

summarizing the interrelationships of the planning processes held by the government and the communities to develop the resettlement outcomes.

5.3.1 Influence of government-led speed on communities

The different speeds of resettlement plans and actions led by the *Ojiya* City government and *Yamakoshi* Village government can suggest several observations on how the communities responded to them. Communities *Minami*, *Kita*, and *Nishi* that belong to *Ojiya* City, were, in principle, provided with early actions by their government. Three impacts were mainly observed from early government actions; first, most of the communities did not face changing plans and actions after their resettlement decisions. In the three communities observed, communities and households needed to make decisions on whether or not to avail themselves of the government-provided program at an early stage, and subsequent processes toward final settlement naturally followed without much change. Secondly, however, early actions of the local governments also pressured communities and households to decide and act early, which sometimes pushed households toward less deliberation and ended with less satisfaction. Some respondents commented that they were aiming for speed to get their life back to normal, which neglected careful plans on housing designs and constructions that later bothered them. Third, the inherent pre-earthquake characteristics of the communities were powerful in forming the style of decision making and also affect resettlement outcomes. The communities that were inherently collaborative, namely *Minami* and *Kita*, took collective decisions, while community *Nishi*, being primarily individualistic, took independent and disaggregated decisions under time pressure of *Ojiya* City government carrying out plans and actions in a fast-paced manner.

In contrast, communities *Chuo* and *Higashi* that belong to *Yamakoshi* Village, had less consistent decisions that changed over time, because of the lagged official resettlement processes led by their government. One manifestation of this uncertain decision environment was the emergence of many informal plans and processes by individuals and communities due to the lagged processes that are reliable. Both communities of *Chuo* and *Higashi* had come up with myriads of plans led by various individuals or communities. Because finding a permanent place in restoring normal life is the urgent need of the affected, having individual and community plans sprouting is understandable and natural. Additionally, less intervention by the government, with a delayed official announcement on resettlement, made these unofficial plans

frequently change over time. Both *Yamakoshi* communities' final resettlement patterns are different from the plans proposed at the initial stage of resettlement planning; community *Chuo* was initially moving toward disintegration, but gradually integrated to return, while community *Higashi* divided up into groups of returning and relocating, despite their initial plan to collectively return. Second, however, respondents from this district expressed satisfaction with their post-resettled housing, perhaps because there was abundant time for careful thinking on their permanent locations. Nevertheless, their frustration during the lagged process and change of plans over time was large. Third, in similar manner to the findings of *Ojiya* City with early actions, the inherent pre-earthquake characteristics of the communities were influential in forming the style of decision making. Nevertheless, influence of lagged-time had largely affected resettlement outcomes of the communities; community *Chuo* gradually gathered to return although, at first, it was leaning toward disintegration; and community *Higashi* gradually disintegrated although its members initially planned to stay together.

Observations of these contrasting speeds of the resettlement processes draw several key policy inputs. First, the local governments' processes were found to control the overall resettlement speed of the communities. This phenomenon is perhaps natural, as local governments enforce and determine policies and regulations related to recovery actions. As for the cases observed, both local governments in this area enforced compulsory evacuation in the emergency stage and later required administrative procedures for rehabilitation and reconstruction of dwellings in the resettlement stage. No official recovery actions were therefore possible without their approvals. Second, findings suggest that the timing when communities need to make resettlement decision, which was largely controlled by the local government, influences the type of resettlement outcomes to be selected by the households. The case of *Yamakoshi* communities particularly explains this; two communities ended up with different decisions from the earlier plans to resettle. There are possibilities that household decisions could have been different from what they finally decided, if *Yamakoshi* Village government had shown its official resettlement outlook earlier. This suggests that the local governments need to understand that timing for unveiling plans and actions by them would affect local communities that need to make resettlement decisions. Third, an additional notable finding is that the communities were found to initiate their own resettlement plans and actions even if the timings of government-led official plans are delayed. All communities began

planning resettlements at the stage when their livelihoods were getting back in order, in the initial stage of living in the temporary housing sites. The first two months of chaotic and sleep-deprive living in the temporary shelters led communities to focus their concern only on everyday survival; however, households began initiating resettlement plans and actions immediately after reorganizing their lives in the temporary housing sites.

5.3.2 Processes in communities

Although government controls the speed of overall resettlement, community processes are found to be more influential on the resettlement decisions. One of the salient reasons is the limited capacity of the local governments in fully organizing and instituting participatory post-disaster resettlement processes, because of the unexpected volumes of work they face, from relief to recovery, that need to be implemented immediately. Furthermore, they could also be victims of the disaster, thereby minimizing their capacity to lead the plans and actions related to community resettlement. For example, *Ojiya* City was less affected by the earthquake, but City officials were overloaded with post-earthquake works that made them minimally involved in arranging community relocations. *Yamakoshi* Village, on the other hand, was devastated by the earthquake, and communities had to be displaced out of their jurisdiction. Consequently, their initiation of and involvement to the community resettlement plans were minimal.

The other reason community processes are more important in making decisions is due to the tight relationship generally found in rural communities. Individual households envision their post-resettlement lives in the community through the way they encounter the recovery process; how the community treats individuals is understood as the way they will be treated in the post-resettlement community. To cite an example, if the community is entirely cohesive and collaborative through the resettlement processes, then members perceive their post-resettlement life in the community as comfortable and promising. On the other hand, if the community is individualistic without much collaboration, then individuals see post-resettlement life in the community to be inhospitable and uncomfortable. Because such individual-community dynamics occur only inside the community, the governments would have less power in influencing the decisions of the individuals.

Another important finding is that the way of information-sharing influences households' selection of types of resettlement outcomes. That is, if communities are collaborative and share trustworthy information on resettlement with others in any arrangement, then their decisions and patterns turn out to be largely collective. On the other hand, if communities are individualistic and hinder sharing of information, then their results on resettlement are likely to turn out to be segmented. Communities *Minami*, *Kita*, and *Chuo* are examples of the former pattern, in which they shared resettlement information, by having formal and informal conversations in communities. Communities *Nishi* and *Higashi*, on the other hand, demonstrate the latter pattern, as information was only shared partially, if at all, which resulted in disintegrated resettlement. These findings suggest that the trusts among the communities are key element that influences the resettlement processes and type of resettlement outcomes of communities; communities are likely to act collectively if members trust each other and share information, while communities are likely to act segmented if members has less trust in each other and neglect to share information. Nevertheless, they are more likely to act collectively if they had enough trusts among them to share information, as how they used to in the past, and vice versa. It is noteworthy, however, that level of trust and shared-information do not predict whether the community will collectively return or live elsewhere.

In summarizing this section, influence of community processes on resettlement decisions can be concluded that, first, a sequence of plans and actions that emerged inside the communities directly influenced the type of resettlement decisions, while government processes, on the other hand, had less effect on the resettlement result. Second, the way how information was shared, which largely depended on the level of trust that existed among them, was also largely influential on type of resettlement decisions. Furthermore, informal conversations and gatherings that developed outside formal community gatherings were found important in helping community members share credible information, besides formal community gatherings. This finding of informal processes play a large part in resettlement decisions, which suggests the need for more attention on intra-community dynamics in order to understand the process of information sharing, and thus better manage the resettlement. So far, securing community participation is sought as one of the key elements for successful resettlement (see ADB, 1998; Cernea, 2003; Oliver-Smith, 1991), however, these findings suggest that the form of processes held in communities is another area needing further observation in seeking favorable resettlements.

5.3.3 The form of temporary community displacement

One of the lessons learnt from the recovery processes of the Kobe earthquake in 1995 was the importance of providing temporary housing in a way that sustains the social fabric of pre-disaster communities. Random assignment of temporary housing units in Kobe resulted in suicides and "lonely deaths" of the elderly (Olshansky, 2006b), which contributed to develop a consensus that sustaining pre-earthquake communities during the displacement period is crucial to reduce psychological stresses of the displaced. With this lesson in mind, the *Ojiya* City and *Nagaoka* City governments put their utmost effort into keeping their communities together during displacement. All of the displaced villagers were therefore placed into temporary shelters first, and then transferred to temporary housing in their cities, with the effort of keeping communities together. This arrangement was generally successful and effective, as stresses caused by the situation were often reduced by being together with community members. Communities transferred to smaller temporary housing sites particularly had opportunities to strengthen relationships, as exemplified by the community *Kita*. Respondents from this community stated that they had often shared anxieties while envisioning their future, because all of the members were living close together.

On the other hand, such collective displacement of communities had also helped to preserve community traditions and characters that were not necessarily beneficial for the communities. That is to say, keeping communities together to sustain livelihoods close to normality also could mean including norms and cultures that may preclude the potential for change and transformation that can possibly emerge in the post-disaster processes. The story of community *Nishi* explains an aspect of this; although a group of women in the community initiated a collaborative work in the temporary shelters to support the elderly, this effort was later suppressed in the temporary housing site, because community traditions and culture prohibited new activities. As a result, the community, which has traditionally been individualistic, continued to be separated throughout the resettlement processes, and it became further segmented as members moved to permanent settlement.

5.4 Conclusion

Discussions in this chapter highlighted several issues. One of the interesting findings was the relationship of community resettlement processes to resettlement decisions and outcomes. Despite expectations that governments and official planning processes influence community decisions in resettlement, intra-community conversations, often informal, were more influential in leading to resettlement outcomes. Observations suggested that such conversations emerged more in communities with higher levels of mutual trusts and members were likely to share resettlement-related information through such interactions, resulting to a consensus development. Additionally, differences of processes in the communities were found to be caused by the inherent collaborative characteristics of the community; in other words, if communities were traditionally collaborative, then their resettlement decisions and outcomes tended to be collaborative.

Nevertheless, although government intervention was found to be less influential on communities' decisions, it played an important role in controlling the speed of the resettlement as a whole. The different speeds of the two governments in working with affected communities produced contrasting processes. Quicker official actions minimized changes in resettlement plans and actions and the anxiety and frustration that accompany such changes, , but they also limited time for resident deliberation in developing satisfactory designs of the site. Conversely, slower plans and actions by the government gave rise to anxieties and frustrations of community members, yet the extra time provided opportunities for residents to consider their resettlement with more care.

In regard to temporary community displacement, collectively displacing communities appears to be useful in minimizing stresses of the earthquake-affected victims. Generally, communities that were assigned to smaller temporary housing sites successfully reduced stresses caused by displacement and strengthened relationship with their members that support more satisfactory decisions by the households. Nevertheless, such preservation of community form during displacement also highlighted that the pre-existing nature of a community tends to persist, which could minimize the opportunity for positive change.

All of these findings suggest that policy makers and planners, as well as researchers, should pay more attention to resettlement speed and community dynamics. First, speed of resettlement decisions and actions by the government is critical to keep in mind, because the finding suggested that slower planning, during resettlement process, could produce anxiety and make communities proceed with their own plans and actions before initiation of any official ones. Although slower planning brought more satisfactory outcomes for communities, the government is perhaps responsible for guiding resettlement by appropriately providing information in earlier timing to reduce anxiety of the displaced communities. Furthermore, the timing when communities had to decide influenced decisions made, as community members changed their minds with the passing of time. Second, attention on community dynamics, to identify the strength and weakness of the communities during the conduct of recovery processes, is also noteworthy. In-depth support provided to each community, to compensate for its weaknesses, is one of the important keys toward having more satisfactory outcomes of resettlement.

CHAPTER 6. IMPACTS OF RESETTLEMENT CHOICE ON SUSTAINABLE LIVELIHOODS

Livelihood, simply defined, "comprises of the capabilities, assets and activities required for a means of living" (Chambers & Conway, 1992. p. 6), and is sustainable if it "can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation" (Chambers & Conway, 1992. p.6). Other definitions explain that availability of livelihood assets, together with community and households' capability in reaching them, influences livelihood sustainability (Flora, Flora, & Fey, 2003; Pelling, 2003; Scoones, 1997). Livelihood assets, therefore, are one of the important concerns in forming sustainable livelihoods, and are explained through such capitals as economic/financial, natural, physical, human, and social assets (DFID, 1999; Flora et al., 2003; Scoones, 1997).

Using this concept as a basic guide, this chapter examines changes of livelihood in *Nijumurago* communities and households by understanding shifts in livelihood assets through the resettlements. To do so, first, change in the financial aspect is explained by observing household income opportunities as well as expenditures needed for resettlement. Second, physical capital, is examined through changes of accessibility to services. Third, change in human capital is observed through change of population and its demographic structure in the communities after resettlement. Fourth, social capital will be explained by observing changes of family power structure, and communal ties and networks before and after resettlement. Natural capital is excluded in this description, because both the returned and relocated communities continue to have access to the natural resources of their former lands and communities.[72] The earthquake has perhaps changed the shape of lands in the communities. However, these changes are only on a micro scale in certain locations, and therefore the overall state of natural capital is interpreted as unchanged, under wider ecological perspectives. Because such changes in livelihood assets not only influence levels of sustainability but also

[72] The earthquake damaged most of agricultural fields and *koi* ponds of the communities in *Nijumurago* area; however, both relocated and returned households had a choice to reconstruct agricultural infrastructures using public funds that covered 99% of total construction fee (information from interview of former Yamakoshi Mayor, Mr. *Nagashima*). As a result, both relocated and returned members who wanted to do this were able to reconstruct with much effort. Moreover, the program on supporting livelihood restoration of disaster victims included demolition expense of the damaged house, and so many relocated households converted their former residential lands to gardens for home vegetation.

vulnerability,[73] the influence of resettlement decisions and support programs on vulnerability is also stated (see Bolin & Stanford, 1998a; Scoones, 1997; Wisner et al., 2004; Yodmani, 2001).

6.1 Livelihood change in post-disaster resettlement

6.1.1 Change in financial capital

The individual households' financial assets after resettlement did not appear to correlate with their decisions of either relocating or repopulating. Rather, their decisions depended upon a combination of degree of damage to household assets, access and use of financial resources, and change in income opportunities.

First of all, individual households had to make an important decision that impacted their financial conditions, and that was whether to own a house again. Households reached a decision based mainly on prospects for income and loans, but the level of damage to their assets, of buildings and lands, also largely influenced them. Based on the interviews, household attributes were found to have some correlation to the decision to own a house: the majority of households in working cohorts, or those having income opportunities by owning businesses, decided to own a house again. On the other hand, most of the elderly population without income opportunities, as well as female-headed households with smaller incomes, had to give up ever owning houses again, due to financial constraints. These households therefore moved into affordable housing for disaster recovery (*Saigai fukko koei jyutaku*) prepared by the governments, or found a house to rent.

In regard to households that decided they would like to own a house again, of the expected financial burden of homeownership was largely influenced by their use of resettlement policies offered by the local government. The least burdened households were found mainly in community *Minami* (by using the relocation program led by *Ojiya* City) and community *Higashi* (by using the repopulation program led by *Yamakoshi* Village) (see Table 6.1 for summary).[74] Additionally, the majority of households in both communities received 100% of *Tateko*

[73] Livelihood vulnerability is explained in the following equation: "Livelihood vulnerability = livelihoods (material and intangible assets) + (exposure to) a stress or shock." (Bacon, 2005)

[74] Community *Minami* used "the collective relocation promoting program for disaster prevention (*Bosai shudan iten jigyo*)" prepared by the *Ojiya* City government for relocation, while community *Higashi* used "small-scale residential district improvement program (*Shokibo jyutaku chikutou kairyo jigyo*)" prepared by the *Yamakoshi* Village government for repopulation.

insurance coverage, which was a significant amount to use for house reconstruction. As a result, both members of community *Minami* and community *Higashi* reported that they do not have much financial debt as a result of the resettlement. Respondents from these communities commented:

> I don't think our community members have large amount of debts in rebuilding our home. Talking only about our family, we decided to have a house that could be built without any loans … (Female, in her 60s, from community *Minami*)

> Not much of us here [in the community] have housing loans… because everyone was paying *Tateko* insurance and we decided to use the program prepared by the local government…so there were a lot of support. (Female, in her 60s, from community *Higashi*)

On the other hand, the households with the most debt were the ones that did not use the government provided programs, did not receive or were paid only a small amount of *Tateko* insurance coverage, and lost their original lands. These households were found across all communities of *Kita*, *Chuo*, and *Nishi*. Households that did not lose their lands reconstructed their homes on their lands, and had only the reconstruction cost to think of; however, those that lost their lands and houses had to pay for both land and reconstruction cost. Such households therefore got deep in debt, regardless of their decisions whether to relocate or to return. These households often took inter-generational loans as the means for coping, making their children take part in the housing loans. Respondents who are in such conditions commented:

> I didn't get any support from the local government or received *Tateko* insurance coverage, so we really didn't have any money. So we returned because we thought we could squeeze through only if we are back in the original community. (Male, in his 50s, from community *Chuo*)

> We now have housing loans that is more than we could pay back. Our loan is planned to be continued even after our retirement. (Female, in her 50s, from community *Kita*)

> I hear that many people think that we are rich by having new houses constructed in the flatlands [in a site prepared by the government]. In fact, the truth is worse than what people imagine; we took a 35 year loan which will pass on to my son. This is a huge burden on my son and I am facing with guilt. (Male, in his 60s, from community *Nishi*)

Apparently, households that returned to their original lands had less financial burden than these households that have fallen deep into debt, yet were not free from housing loans.

As for the change of income opportunities, households engaged in livestock industry or farming, i.e. *Koi* and cattle businesses, as well as rice production, were hit the hardest. Although reconstruction costs for farming infrastructure, including *Koi* pond, farms, and rice paddies, were largely supported by funds[75] provided by the national and local governments, the earthquake damaged livestock and crops, which forced agri-business owners to restart their businesses from scratch. On the other hand, households whose heads or primary income providers were employed in offices were less affected by the earthquake, because the majority of them were able to continue working where they were employed.

Changes in household financial situation can be summarized in this way: First, households using the government resettlement program were financially better-off than households that did not avail themselves of the program. Second, households that received higher payments from *Tateko* and incurred less damage to original lands were less burdened upon reconstructing their permanent places to stay. As for the shift in income opportunities, employed and self-employed households were distinguishable in pre- and post- resettlement; the former households were relatively stable throughout the period as they managed to continue working for their employers throughout the period, while the latter faced larger difficulties as most of them had agricultural products that were totally devastated and required reproduction efforts. The post-resettlement financial situation of households, therefore, depends on combinations of access to financial resources (i.e. government program and insurance), degree of damage (i.e. damage to building and lands), and change in income opportunities (i.e. employed or self-employed). The choice between relocating and returning, therefore, was not a factor that largely influenced the post-household financial condition. It is perhaps because the new and old sites were proximate enough enabling the former villagers to continue a lifestyle similar to that in pre-relocation, especially in the way of generating income. Overall, households that suffered the most were those who did not have *Tateko* insurance, and these people are mostly the office workers and *Koi* business owners who are not affiliated with the Japan agriculture cooperation.

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[75] Support from these governments was secured by *Chuetsu* earthquake, having been designated by the Cabinet office as "Disaster of extreme severity (*Gekijin saigai*: *Hongeki*)". The Cabinet also approved the designation of several administrations, including *Ojiya* City and *Yamakoshi* Village, as "localities experiencing disaster of extreme severity (*Kyokuchi gekijin saigai: Kyokugeki*)", which enabled small and medium enterprises to get financial support.

Table 6.1 Change of community capitals through resettlement by communities relocated, returned and disintegrated

		Relocated	Returned		Disintegrated			
					Nishi		*Higashi*	
		Minami	*Kita*	*Chuo*	Relocated	Returned	Relocated	Returned (adjacent)
Use of resettlement policy		Yes	No	No	Yes	No	No	Yes
Maximum Tateko Insurance coverage		100%	50%	100%	60%	60%	100%	100%
Financial*		small (-)	large (-)	large(-)	large (-)	large(-)	large (-)	small (-)
Physical (Natural)	Hazard	reduced	minor	minor	reduced	minor	reduced	reduced
	Convenience	improved	minor	minor	improved	minor	improved	minor
Demographic (Human)	Total	minor	minor	minor	1/3	2/3	2/5	2/5
	% elderly	minor	minor	minor	increased	decreased	decreased	increased
Social (Community)	Ties/ cohesion	small (-)	large (+)	large (+)	large (-)	small (+)	small (+)	small (+)
(Individual)	eldery	large (-)	small (-)	small (-)	large (-)	small (-)	large (-)	small (-)
	working cohort	large (+)	small (+)	small (+)	large (+)	small (+)	large (+)	small (+)
	women	large (+)	small (+)	small (+)	large (+)	small (+)	large (+)	small (+)

Note 1: * Largely influenced by external resources
Note 2: This table summarizes the change of community capital observed and explained in section 6.1. Type of social capital explained in this chart represents intra-community relationship and the relationship of different groups of individuals, i.e. elderly, working cohort, and women, to their communities.

6.1.2 Change in physical capital

Relocation has improved the physical environment of communities and households, as new sites were selected in locations that have less risk of natural hazards than the pre-earthquake locations. Communities that relocated to either flatlands or to adjacent lands had similar reduction of risk. Returned households, on the other hand, are unchanged in this aspect, as most of the households returned to the original land where they used to live.

1) Relocated communities

<u>*Minami* community: all relocated collectively to flatlands</u>

Community *Minami* relocated to the flatlands, which is convenient for everyday living; the new site is close to downtown *Ojiya* and stores for grocery shopping. The new site also has less snow and longer hours of sunlight. Consequently, all of the difficulties that community members used to face back in the mountains – the vast amount of snow, darkness with short hours of sunlight, and underdeveloped infrastructure – were drastically improved by relocating to the flatlands. Women in this community commented about living in the new site:

> I was always thinking that we need to leave the mountain sooner or later when we get older [because not any one of their children lives with them], so I just think this relocation happened a little earlier than expected. Living here is so

> easy… the amount of snow fall is so small compared to the mountains, it's like heaven… (Female, in her 60s)
>
> I'm thankful to the community building and memorial monument [constructed back in the original neighborhood with the public funds], but don't bother myself to go back for visits. I also never thought that I wanted to go back there to live although I was born and raised there. And I recall that nobody [in the community] said that they wanted to return, when we were planning to relocate. I think it was because nobody ever enjoyed living back in the mountainous community. (Female, in her 60s)

Although members of *Minami* community are not totally satisfied with the layout design of the new site in the flatlands, which is tightly squeezed into a small site, relocating from the mountains liberated them from both emotional and physical marginalization.

Nishi and *Higashi* communities: partially relocated collectively to flatlands

Segments of the populations in community *Nishi* and community *Higashi* also relocated to the flatlands by either following the strategy of the local governments or by self-managing a permanent place for living. Relocated members of these two communities stated similar comments on their post relocation life, although community *Nishi* relocated to a site in the flatlands prepared by the local government, while community *Higashi* relocated to subdivision houses in the private market. Mainly, members of both communities stated how life became easier in the flatlands with less geographical hazard and greater convenience. Their comments:

> The amount of snow is much smaller in the new site [in the flatlands], although the volume really doesn't bother me much. (Male, in his 70s, from community *Nishi*)
>
> Living in the flatlands is much easier. I usually got nervous back in the mountains, because the time we have sunlight is short. The image of living back in the mountains is gloomy. Furthermore, winter was terrible there, with many snow accidents. Here [in the flatlands], we don't get that much snow and the vegetables we plant grow well. (Male, in his 70s, from community *Higashi*)
>
> We spend more money here [in the flatlands] because it's convenient to go places, say, for shopping, unlike back in the mountains where we usually have to prepare food and eat at home even if we were tired. But after coming here, we tend to go out to buy something or dine out because it's just a minute away. Then we spend more. (Male, in his 60s, from community *Nishi*)
>
> My life is much easier here [in the flatlands]. The biggest difference is the access [to (public) services]. Everything is located near here. And it's flat. So I can use a bike to go shopping. Furthermore, because we don't have much

> snow [here], it is easy to go outside the house. (Woman, in her 30s, from community *Nishi*)

These comments reveal that households have reduced their exposure to hazards, especially the burdensome snow, and at the same time, gained convenience by living in proximity to available services, such as the access to shopping malls, in the flatlands. The major trade-off, however, for living conveniently in the flatlands, was the increased amount of expenditure in the flatlands.

Higashi community: partially returned adjacent

A group (sub-community) of households from community *Higashi* returned to the original community, but to an adjacent site located higher in the valley and having longer sunlight. Because the new site for resettlement was selected as a place that minimizes possible hazards, particularly landslides and avalanches, the physical condition of the neighborhood has also improved. Although convenience of living, such as access to social and commercial services did not improve, members of the community who returned to the mountains were quite satisfied with the new site. Respondents commented:

> [The new site is] much comfortable than before. I have nothing more to hope for. (Female, in her 60s)

> The original site was located in the bottom of the valley and thus there was danger for a vehicle to slip and fall into the valley during the winter. But we got to come to the top [of the valley], and so it is much better now. (Male, in his 60s)

> The former neighborhood was full of danger in winter, because it was located in the bottom of the valley. The new site is much better in this aspect, because I don't have to worry about driving the hairpin bends covered with snow. But the new place is still a bit inconvenient. I have to drive into the cities [to *Miyauchi* in *Nagaoka* City or downtown *Ojiya*], which takes more than 30 minutes each way. (Female, in her 40s)

All the responses from members of communities *Minami*, *Nishi* and *Higashi* who have moved to new locations describe improved physical environments. They consider their new life as being much better, because of better conveniences and reduced exposure to natural hazards. Of these three communities, households that moved to adjacent land were less favorable to their new place than those who moved to the flatlands, because the former continued to live in the mountains, which are less. Additionally, it is worth underscoring that the females often

provided positive responses about their new life in the flatlands, describing how their lives had improved with increased convenience and reduced geologic hazards. Women, perhaps, had been suffering more from mountain living, as they often had to take on more responsibilities aside from caring for their children and parents and doing chores around the house. Some women commented that they used to work twice as much in the mountains, because they had to work together with males in the farm and ponds during the day, and do house chores at night.

2) Returned communities

Physical changes of communities returned, i.e. communities *Kita* (all returned in place), *Chuo* (majority returned in place), and *Nishi* (partially returned in place) were minimal, except that the majority of houses were newly built. However, a few communities that had less returnees faced land management issues, due to land left vacant or converted into home gardens by former households. Community *Nishi* particularly illustrates this situation, as two-thirds of the households had left the community, and the returnees had to maintain the whole community. Other than such communities with drastically reduced number of households, the majority of returned members continued to live on their land without much physical change.

6.1.3 Changes in demographic capital

1) Communities and demographic change

Change of demographics in some communities was minimal while others were significant. Communities that had made collective decisions to return in place generally faced minimal changes, as represented by communities *Kita* and *Higashi*. These two communities are inherently collaborative, and community members took collective resettlement actions, which resulted in having minimal change in demography upon their return (See Table 6.2). Community *Minami*, which also made collective decisions, is in a different situation, as they joined into a larger community at a relocated site. Although former members of community *Minami* continue to remain physically close in the new site, members are now a part of a larger population.

On the other hand, disintegrated communities faced the most demographic changes, because those who returned to the community were not representative of the entire pre-earthquake community. For example, disintegrated community *Nishi* only had 30% of

households return, and the majority of returnees were in working cohorts. Community *Higashi*, had 40% of households returning to the adjacent lands, and these were largely elderly households. This outcome suggests that the demographic structure is affected by external impacts, mainly from the resettlement programs. However, in both cases, the disaggregated communities had greater demographic change than the communities that took collective actions.

Table 6.2 Decision types and household return rates by community

Community (District*)	Decision on community outcome	Style of decision making	No of households returned		
			2004	2009	% change
Minami (H)	Relocate collectively	Collaborative	11	0	0%
Kita (H)	Return in place	Collaborative	16	16	100%
Chuo (Y)	Return in place (Majority)	Collaborative	29	20	69%
Nishi (H)	Relocate independently	Disaggregated	39	11	28%
Higashi (Y)	Relocate independently	Disaggregated	29	12	41%

* H stands for *Higashiyama* District and Y for *Yamakoshi* District. Data on number of households returned is created from Sawada (2009).

2) Impact of resettlement policies on community demographics

Observation on the relationship between resettlement policies and change in communities' demography reveals that elderly households appear to be likely to follow the policies provided by the local government. Thus, the original community tends to rejuvenate with younger households if relocation is supported by the local governments, while it is likely to be more mature if repopulation is supported. Most of the communities followed this trend, except for a community that had less elderly population at the time of resettlement decisions.

Community *Nishi*, which belongs to *Ojiya* City that provided relocation program, represents the example of rejuvenating community. Elderly households in the community left for the flatlands following the government's relocation program, which pushed down the rate of elderly people in the original community from 27% in 2004 to 20% in 2009 (see Table 6.3). Many interview respondents also commented that the community became younger as elderly households left without any strategy to return, and resettled either by living in the affordable housing prepared by the government or by living with their children. *Higashi* in *Yamakoshi* Village is an example of the converse phenomenon; with government support for repopulation, it

saw its rate of elderly people increase to 43% in 2009.[76] Respondents in this community commented that younger households in their 40s and early 50s relocated to the flatlands by purchasing subdivision houses in the market, while elderly households returned to the community with the program supporting return.

These two dynamics indicate that elderly households had less financial freedom in making a choice in either case and so followed the programs prepared by the local government, while younger households had options to pursue their preference, not necessarily following the government intention. Communities that took resettlement actions without using government prepared programs were either relatively young at the time of the decision, as community *Kita*, or had become younger after resettlement, as community *Chuo*. The rate of elderly people in community *Kita* was 25% in 2004, which was at the low end for communities in *Nijumurago* area. Despite having repopulation program dropped, the majority of households in community *Chuo* also returned, attracting more of the younger households. Many respondents of this community suggested that their community became younger, having several younger households permanently returning to the community from metropolitan Japan. Although the change of elderly rate is slight, decreasing from 38% in 2004 to 32% in 2009, it is still worth mentioning when viewed from natural aging of five years.

Table 6.3 Demographic change of five communities before and after resettlement

Community	Resettlement programs	2004			2009		
		total pop	no. elderly	**% elderly**	total pop	no. elderly	**% elderly**
Minami (H)	*Relocation (Followed)*	41	15	**37%**	n.a.	n.a.	**n.a.**
Kita (H)	*Relocation (Dismissed)*	65	16	**25%**	64	24	**38%**
Chuo (Y)	*Repopulation (Dismissed)*	89	34	**38%**	53	17	**32%**
Nishi (H)	*Relocation (Partially followed)*	157	42	**27%**	50	10	**20%**
Higashi (Y)	*Repopulation (Partially followed)*	108	n.a.	**n.a.**	47	20	**43%**

* H stands for *Higashiyama* District and Y for *Yamakoshi* District. Created from population data from Ojiya City, Nagaoka City, Nagaoka City (2008), and Sawada (2009)

[76] Precise rate of elderly in 2004 is unpublished.

6.1.4 Change in social capital

1) The elderly and power-shift in the households

One of the significant changes identified before and after the resettlement is the shifting of power in the households. Although the power relations within individual households would seem to have minimal impact on communities, they in fact have broader. The result of cumulative changes within several community households is that social capital is significantly affected. The dynamics of this process is explained here. The size of the families is usually larger in the mountains than in the urban area, often having three generations living together. This was also the case for the five targeted communities. Before the earthquake, household heads were generally the eldest male, who owned the house and was decision maker in the household. However, by losing the houses and lands as a result of the earthquake – the only assets that these elderly male heads had – many of them were no longer the household leader. Often, their children's husbands or wives took over their role in the household, especially because younger couples took financial responsibility in rebuilding their homes. Because almost all the elderly people were already retired by the time of the earthquake, getting housing loans was impossible. Consequently, most of the decisions made in the course of restoring the lives of these elderly people were no longer in their hands. They commented:

> We [himself and his wife] were displaced to another city, away from temporary shelter for few weeks...so we didn't know that relocation [to the flatlands] was happening until after all community members made final decisions. I didn't say anything about this decision because I realized that I had to rely on my son now. So my son attended all the community meetings, and made all decisions. I decided not to be involved. (Male, in his 70s, from community *Minami*)

> When I think of the community before and after the earthquake, I see generation change (*Sedaikoutai*). Not only that the household head is currently replaced by the younger generation, but also the leaders in the community are much younger. Elderly, however, seem to be supporting the younger generation behind the screen. (Female, in her 30s, from community *Chuo*)

> When we were back in the mountains, [grand] parents basically owned their houses. But when we relocated here, their children built the house. So there are many [grand] parents in a pitiful situation. Some [grand] mothers don't get along with her daughter [in law] so she can't do anything at home. She is told not to do the dishes, laundry, and even bring friends over. She is reduced to living cringed … (Female, in her 70s, from community *Nishi*)

> Before the earthquake, younger couple in their parents' house had always felt grateful for being able to stay with their parents, so they were acting quite modest. This, however, had transformed in the course of resettlement – which put the elderly in a desperate position because they feel inferior in the household. (Female, in her 50s, from community *Nishi*)

Although such power-shifts in the households were apparent in all observed communities, the elderly in communities that relocated to the flatlands were mostly adversely affected. First, because the houses bought or constructed by their children in the flatlands were much smaller in size than the one in the mountains, the elderly were often isolated in their tiny room in the new house. Many hesitated to use other spaces but their own and also drew back from inviting neighbor friends, as the house no longer belonged to them. Second, the new site in the flatlands did not have enough land for the elderly to do home gardening or *Koi* breeding, to pursue activities that predominated in the mountains. The elderly who can still drive commuted between their former lands and the new home so that they could continue such activities, but a large segment of the elderly could not move around by themselves. As a result, they were extremely bored with life in the flatlands, without any interesting activities they could do. They expressed boredom more often than convenience, although they appreciated the convenience:

> The new site is really convenient because I could commute to the hospital by bus. I usually take the bus on the way, but walk home for about an hour. I don't mind walking that much, because I have nothing else to do. (Female, in her 70s, from community *Minami*)

> I still have some lands back in the mountains where I still plant some vegetables. Yet I could only go there when my daughters visit us, because I don't drive. So I plant eggplants and tomatoes in the balcony there [pointing outside the current house], but it's more for killing time. I am very bored [in the new site]. (Male, in his 80s, from community *Nishi*)

Some expressed anxiety about the near future, when they will have difficulty moving around by themselves:

> Currently I commute to my land [in the mountains] everyday driving for 25 to 30 minutes. My life is going to be really hard when the time comes when I can't drive anymore. I will have nothing to do in the new home. I have no friends in the new place yet, and I doubt that anyone from the former community could come visit me. It's going to be lonely. (Male, in his 70s, from community *Nishi*)

As previously mentioned, because these elderly people no longer have financial and decision making powers in the households, they hesitate to invite their neighbor friends to their home even if relocated in proximity to them. As a result, the relationship within the community is also weakened after resettlement, even if the majority of former community members are residing close together in the new site. On the other hand, circumstances surrounding the returned elderly were different; although the majority of the elderly also lost their central role in the households, they continued to maintain communal relationships and as a result, were respected by community members. Furthermore, returned elderly were generally living their former lives, able to continue home gardening and *Koi* breeding activities which kept them busy. There was distinction, therefore, between the lives of the elderly in relocated versus returned communities.

2) Changes in inter-community relationships and communities

Post-resettlement outcomes of intra- community relationships and communities are distinctive between communities that were relocated, returned, or disintegrated.

Communities becoming unsociable: Relocated community *Minami*

Community *Minami*, which collectively moved out from the mountains to flatlands, continued to live with other members at a close distance. Nevertheless, ties among community members weakened owing to several reasons. One of the prominent reasons was the location of the new site, which exposed individuals to a new and different living. As a result, some residents were just constrained to spend time with former community members, as they struggled to cope with the new patterns of living. Some others gained more opportunities to spend time with other people outside the community. Furthermore, the resettlement process left some stiffness in intra-community relationships, making it difficult to share inside out experiences as how it used to be. Relocating to the new site involved demarcation of land parcels, which led to some minor conflicts and financial issues that caused some inequalities among community members. Respondents provided various reasons why the relationship between the members weakened:

> I lost interest in sharing time with the community members, such as stopping for tea as how we used to. It is because I have to commute to the mountains everyday to take care of the *Koi*, which makes it difficult for me to share time

> with members who stay here [in the new site]. It was easy back in the mountains; we used to take a break while working…but can't do it anymore… (Female, in her 60s)
>
> I now spend more time with my (old time) friends who are in *Ojiya*. It's something new and I enjoy it a lot. Back in the mountains, we all lived too far from one another– and we couldn't have such time. (Female, in her 60s)
>
> We [males] used to get together at night to drink *sake* back in the mountains. We used to talk a lot about anything in the community back then. But we don't do it anymore [in the new site]…we can't then speak openly about everything anymore…one of the reasons is that all of us had to go through different financial arrangements [some having more support while others having less] so we can't be honest about it anymore. (Male, in his 70s)

Not only had ties between members weakened, but also activities in the community were reduced. Because this community had physically left the mountains and merged into a new community in the flatlands, sustaining traditional community activities that were common back in the mountains became difficult. Some members, especially those who still commute back to the original land, are putting effort into sustaining some of these activities, i.e. volunteer work for maintaining community (*michibushin*), holding festivals, and dedicating the shrine; however, all these activities are becoming harder to continue. The leader of the community also commented that they dissolved the neighborhood association, because maintaining its function became too difficult; members now lived far from one another. The community is also planning to withdraw from its role in protecting the community shrine, because the physical distance between current residences and the former lands makes such work a burden. Furthermore, ending these former community activities did not mean that they replaced them with the ones in the community which they newly joined. Although the younger generation joined some activities in the new communities from time to time, the older population declined to participate in such activities. Overall, the ties between the former members had weakened and also individuals had become less active, which made the former community become unsociable.

Communities becoming active: Returned communities *Kita* and *Chuo*

Communities where the majority of the population returned did not face significant demographic change. In fact, community relationships became closer, in contrast to relocated community *Minami*; both communities *Kita* and *Chuo* became more collaborative after returning.

Furthermore, the level of community activities either stayed the same as before or increased, also in contrast to community *Minami*.

Community *Kita*. Members of community *Kita* suggest their relationships had strengthened after the resettlement. Many stated that all of them became closer and now share more time with one another. For one there is the women's group that emerged during the displacement period and continues its activity today. Males have also begun to get together on the weekends to share time with members, besides official community meetings. Traditional community activities, including shrine management, festivals, and volunteer works for cleaning their community, also continued to be held in similar or increased frequency. Other community activities, such as planting trees and flowers in neighboring public areas, have newly emerged and are even expanding due to efforts made by the women's group.

Many members also had mentioned their serious concern about long-term community sustainability, and the need to explore possibilities to attract outsiders moving into the community. They said:

> I have begun to think about how we [as the community] can interact and accept [outside] people who visit our community. Because there is no way that our population will naturally increase, we can't avoid thinking about this... (Female, in her 40s)

> I was aware that the community was declining slowly before the earthquake. But I just thought it is natural and can't do anything. Depopulation is like alveolar pyorrhea…it progresses slowly without much attention and suddenly realize the seriousness of the condition all at once. (Male, in his 50s)

> Having abundant conversations with community members is important for keeping us motivated to pursue better living in this community, especially for the younger generation. I can see that younger generations are playing key roles in fostering communities through such activities as bull-fighting, so I think it's important to have them involved even more and make the community a place where many people want to stay. (Male, in his 30s)

Community *Chuo*. Similar outcomes were observed in another returned community, *Chuo*. Community members perceive their bonds had become tighter and the community became more active after resettlement. They commented:

> Members seem to have changed their views toward community after resettlement; we began to think that we should work collaboratively with community [members] because we live here together. (Male, in his 60s)
>
> We, women, keep great relationships in the community. We have always had an unspoken agreement that those who are available just do whatever they can do [for the community activities]. I think our relationship had even become better after resettlement, with the earthquake experience that we went through together. (Female, in her 60s)
>
> Because our community is small [in population], we need to support one another to survive. And because we always had such thoughts, our community's collaboration during emergency response after the earthquake was fabulous; we knew who, in the community, were in trouble and where, within 20 minutes after the incident. Because coordination of ours was so great, it became our pride…I had never socialized with younger generation, those in their 20s or 30s before the earthquake, but now I do. The experience made us further unite. (Male, in his 50s)

Not only did inter-personal ties of members become stronger, but also traditional community activities, of shrine, festivals, and volunteers (*michibushin*), were gradually reinitiated upon return. The community has further initiated new activities, including some festivals targeting populations outside *Yamakoshi* Village to attract and produce more interactions with outsiders.

These two returning communities of *Kita* and *Chuo* illustrate that ties among the community members strengthened, and community activities have been sustained and expanded. Furthermore, members in these communities have begun taking depopulation issues more seriously, and at least begun to seek some solutions. All of these positive outcomes were largely because the community continued to be collaborative throughout the resettlement stage, in addition to their return to original sites.

Communities becoming segregated: Disintegrated communities *Nishi* and *Higashi*

Disintegrated communities had the greatest changes in community before and after the resettlement. Demographic change was one. The inter-community relationship was the other. Nevertheless, some commonalities were identified in the patterns of post-resettlement outcomes in the disintegration.

Community *Nishi*. Community *Nishi* had totally disintegrated into sub-communities returned and relocated. Of those that relocated, one group moved into the flatlands, to the site prepared by the local government, while the other group moved into flatlands but in various locations. The proportion of population that returned was about one-third, while the relocated population was two-thirds of the original number. Post-resettlement lifestyles were significantly distinguishable between those that relocated and returned,.

Most of the relocated population in community *Nishi* commented that new life in the flatlands had freed them from the tight relationship that existed in the former community, for better or worse, even if they were relocated into the same site. For the younger generation, relocation was an opportunity to expand new relationships outside the former community. For the elderly generation, however, it was rather a misfortune to have the same sense of isolation as in their former community in the new community. Respondents from *Nishi* explained:

> Because relocated families are living closely in the new site, we share greetings if we meet each other outside. But we no longer visit each other's home like how we used to do back in the mountains. For example, we traditionally visit other family's altar (*butsudan*)[77] during the equinoctial week (*ohigan*), and greeted each other with drinks and snacks. But after we came here, it's only been ritually done that people visit others just for short greetings. (Female, in her 40s)

> I became involved with a group of young women in this new community. I have more friends here. Because first, there weren't much people back in the mountains, and further, there weren't many women my age. The location here [the new site], is much closer to the city so that we can often go out to have fun. (Female, in her 30s)

> I am not attending any of the gatherings that are being held here [in the new site]. It seems like there is one every week. But I know that everyone [in the new community] thinks elderly people from the mountains are a burden…so I'd rather stay home. (Male, in his 80s)

A small number of returned members in the disintegrated communities, however, had controversial responses compared to those by relocated ones. In a similar manner to the returned communities of *Kita* and *Chuo*, ties among community members were changing and gradually becoming stronger. Many suggested their change in mindset and emphasis on the

[77] Respecting the family ancestry in a Buddhist way.

importance of involving younger members in community activities as their strategies to sustain communities:

> All of us changed our mindset toward community members. So whenever we have community meetings, we try to listen to others and support them as much as possible, despite the fact that minor disagreements always exist…I also think that we need to involve the younger generation more to be part of community, say, by providing them a position to lead the community for the future of our place. (Male, in his 50s)

> Ties of our community had strengthened. Because the population decreased, volunteer work for maintaining community (*michibushin*), indeed, takes much longer. But we began to think that we need to share work by dividing up the burden…furthermore, we need to involve younger generation in this, to sustain our community… (Male, in his 60s)

Problems, however, are emerging in the disintegrated communities. First, because two-thirds of the original members left the community, most of the returned households were now responsible for a role in the community all year round, which burdened many, including the working cohorts. And second, making matters worse, the majority of relocated households continued to use their former lands, as well as free-riding the use of the infrastructure of the community. As a result, tension between the members who relocated and returned had intensified. Some explained the situation of community *Nishi*:

> Because a large number left the community, maintaining the community [taking care of the shrine and community infrastructure, i.e. roads and drain trench] became so difficult. Road maintenance has become especially difficult because fallen leaves and litter, which were less when people were around, are now substantial and clog up the drainage system…(Male, in his 50s)

> I personally still maintain relationships with people who left the mountains. But I see some relocated households hesitate to come, while the returned households ignore them. So we decided to collect a community fee from those that relocated but still own barns in the community. Relocated populations then don't need to feel hesitant to come back, if they pay the fee…yet I really hope that the former residents would come to help us for cleaning the community (*michibushin*), at least once a year… (Male, in his 60s)

Such relationship of former households in Community *Nishi* suggested that emigrating from a former mountain neighborhood does not mean an end of the relationship with the original community and lands, unlike relocation found in urban areas.

Community *Higashi.* Community *Higashi* disintegrated mainly into two sub-communities. The first group collectively returned to the former community, but to an adjacent land. The other group relocated to flatland subdivision houses in the market, through individual decisions but to the same location. The number of households in the two sub-communities turned out to be almost equal. Nevertheless, post-resettlement living between the two sub-communities was keenly contrasting, as similarly observed in community *Nishi*. The majority of relocated members commented that life in the new place has released them from former strong ties, and also brought in opportunities to explore new relationships with other people at the new site. Some commented that, in the new site, members became close with people who were originally from the mountains but had no interactions before.

> There were some time-lags between those who came here [to the subdivision] in earlier and later time of construction. The earlier settlers did not know a lot of people, so they extended their networks to people who also came from the mountains. I also got new friends here … (Female, in her 70s)

> I am glad that I can grow vegetables [in the new site]. Here, we give plants to neighbors and they give us some of their crops…although we are aware we can't provide suggestions and advisories to other households as how we all used to do back in the mountains; we are relatively having good relationships with them… (Male, in his 70s)

Nevertheless, the elderly are likely to have harder times in the new environment, as observed in other communities facing relocation.

Life in the new site, constructed adjacent to the original land, has not much changed the returned households. One of the reasons is perhaps because the new site was designed to suit the new community, thereby minimizing possible burdens that could have faced them. Because of this, returned households did not have much dissatisfaction about living in the new site, and they did not appear to show displeasure toward those who relocated. Community *Higashi* had always been unsociable and only some members have close friends, and continued to be so, with a minimum amount of community activities. Intra-community relationships, therefore, seemed to be facing less significant changes, although there was a comment about being less approachable to community members, as mentioned below:

> I don't know if our new place or lifestyles has modernized or became sophisticated, but I feel more distance with the community members now. Before [the resettlement], it was normal to invite them inside house, but now,

there are some people who don't want to do it…its different from before. (Female, in her 60s)

Although all members of the former community, of those returned and relocated, wanted to sustain good relationships with all, the form of community gradually changed despite their efforts. The majority of relocated members initially aimed to continue to be involved with the former community, yet things turned out to be different from expectations, owing to several reasons. Following responses describe these points:

> Having conversations with former community members became difficult. Lifestyles are too different between people living here [in the flatlands] and there [in the mountains]…I feel some people [here] think that we are now different from them [because of the more urbanized and sophisticated way of life]. (Male, in his 70s)

> …as time elapsed, I realized that commuting to my former land [in the original community] needs money [with the gas for car], while lands are far more suitable here to grow vegetables. So I only visit the mountains once a week or every two weeks… (Male, in his 70s)

> I still go to the former community every day. Before going to work in the morning, I go to my land where I grow vegetables. I am still involved in some of the activities held in the community. Though, I don't participate much in the new community nor have connections. (Male, in his 50s)

These comments reveal that sustaining unchanged relationships among the former community members is difficult to achieve.

Emotions of returned members toward the relocated members in this community were less harsh than community members in the other disintegrated community, *Nishi*. Nevertheless, the people who returned barely touched on this subject; they only talked about their lives and those of other people who returned, claiming nothing much had changed.

Communities disintegrated of *Nishi* and *Higashi* explained the changes that both relocated and returned communities faced, that is, relocated members became less outgoing with reduced ties and participations to community activities, while returned members became more bonded through enhanced ties and participation in community activities.

In short, the disintegrated communities of *Nishi* and *Higashi* laid out the general patterns of social capital change. Communities relocated generally suffered weakening of ties and became less social as a whole, while communities returned generally strengthened their existing

ties and became more vibrant, at least for the time shortly after their return. The age of people that relocated or returned also matters. Relocated elderly people particularly faced difficulty after relocation, being unable to adapt to their new environment and becoming more isolated because of loss of interactions with former community members, while lacking capacity to explore new relationships in the new sites. This was apparent in all the communities of *Minami*, *Nishi*, and *Higashi*, all of which had involved relocations. On the contrary, relocation was less stressful for younger members, and the younger fared better. They were able to explore new networks and develop them in the newly relocated site.

6.1.5 Resettlement choice and its impacts on community livelihoods

This section can be concluded by suggesting that, first, relocation, on its positive side, could improve a community's physical conditions drastically by reducing hazards and increasing living conveniences. This is particularly valuable for working cohorts and women. Second, on the other hand, relocation reduces the strength of community ties as a whole, which is particularly crucial for elderly members. Consequently, the elderly need special attention if relocation is to be enforced, so that they will feel secure and not isolated and bored in post-relocation. Repopulation, in comparison with relocation, causes less change in the community. On the positive side, ties and cohesion of the communities tend to be stronger than previous conditions. Such cohesiveness particularly plays an important role in maintaining communities, because many communities have lost their members through resettlement and suffering from depopulation. Strengthened ties and cohesion are perhaps functional for several years, yet it is difficult to expect them to continue for a longer time period.

Another important finding in post-disaster resettlement is the emotional gap or distance that is likely to emerge between the former households, between sub-groups that left and stayed in former communities. Such an emotional barrier can be aggravated because, the returned households had difficulty in maintaining and the physical environment of their community with their members sharply decreased. This was particularly apparent in community *Nishi*, where returned members had to intensify their efforts in managing the community. On the other hand, the level of discontentment toward relocated members by those who returned was much smaller in community *Higashi*, because its new housing site was designed to fit the needs of a down-sized community.

Rural resettlement, unlike its urban counterpart, the former community – in place, function, and symbolic meanings – continues to exist to a certain extent, even if the form of community changes with some members leaving. Relocated members in many communities often continued commuting to their former land, which resulted in continuous interactions with returned members. Such community – with some members living in and the others commuting to the place – is expected to continue, at least, for a generation currently using the lands.

6.2 Link of resettlement choice, programs and livelihood assets

6.2.1 Change of community assets pre- and post-resettlement by communities relocated, returned and disintegrated

Summarizing changes of four types of capital by communities relocated, returned, and disintegrated contributes to draw several patterns between resettlement choice on type of resettlement outcomes and sequence of change on community assets (see Table 6.1). In summary of contents discussed in the previous section, first, relocated community *Minami* faced small adverse effect in financial capital by using resettlement program and high *tateko* insurance coverage rate. The community's physical capital was improved by reduced hazard and improved convenience by relocating into flatlands. Its demographic capital changed minimally with collective relocation, and while change in social capital adversely affected the elderly, opportunities to extend increased for working cohort and women.

Returned communities of both *Kita* and *Chuo*, on the other hand, faced larger debts of financial capital by declining the use of resettlement programs provided by governments. Changes in physical capital as well as demographic capital were minimal by having most of the members collectively returning in place. For returned communities, social capital generally increased by strengthened ties and cohesion by having members returning together. As a result, elderly, working cohorts, and women were found to face minimal change in social capital as overall social structure of the community only changed minimally.

Meanwhile, disintegrated communities *Nishi* and *Higashi* had mixed results in changes of capital by sub-communities that returned or relocated. The majority of sub-communities members in community-disintegrated that did not avail themselves of resettlement programs or had minimal *Tateko* insurance coverage faced larger debts owing to reduced financial capital. Only a sub-community of Higashi that returned adjacent to original place suffered less

financially by using resettlement program supplemented by larger insurance coverage. Physical capital changed favorably in the order of sub-communities relocated to flatlands, to land adjacent, and returned in place. Demographic capital of this type of communities generally decreased, as total number of population drastically decreased. Nevertheless, the demographic structure was found to differ in relation to resettlement programs provided by the governments; sub-communities that availed themselves of governments' program had increased rate of elderly while other sub-communities that dismissed its use faced a decrease in its rate.

6.2.2 Resettlement choice, policies and change of community livelihood assets

Summary of changes on four types of community capitals by communities relocated, returned, and disintegrated further suggests two major dynamics. One is the influence of resettlement decisions on physical and social capitals, and the other is the influence of resettlement programs on financial and demographic capitals.

Influence of resettlement choice on physical and social capital

Resettlement decisions to relocate or return significantly affected physical and social capitals of communities, that is, relocation significantly increased physical capitals making life in the community more convenient, as it reduced the level of hazard and increased access to services with careful site planning. On the other hand, returning did not increase much of the physical capitals as communities were still inconvenienced by the travel distance to the nearest town center, although they could also benefit from upgraded public facilities and infrastructures. Additionally, social capital of communities was also affected by choice of relocation and repopulation. Relocation to another site weakened community, especially if the new site offered different lifestyles than the previous site. Returning generally strengthened community ties and cohesion to some extent, regardless of the different characteristics of communities. As these relationships explained, choice of resettlement by communities, to relocate or return, was found to draw certain outcomes simply by selection of either one.

Resettlement programs influence financial and demographic capitals

Meanwhile, financial and demographic capitals were largely influenced by the resettlement programs prepared by the local governments, rather than the resettlement choice by the communities. Several links are apparent: First, communities that utilized resettlement

programs and received large payments from *Tateko* insurance had the least long-term financial burdens. On the other hand, households that did not avail themselves of resettlement programs prepared by the government and/or had minimum insurance coverage were most likely to be in huge debt after resettlement. Second, the resettlement programs played an important role in supporting the less wealthy population, besides members of communities that collectively decided to use the programs. Households headed by the elderly or women turned out to be using more of these programs, and this has influenced the demographic composition of the community. As for communities in *Higashiyama* District, where a relocation program was provided, the proportion of elderly in the original communities decreased as many of them relocated into flatlands. On the other hand, communities in *Yamakoshi* District, where a repopulation program was provided, experienced increase of the proportion of elderly after resettlement. At the end, statistics showed that the concentration of elderly people was particularly significant – with the rate estimated to be around 50% in 2009 for the six most devastated communities in the district.

These outcomes suggest that resettlement programs were quite successful in satisfying the ideals, of supporting the most vulnerable, in the aftermath of the disaster. Nevertheless, the fact remains that the programs primarily attracted the elderly and women headed households, without significantly benefitting younger households; these outcomes suggest that the program and strategy of the local government was not a total success. Returned elderly residents faced less change than the relocated ones. Nevertheless, such a region in which the elderly comprise approximately half of its population is faced with a long-term issue of community sustainability.

6.2.3 Resettlement patterns and vulnerability of communities

Three different types of communities – those that relocated, returned, and disintegrated – face different levels of vulnerability in post-resettlement. This section summarizes the general observations on relationships between types of communities resettled and their vulnerabilities. Caveats, however, exist. First, the observed communities are located in rural declining areas having high concentration of elderly population. Second, unlike other development induced resettlements that require relocation to distant sites, relocation occurred in a proximate distance, which enabled the relocated population to easily commute back to former sites. This proximity enabled a large proportion of relocated villagers to continue their former way of generating

incomes, thereby minimizing the stresses caused by relocation. Having these caveats underlined, this section summarizes the vulnerabilities of post-resettled communities according to their types.

First, relocation can initially decrease social capital immediately after resettlement, but resiliency of the former declining community as a whole is expected to increase by adapting into the new host community toward sustainability. Enforcement of relocation can, if well planned, significantly improve physical conditions, on matters of convenience and less exposure to hazards. The elderly, whose high proportion is especially apparent in rural declining communities, may be absorbed into larger and younger populations of the new communities in the cities. Relocation, however, decreases the strength of social ties of the former community, although members of the working cohort are likely to extend their networks in the new site. The only severe impact is found for the most vulnerable population, the elderly, because they are settled in their previous way of living and find it difficult to be involved in the new community, while at the same time gradually becoming isolated from the former community. Overall, however, relocated communities become less vulnerable in the longer term by having better access to livelihood assets and reducing possible hazards.

Alternatively, repopulation in rural declining areas seems less sustainable in the long-term. Although returned communities may increase resiliency in the shorter term, they increase vulnerabilities in the long term. They would remain exposed to natural hazards and inconvenience of location. And the population is likely to continue to become older while also declining in numbers. The positive aspect of returning is the strengthened social ties and cohesions that were experienced by almost all returned communities. Such strengthened ties, together with mutual support in the communities, explain their enhanced resiliency to external shocks and stresses. Nevertheless, the positive impacts of returning, especially on the social aspect, seem to be evident only for the shorter-period range, as population is expected to decrease in the longer term. Furthermore, extension of new networks outside the community was unclear in returned communities. In summary, therefore, returned communities are expected to be more vulnerable in longer term. In the shorter term, however, the communities become more resilient against external shocks compared to relocated or disintegrated communities, because social ties and cohesion are reinforced in the process.

Disintegration appears to increase the level of vulnerabilities the most, especially for those who returned. It is because, first, returned sub-communities continue to be exposed to physical conditions that are inconvenient and hazardous. Furthermore, they need to manage community environments with reduced mutual help. Although social ties and cohesion among returnees strengthened, the absolute number of population declined, and extension of new networks outside communities was less apparent. Taking all these into account, returned sub-communities in disintegrated communities were found to be facing the highest level of vulnerabilities. Relocated segments of population in this community, however, have less vulnerability as a whole, in a similar manner to the communities that relocated. These suggest that returned groups in a disintegrated community will most likely bear the biggest difficulties in sustaining livelihoods, due to many adverse changes in livelihood assets. They are likely to face reduced resiliency even immediately after their return, and this endures in the longer period. The relocated members, on the other hand, will follow similar paths as relocated communities.

6.3 Conclusion

This chapter unpacked the dynamics and linkages among resettlement choice, programs, and livelihood capitals in post-resettled communities. One of the major findings was that resettlement choice of relocating or returning, indeed affected community capitals, however, only in terms of physical and social resources. It was suggested that relocation provides opportunities to physical conditions yet weakens social capitals owned by the former community. Repopulation, on the other hand, enhances social capital yet limits opportunities to improve physical capital. Meanwhile, resettlement programs were also identified to influence financial and demographic capitals of the communities after resettlement. Communities that availed themselves of resettlement programs generally faced less change in financial capital, although the part played by *Tateko* insurance was also significant. Additionally, communities that have more of their populations using resettlement programs were found to be aging communities, with vulnerable populations and households such as elderly and female-headed households.

Change in level of vulnerability between pre- and post- resettlement was also discussed by comparing communities that relocated, returned, and disintegrated. It was suggested that disintegrated communities face largest vulnerabilities as it is likely to face minimized community capital of all kinds. Communities returned, on the other hand, were suggested to face gradual

increase of vulnerability, as resiliency that increased after resettlement is invalid for the longer term. Communities relocated were identified to have more resiliencies in the longer-term, in contradictorily to its notorious fame, although elderly suffers in such move. Relocation did not appear to be a total failure in this case of post-*Chuetsu* earthquake, perhaps because the site relocated was commutable from the former communities and many ended to relocate collectively.

CHAPTER 7. PLANNING TOWARD BETTER RESETTLEMENT FOR COMMUNITIES AFTER DEVASTATING DISASTERS

Dynamics of post-disaster resettlement are complex, and cross-cutting observations help to explore them in detail. This dissertation researches the three facets of decisions, planning processes, and overall outcomes of post-disaster resettlement. Observations of several levels of stakeholders in governments and communities suggest that resettlement decisions, processes and outcomes are mutually influenced by multiple interactions among governments, communities and individuals. Such a holistic understanding of resettlement is essential for better planning. Further, investigating these components of post-disaster resettlement has revealed some phenomena that are clearly distinctive from other types of resettlement. These findings not only contribute to theories of post-disaster resettlement but also to planning practice for housing and community sustainability after devastating disasters.

This chapter, as a conclusion of this dissertation, has three sections. The first section summarizes the notable findings from this study, regarding resettlement dynamics. In particular, it reviews the findings on i) rationale of resettlement decisions, ii) influence of planning processes on decisions, and iii) impacts of resettlement choice on sustainable livelihoods. The second section presents propositions that may explain widely transferable findings regarding post-disaster resettlement planning. Lastly, in the third section, I summarize the theoretical contributions of this research to the prevailing literatures related to resettlement and post-disaster recovery.

7.1 Unpacking resettlement dynamics: decisions, planning processes and post-resettlement outcomes

7.1.1 Rationales for resettlement decisions

A gap exists between local government and community perceptions of what constitutes sustainable resettlement. In general, the way local governments in this study perceive long-term development – for financial efficiency or social capital protection – is the foremost underlying rationale supporting relocation and repopulation. An official's definition of regional sustainability may depend on whether they are pro-urban or pro-rural, and whether the local government is with or without flatlands. If the government is a larger unit, based in the flatlands, officials would rationally argue for relocation for efficiency. If the government is a

smaller unit, totally within the mountains, then they would support return by emphasizing protection of social capital. Regardless of size or location, governments are likely to make resettlement decisions based on macro perspectives with longer-term vision, which is different from communities.

Communities made their resettlement decisions based more on micro perspectives regarding their livelihoods. Their decisions were substantially based on the likelihood of continuing their former livelihoods. Residents were likely to decide on relocation if going back to live in the old sites seemed difficult and/or if the flatlands were more attractive because of financial opportunities and access to services. Geographic hazards in the original communities also played a large part in them not being able to return and continue living in the mountains. On the other hand, residents preferred to return if it seemed feasible to sustain their pre-disaster livelihoods and/or the community was content with mountain living. Their emotions toward their original communities also played an important role in decision making. For instance, residents who had negative feelings toward their original communities were more likely to decide for relocation, while residents with pride and contentment toward their communities were more likely to decide to return. Temporary displacement, which all communities experienced, had further released these inherent emotions; many residents who had negative emotions reaffirmed them during this period and decided in favor of relocating. In contrast, displaced residents who perceived that they preferred their former livelihoods back in their communities over urban livelihoods, decided to return. Meanwhile, the feasibility of commuting and continuing businesses cuts both ways – villagers relocate if they see commuting and maintaining business are feasible, while villagers return if they see commuting is not feasible.

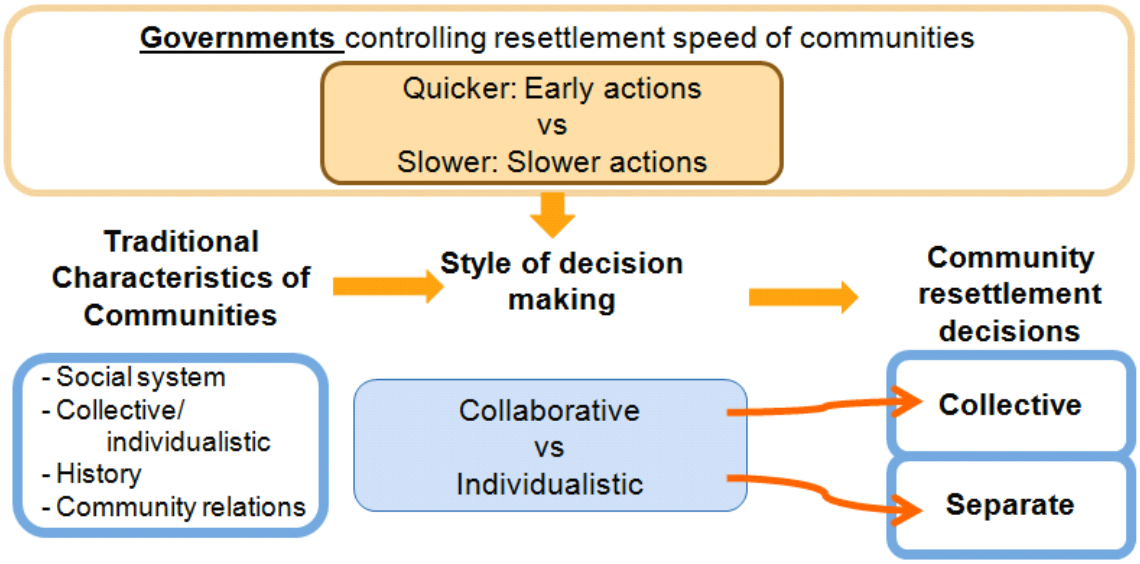
The age of the decision maker also influences resettlement decisions. The reason is that a household's selection of a preferred livelihood style depends on the age of the one with the power to decide. Additionally, resettlement programs were not attractive enough for households to influence their decisions, even if these programs benefitted them financially. Instead, many sought alternative financial arrangements to pursue their preferred decision.

7.1.2 Dynamics of resettlement processes between governments and communities

The dynamics of resettlement processes differed between those led by the government and those found in the communities (see Figure 7.1). In brief, government-led processes

generally did not influence communities in choosing between relocation and return; however, they critically controlled the overall resettlement speed of communities. Quicker actions of government, during the displacement period, benefited communities by reducing uncertainty, frustration, and anxiety regarding resettlement. Slower actions of government, on the other hand, with inconsistent and uncertain information, added to the frustration and anxiety of communities. The variations of speed of local governments further influenced the level of satisfaction of decisions made by households; households were less satisfied with decisions made under faster processes, and were more satisfied with decisions made with longer time spent to think things over.

Figure 7.1 Conceptual diagram of government-community dynamics of resettlement decision processes



The style of decision making found within the communities was identified to be one of the most influential factors affecting resettlement decisions and post-resettlement collectiveness of communities. In particular, style of decision making, represented by a collaborative or individualistic style, has directly influenced the community resettlement decisions. That is, communities with collaborative styles shared more information related to resettlement with their members and preserved a sense of mutual trust, leading them to collectively resettle. Conversely, communities having individualistic decision making styles were found to share less resettlement information among their members, with limited mutual trust among them, resulting

in community disintegration. Furthermore, traditional characteristics of communities that existed prior to the earthquake were found to form the decision making styles of communities throughout the resettlement phase. It is, however, noteworthy that collectiveness does not predict whether communities choose relocation or repopulation.

7.1.3 Post-resettlement outcomes

The choice of resettlement type affects communities in several ways. This research used livelihood assets as a way to assess these effects. Among four types of livelihood assets observed, resettlement choice was found to influence mainly physical and social capital. For example, if communities decided to relocate, then physical capital is likely to increase because of careful site planning. This decision to relocate, conversely, reduced the social capital of the former community through minimized ties and cohesion between community members. The elderly were particularly affected adversely, because they had minimum capabilities to readjust themselves to the new environment. The younger generation and female population, on the other hand, tend to enjoy life in the new settlement with fewer burdens and upgraded convenience for errands. With the decision to return, on the other hand, social capital of the former community was enhanced in the short-term, by confirming their ties and bonds through the resettlement phase. On the other hand, their opportunities to improve physical capital were limited, because their physical conditions were minimally improved by returning to the original site.

Meanwhile, financial and demographic capital was found to vary depending on the provided resettlement programs, but not on the resettlement choice. In particular, communities that availed themselves of resettlement programs generally faced less financial burdens than those that did not. Although *Tateko* insurance and change of income opportunities contributed to communities' financial recovery, resettlement programs also contributed significantly. Furthermore, resettlement programs equally supported community members by providing a fixed amount of compensation. Demographic composition of communities was also affected by the resettlement programs, regardless of types of resettlement. Communities, if availing the program, tended to have a more elderly population than others after resettlement, perhaps because the least financially privileged, i.e. elderly and female-headed households, relied on them (the programs).

Change of community capital through resettlement also changed their vulnerability and long-term sustainability. Among the three types of communities – relocated, returned and disintegrated – disintegrated communities had the most increased vulnerabilities because of a decrease in community capital. In particular, returned members in the disintegrated communities were most adversely affected because they were required to render additional efforts to manage the former community with reduced members. Returned communities, on the other hand, tended to face a gradual increase of vulnerability, as the social resiliency that initially increased after resettlement decreases in time. Such communities are expected to gradually again face difficulties in order to sustain their livelihoods, under the declining political economy of the region. Communities relocated, on the other hand, have opportunities in developing resiliencies in the longer-term, with improved living conditions and possible enhancement of social fabric in the new host community. Although relocation is notorious for its difficult implementation, the decision to relocate was not a total failure. Thoughtfully planned new sites could be more sustainable for communities that would otherwise face harsh physical damage from the earthquake, regional decline, and emotional disfavor of mountain life.

7.1.4 Resettlement frameworks

Proposed framework for successful resettlement

All of the findings on rationale of resettlement decisions, influence of planning processes on decisions, and impacts of resettlement choice on sustainable livelihoods, suggest that the factors forming resettlement are mutually influenced, and because of this, a holistic approach is inevitable for a successful resettlement. The proposed framework for the successful resettlement, therefore, is explained in Figure 7.2. Because the dynamics of resettlement are complex, the representation of this diagram is limited to the critical dimensions of planning and policy making.

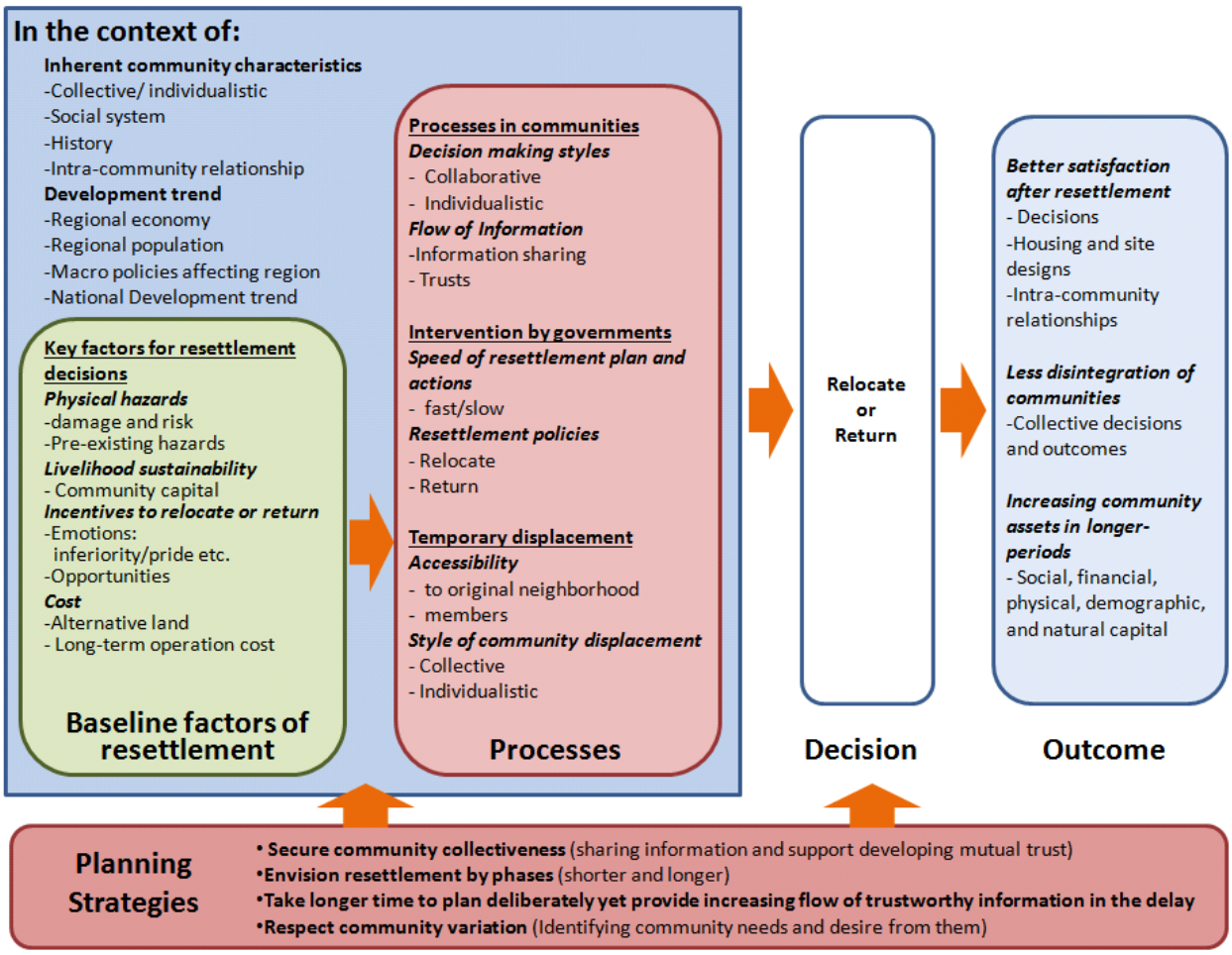
The starting points of the diagram are the key baseline factors for the resettlement decisions: physical hazard, livelihood sustainability, incentives to relocate or return, and cost (shown in the left lower box of the diagram). Communities could initially decide on their resettlement paths by assessing these factors. Planning processes that are i) found in communities, ii) provided by governments, and iii) formed during temporary displacement, can also significantly influence resettlement decisions (shown in processes box in left-center of the

diagram). Depending on how these processes function in the communities, they may change their original intention to relocate or return. In addition, these baseline factors of resettlement and processes are fixed in the larger context of inherent community characteristics and regional and national economic trends (shown in left larger box). Therefore, many elements that contribute to successful resettlement inherently exist in communities; thereby communities without such elements would be more challenged to achieve better results.

Planning processes could, however, help to enhance factors that are deficient in such communities (shown in planning strategies box below). Several particular efforts could be provided around: i) securing and nurturing community collectiveness, ii) planning resettlement by envisioning both shorter and longer development impacts, iii) taking longer time for careful planning, and, iv) being flexible to community variation, all of which could nurture key factors that are needed for successful resettlement. To do so requires information flow from the governments and planners, and it also requires trust among communities and between communities and government.

This diagram suggests that planning strategies could be adopted to supplement key factors each community needs to enhance. By assessing the conditions of each community in relation to these key factors, and then implementing appropriate planning strategies, communities would come to more satisfying decisions, followed by improved outcomes. Communities would also be less disintegrated after resettlement, making it easier to rebuild community assets.

Figure 7.2 Framework for successful resettlement



Factors observed to affect resettlement decisions after disasters

Several factors were observed in this study to affect the decision between relocating and returning (See Figure 7.3). These decisions take place within a larger context; that is, relocation is about proactive adaptation to the macro social changes, to such trends as national and regional economy. On the other hand, return is about a continuation of former livelihoods without respect to the larger external trends. Given such a definition of resettlement and adaptation, relocation may need to be considered in a longer time frame, in which such change is inevitable. Four additional factors are observed to be important for making resettlement decisions. First and most critical is the physical hazard. Communities facing significant hazard, of devastation caused by pre-existing geological hazards should relocate urgently to secure their short- and long-term safety. Livelihood sustainability, which is explained by the level of availability of

community capital, i.e. financial, social, physical, and demographic, is another important factor affecting resettlement decisions. If community capital in the former community is somewhat limited, then relocation is likely to be suggested as an opportunity for improvement of livelihoods, especially if they are younger in age; however elder communities would suffer with relocation. Consequently, return may be better for elderly communities. Age, therefore, needs to be included in decisions in regard to livelihood sustainability. Communities' incentives to relocate or return also play a crucial part. On one hand, emotions toward original communities play a large part in deciding resettlement, while on the other hand, perception of economic and livelihood opportunities are also important. Cost is also another element that should be included as one of the factors for resettlement decisions. It is worth noting, however, that precise cost-benefit calculations are difficult to implement under time pressure, as too many cost variables need to be determined. Nevertheless, the availability of alternative lands beside the original ones and long-term operational cost of the former community, for example, are among the financial variables to be considered. All of these factors are suggested to affect resettlement decisions. In addition all communities are placed in different social context. Making a decision to relocate or return, therefore, needs to occur in each community by careful assessment and consensus building.

Figure 7.3 Observing factors for the post-disaster resettlement decisions

Evaluating factors	Relocate (adaptation)	Return (continuation)
Physical hazard		
Damage from disaster and risk	significant	minor
Pre-existing geological hazards	significant	minor
Livelihood sustainability		
Financial capital	unbalanced	balanced
Social capital	less	more
Convenience (Physical capital)	inconvenient	convenient
Age (demographic capital)	younger	older
Incentives to relocate or return		
Emotions: Inferiority/ pride, etc.	significant	minor
Opportunities	minor	significant
Cost		
Alternative land	available	unavailable
Long-term operation cost of former community	expensive	inexpensive
Regional trend		
Population	declining	improving
Regional economic trends	declining	improving

* physical hazard has most direct impact on resettlement decisions, while regional development trent has gradual impact.

7.2 Learning from "event-triggered" resettlement: the decision-forced resettlement of the *Nijumurago* areas

The stories of resettlement in the *Nijumurago* area after the devastating earthquake provided eight propositions regarding post-disaster resettlement. In framing this resettlement after disaster, a new concept is proposed, named "event-triggered" resettlement. This type of resettlement is distinctive from forced relocation, which has traditionally been the subject of relocation research. In forced relocation, populations are involuntarily forced (pushed) to resettle in alternative location from the original ones. In contrast, throughout this research, the affected communities of *Nijumurago* areas were debating whether to return or relocate, having a choice to select either type of resettlement in reestablishing a place of living. This distinctive style of resettlement is in-between being voluntary and involuntary: being forced to temporarily displace from original communities but having options to reestablish their lives in the original site or a new one. Nevertheless, because there is a time limitation in making a decision, this type of resettlement is also different from completely voluntary relocation. This form of resettlement that is in-between voluntary and involuntary occurs because the entire resettlement process is triggered by unexpected events, best exemplified by sudden natural disasters. Such unexpected events unveil the rooted preference and emotions of communities, which are

normally veiled, to become evident in the resettlement decisions and processes. This "event-triggered" resettlement, then, needs to be established for explaining the resettlement after disasters. This type of resettlement dynamics could alternatively be called "decision-forced" resettlement, because unexpected events force the affected population to make a resettlement decision that would not have occurred under normalcy.

7.2.1 Propositions regarding post-disaster resettlement

The stories of government and communities in the *Nijumurago* area on resettlement after the devastating earthquake have suggested eight propositions regarding general principles of post-disaster resettlement. The following eight propositions are proposed as the principles that create the framework of "event-triggered" resettlement.

Proposition 1: Post-disaster resettlement is a dynamic that develops based on the inherent characteristics of the affected areas.

The traditional social and physical characteristics of the disaster-affected area play a vital role in the decisions and outcomes of resettlement. The physical and social conditions of the affected areas significantly influence the decision makers' resettlement decision, because first, the geographic conditions force a decision either to relocate or return, and second, the social conditions also carry an emotional effect on resettlement decisions. Additionally, the style of decision making during the resettlement phase is formed along the traditional characteristics of social structure, intra-community relationships, and level of collaboration. The style of decision making, therefore, is almost predictable and difficult to change within the limited-time frame of resettlement after disasters. Furthermore, the style of decision making also affects post-resettlement outcomes, which suggests that the inherent characteristics of the area indirectly influence the post-resettlement outcomes.

For example, the resettlement decisions of the *Nijumurago* communities were found to be influenced by the likelihood of continuing their former livelihoods, which, in part, depended on whether their original communities were safe or prone to natural hazards. Emotions that had developed over the years toward their original communities also played a large part in making decisions. Similar logic was also apparent for decisions by the local governments: the existing geographic and social conditions of their areas played a major role in influencing government

officers to support relocation or return of their communities. Furthermore, observation of the *Nijumurago* communities revealed a strong link between inherent community characteristics to the planning processes, in that their decision making styles while displaced in the temporary housing were formed along the line of how the communities were traditionally operating. That is, communities originally being more collaborative tended to have collaborative decision making styles, while communities traditionally more individualistic were likely to have an individualistic style of decision making. And lastly, these styles of decision making were found to directly affect the decisions of communities. As a result, communities having collective styles decided to resettle collectively while communities having individualistic styles decided to resettle independently.

Proposition 2: The main reasons for households' resettlement decisions are the likelihood of continuing their former livelihoods and their inherent emotions toward their original communities. These reasons are likely to become evident during their temporary displacement period away from home.

Households decide to relocate if the level of hazards in original communities is so high that they cannot continue their former livelihoods in that location. They determine their original site uninhabitable if disaster induced damage is enormous or if the locations are traditionally hazardous. On the other hand, households decide to return if continuing their former livelihoods is economically and socially feasible in the original communities.

Emotional aspects also play a large part in resettlement decisions; households decide to relocate if they are emotionally detached from their former communities. In such cases, relocation is understood as an opportunity for redefining their place of living. Meanwhile, households decide to return if they are emotionally bonded to the original communities. In this case, they are often proud of and feel contentment in their communities. These factors of livelihoods and emotions toward their communities are particularly reassessed and confirmed during the temporary displacement period.

For instance, relocated communities in the *Nijumurago* area explained that they decided to relocate because first, their original communities were devastated by the earthquake and they could not foresee returning, and second, their communities were traditionally hazardous from

landslides and flooding. They also explained that they are emotionally detached from their original communities with a history of marginalization and physical isolation. Returned communities, on the other hand, explained how their lives back in the mountains are comfortable with low cost of living and members they trust. As for the emotional aspect, the households referred to their pride in their communities, sense of identification with their communities, and contentment in participating in the rural activities. Households reevaluated their former communities during the displacement period, which further released their inherent emotions. Many households of the *Nijumurago* area explained how they gradually began to think about relocation or return while in temporary housing.

Proposition 3: The speed of resettlement plans and actions by the local government influences the resettlement decisions and outcomes of communities. Timing when local governments require communities to make resettlement decisions also influences the type of resettlement outcomes to be selected by the households.

The speed of resettlement plans and actions by the local government influence communities' decisions and resettlement outcomes in two ways. First, in response to quick government actions, resettlement plans of communities are likely to be achieved without much change from the initially proposed plans. To this extent, communities will be facing their future with less stress and without much time spent in uncertainty. Second, however, early actions of government pressure communities to decide and act early, with minimum time for careful thought, which results in greater eventual dissatisfaction by communities after resettlement. Slower resettlement actions by the government, on the other hand, produce opposite phenomena. First, greater stress and anxieties will emerge in communities as the duration of uncertainty stretches with resettlement plans frequently changing. Second, however, slower actions of government provide communities a longer time to carefully consider their decisions, which results in more satisfaction of livelihoods after resettlement. Furthermore, the timing when local government requires communities to come up with a resettlement decision also influences the resettlement outcomes; if greater time is permitted before coming to a decision, a community's decisions are more likely to reflect the inherent collective or individualistic nature of the communities. In the case of the *Nijumurago* communities, those that belonged to *Ojiya* City were provided with early government actions. Consequently, these

communities had to make early decisions whether or not to avail themselves of the government-provided program at an early stage, and subsequent processes followed naturally toward final resettlement without much change. They therefore experienced minimal anxiety toward future settlement during the temporary displacement period. However, gradual dissatisfaction emerged after they began post-resettlement living, because they had not carefully thought about the housing site and designs while making their resettlement decisions. The communities in *Yamakoshi* Village had opposite dynamics. With the slower official resettlement processes, communities faced an uncertain decision environment and thus faced larger stresses and anxiety. Many informal plans sprouted and disappeared over time. However, with abundant time for careful thinking about where to settle permanently, households or communities are generally more satisfied with their decisions and with their post-resettled housing.

Additionally, the length of time given by local government for communities to make their resettlement decision was found to play a significant role in affecting resettlement outcome. Two communities in *Yamakoshi* Village ended up with different decisions from the earlier plans to resettle – decisions of households in a community having a collective nature changed from individualistic to collective decisions, while decisions of households in a community having an individualistic nature changed from collective to more individualistic decisions. Such change reveals that the final decisions of communities may have resulted differently if they were required to decide earlier in the resettlement.

Proposition 4: Financial incentives alone are not likely to induce desired resettlement decisions. However, such incentives are important in supporting livelihood restoration after disasters, because they help those who are most in need.

Financial incentives for specific types of resettlement cannot further the resettlement aim of the policies, because households with more financial power continue to pursue their preferences regardless of the incentives. This is because resettlement decisions are largely about restoring livelihoods in residents' preferred lifestyles; financial incentives are merely one dimension of support for their livelihoods after resettlement. However, on the other hand, financial incentives supporting livelihood restoration after disasters are important, because they help those who are most in need.

For the case of the *Nijumurago* communities, two types of households availed themselves of the provided resettlement programs. The first group of such households was in communities that had already reached a decision and used the program to financially support their preference. The other group that used the resettlement programs was the needy households, i.e. households that could not take out loans or did not have enough money for new housing construction, and they used the financial assistance program regardless of their resettlement preference. Meanwhile, the majority of households in the *Nijumurago* area decided to pursue their resettlement preference, regardless of the availability of such programs. The financial incentives that did not cover the total cost of new housing construction were less appealing to them, leading them to use other strategies – such as inter-generational loans – to pursue their preferred choice.

Proposition 5: Community processes, through their style of decision making, have the greatest role in determining resettlement decisions and outcomes. Communities are also capable of developing plans and taking actions on resettlement on their own.

One of the reasons for the importance of community processes is the limitation of local governments' involvement in community resettlement planning due to their workloads on post-disaster relief and early recovery. The other reason is related to the inherent characteristic of communities; that is, communities develop either collective or disintegrated post-disaster decision making styles by the way communities existed prior to the earthquake. Such inherent characteristics of communities, i.e. collaborative or non-collaborative, are difficult to change, by external intervention in the short-term of resettlement. Depending on their inherent style of decision making, the resettlement decisions result in either collective or disintegrated resettlement outcomes. Furthermore, communities are also capable of developing plans and taking actions on resettlement on their own, without much external assistance.

In all of the communities in the *Nijumurago* areas, whether governed by *Ojiya* City or *Yamakoshi* Village, those that were inherently collective made collective decisions and relocated accordingly. On the other hand, communities that were traditionally disintegrated made separate decisions and resettled individually. All of these communities, however, were capable of developing plans and taking actions on resettlement, without depending on government actions. For example, community *Minami* that decided to collectively relocate took the lead in

their resettlement planning in *Ojiya* City, and settled in a location where they preferred. Communities *Chuo* and *Higashi* also decided on their own resettlement without the formal assistance of *Yamakoshi* Village; community *Chuo* decided to return without going through land readjustment, and community *Higashi* decided to disintegrate by having some households leaving and others returning. These examples suggest that communities are capable of creating and carrying out plans themselves. Nevertheless, formal support and guidance from the local government would help to consolidate and improve their plans and actions.

Proposition 6: Age plays a crucial role in post-disaster resettlement, in all aspects of decision making, planning processes, and post-resettled communities.

The age of the household decision maker influences resettlement decisions. Working cohorts are less financially restricted, allowing them to pursue their preference. Cohorts getting closer to the retirement age, as those in their 50s, begin to prefer less change in resettlement and are hindered from taking the risk of drastically changing their lives. Elderly populations, as those aged over 65, prefer a resettlement decision with the least change in their livelihoods from pre-resettlement living.

Conversely, the disaster changes household dynamics, and older householders are less likely to be active in the community planning processes. Disruption of livelihoods by disaster shifts power within communities and households, from elder to younger populations, mainly due to financial reasons. Such power shifts often occur in multi-generation households, and, participation in the formal planning processes is likely to be represented more by younger populations. The result is that elders are less present in formal planning processes than they might have been before the disaster. They continue to participate in informal processes; however, their presence depends on inherent characteristics of their communities.

Lastly, resettlement affects younger and elder generations differently. For example, the choice to relocate particularly adversely affects the elderly, while relocation can have favorable effects for younger generations.

This phenomenon was evident in the *Nijumurago* communities. The eldest male who played the role of decision maker before the earthquake gave up this position in the household, as many of them were no longer able to take financial responsibility for their households.

Consequently, the decision making power was naturally assumed by another person with the financial capacity. Furthermore, because of this reason, many elderly inhibited themselves from attending and participating in the planning processes that were held in the communities with members and local governments. A particular adverse effect was on the elderly that relocated, because their living environments drastically changed, and they were unable to adjust in their new livelihoods.

Proposition 7: Neither relocation or return is the best type of resettlement in all circumstances; successful resettlement is interpreted differently among distinctive groups of people by age, gender, and different backgrounds. Collective resettlement, however, is likely to be more sustainable than that which is disintegrated. Furthermore, careful deliberation under a long-term vision is critical to a more sustainable resettlement.

Resettlement is a complex dynamic in which decisions, processes and outcomes are mutually influenced by multiple interactions among governments, communities, and individuals. It is also affected by the macro development and economic trends surrounding communities. In addition to this, successful resettlement is interpreted differently among groups of people by age, gender, and individuals having different backgrounds. From the macro-regional perspective, sustainability could be a measure of resettlement success. From the micro-level perspective, personal satisfaction with livelihood could be a measure of success. In this logic, the interpretation of success varies among governments and groups of people by age, gender, and individuals having different backgrounds. Nevertheless, if sustainability is set as an indicator for successful resettlement, collective decisions and actions are preferred. Furthermore, careful deliberation under a longer-term vision, whether by the community or the government, seems to result in more sustainable outcomes.

Nijumurago communities explained that residents perceive their resettlement a success if they were living the post-resettlement life they expected; yet the expectations of post-resettlement varied. For example, the elderly population considered resettlement more successful if it involved less physical and social changes, while, in contrast, more changes meant opportunities for women and younger workers. For women and younger workers, relocation was an opportunity to experience urban living and improve their living conditions. Similarly, two governments of *Ojiya* City and *Yamakoshi* Village also had different definitions of

successful resettlements, with one focused on economic development, and the other on community preservation. Both were defined under the notion of regional sustainability.

Collectiveness of communities, whether relocating or repopulating, was found to help sustain the resiliency of communities after resettlement. *Nijumurago* communities that disintegrated faced the largest vulnerabilities, as they were likely to face reduced social ties and networks among community members. Disintegration throughout the planning process also caused new conflicts between members in the community who chose different resettlement types. On the other hand, such problems were minimal in communities that had collective actions; for instance, although relocated communities experienced reduced strength of communal ties, no apparent conflicts emerged nor ties completely disappeared in the new settlement. Community members tried to support each other in times of need, especially among elderly members. Furthermore, communities that were traditionally collective took collaborative resettlement processes, by sharing information and further enhancing trust among them. Community ties that existed in collective communities also influenced members to collectively resettle by naturally building consensus. This trust and information sharing was only found in collective communities, which leads to a suggestion that preserving collectiveness is critical in resettlement. Lastly, but not least, communities that took longer time in making resettlement decisions in the *Nijumurago* area seemed to have more satisfaction after resettlement. This was because such communities made a decision after considering all possible paths they could take, and they took the best possible decision at the time of decision.

Proposition 8: Relocation is politically unpopular; however, it may not bring in as much adverse effects as anticipated, especially under event-triggered resettlement.

Relocation has always been unpopular. Forced relocation is suggested to be avoided wherever possible (Aberle, 1993; ADB, 1998). Relocation has further gained notoriety of disrupting communities' sustainability and pushing them into further vulnerabilities (Bartolome, 1984; Oliver-Smith, 2009). The public view also generally sees relocation as a bad policy that should be avoided and minimized. The example of *Ojiya* City illustrates this point. The City and its officers suffered considerable criticism for providing relocation programs. They were severely criticized by the media, especially because their neighboring local government,

Yamakoshi Village, received national support with its slogan of "let's go back to *Yamakoshi.*" Often, the City was blamed by the media for supporting relocation.

Nevertheless, disaster affected populations are not entirely forced to relocate, by having some degree of freedom to choose between relocating and returning within a context of governmental policies. Although they are forced to displace temporarily, they have the option to either relocate or return, although constrained by time. In such a framework of event-triggered resettlement, relocation is not always an adverse choice, and supporting relocation is not an inappropriate strategy. The relocated households in *Nijumurago* communities suggest that relocation had contributed to improve the communities' physical conditions, if appropriately planned, and further benefited women and younger population by providing better access to urban services. Relocation also contributed to reduce the risk from natural hazards that they had long faced in the mountains. Furthermore, in the longer-term, the strength of social ties that decreased initially is expected to rebound with newly emerging ties that were apparent in the new site. The adverse effect of relocation, as prevailing literature suggests, is not necessarily the case under event-triggered resettlement.

7.2.2 Implications for policymakers and planners facing post-disaster resettlement

There are a few additional implications for policymakers and planners to keep in mind, besides the eight propositions explained above.

1) Revisiting the role of government in post-disaster resettlement

Understanding the roles and limitations of local governments is vital. Although governments are expected to be leading actors in recovery and resettlement after disasters, this is not always the case. They are usually limited in both manpower and time throughout the recovery stage, being both victims of disaster and directors of recovery works, so that they cannot host participatory planning. Given that communities play a crucial role in determining the resettlement decisions and outcomes, the role of governments could be geared more toward support, rather than as lead. By observing the inherent nature of the affected communities, governments could provide greater support to communities that are less collaborative, which are likely to end with less success, while being flexible in responding to the needs of other communities that are capable of having their own resettlement visions and plans.

Localities are increasingly beginning to face more responsibility in recovering from natural disasters (for example, see Ganapati & Ganapati, 2009; Johnson, 2009). Both communities and local governments play vital roles in leading better recovery. For this reason, understanding the roles of communities is becoming more important to be recognized by policy makers and planners, so that better coordination and trust are established. Additionally, being aware of intra-community dynamics can help governments to respect the characteristics and needs of communities to contribute to better resettlement.

2) Dealing with post-disaster resettlement in declining regions

The question of supporting either relocation or repopulation gets more complicated when the pre-disaster state of communities is vulnerable, such as if the region is declining. In theory, relocating to a new place often disrupts a community's solidarity and livelihood, and additionally nurtures distrust between residents and the government (Ingram, Franco, Rio, & Khazai, 2006; Klein, 2007). Conversely, settling in a new place may provide previously vulnerable populations with opportunities to explore new jobs and have access to better infrastructure. Although returning generally helps to preserve social capital, it may not always be the best solution for declining regions. Continuing vulnerable or declining livelihoods in the original place would probably further intensify the inherent difficulties, unless population inflow and broader regional sustainability are expected.

Relocation can help reduce longer-term vulnerabilities of declining communities by having a new site that is well-planned. Often, new sites planned in locations with good access to infrastructure and services can function to reduce vulnerabilities of communities. Furthermore, relocation, by absorbing the elderly into a larger and younger population of the new communities, could alleviate the skewed age distribution of the former community, although it may adversely affect social ties of the elderly.

In this context, supporting returning becomes particularly difficult when national and regional development is minimal and communities themselves are short of population for community operation. Although policies to revitalize declining communities by attracting urban population should continue to be considered, such programs have not been successful to date. It is perhaps because first, urbanites are not accustomed to permanent rural living, and

second, rural communities are not yet suited to accommodate outsiders because of physical and social reasons. Nevertheless, ending the communities means loss of culture, history and identities that cannot be easily reconstructed. Thus, seeking ways to sustain communities through possible development is worth continuing. One of the possibilities, although disfavored by rural communities, is to rearrange several communities to closer proximity upon returning. By doing so, efficiency may be increased while social ties and networks could possibly emerge and increase the sustainability of the community.

3) Envisioning resettlement by phases in declining regions

Governments cannot simply support relocation or repopulation without understanding regional and national development trends. This is because local sustainability is strongly linked with national economic and demographic trends. Nevertheless, this research suggests that personal preference and emotional aspects also play important roles in resettlement schemes, and paying attention to these aspects is essential for successful resettlement outcomes. In this context, suggesting that local governments solely support relocation for the purpose of efficiency alone should be put aside.

Flexibility is therefore needed to respond to community needs and emotions that change over time. That is, the preference to return or to relocate is expected to change over time, and thus, resettlement policies should change emphasis over time. For the shorter-term, repopulation could primarily be supported, as it will enhance resiliency of communities while giving satisfaction to those that decide to return. The choice to return is particularly effective for the elderly by preserving quality of life. Overall, returning communities could retain their identities and preferred lifestyles while their former communities continue to exist. The government should also support relocation as a long-term strategy, however. Communities will gradually face the impact of depopulation and regional and national economic decline, which would make them less sustainable.

7.3 Theoretical contributions

A new notion of event-triggered resettlement

This research has made three main theoretical contributions. The first contribution is the new characterization of resettlement after disasters, as an “event-triggered” resettlement. So

far, this concept is not recognized in the post-disaster housing literature; traditionally, resettlement in the post-disaster housing literature is explained as a forced relocation. It mainly suggests that households are involuntarily displaced after disaster, and are then forced to make a decision to move permanently to a location either back in their original site, to a neighboring site, or an alternative place entirely different, under the context of governmental policies. The newly recognized "event-triggered" resettlement, on the other hand, is not a mandatory relocation, and provides some degree of freedom in making a resettlement choice. Nevertheless, this type of resettlement is also distinctive from voluntary relocation, because the households' resettlements have to be undertaken within a limited timeframe. A further difference of this type of resettlement, contrasted to both voluntary and involuntary, is that the entire process of resettlement is in response to an unexpected event. To this extent, traditionally veiled emotions and characteristics of communities are likely to become evident in the decision making processes and outcomes, which are less apparent in voluntary and involuntary resettlements.

Refining two central models of post-disaster housing and resettlement

The second contribution of this research is refining the two central models of post-disaster housing and resettlement. In Quarantelli's (1982) model on the phases of post-disaster housing, he introduced four sequential stages: i) emergency sheltering, ii) temporary sheltering, iii) temporary housing, and iv) permanent housing. As per his definition, the temporary housing is defined as the phase when longer-term livelihood recovery perspectives come in to restructure household routines. He also touches on the housing types that are available during this stage. I, however, in addition to these explanations, suggested that there will be different types of decision processes, i.e. collaborative and individualistic processes, to be included in this temporary housing phase. As for the next phase of post-disaster housing, the permanent resettlement phase, Quarantelli simply explains that victims return to their rebuilt homes or move into new permanent homes, and that it is the hardest process to complete. I build on his explanation by suggesting that the permanent settlement comes in several different types: return in place, return adjacent, relocate collectively, and relocate individually. These different types of permanent settlement are largely affected by the characteristics and time duration of the planning phase – which mainly occurs in the temporary housing phase.

Quarantelli's housing model did not include these dimensions of planning and time; I believe that my suggestion on this is another addition to the central model of post-disaster housing.

The importance in looking at the time and planning dimension in resettlement also touches on the needs of revising Scudder's (1985) dynamic model of settlement processes. Scudder explained that there are four distinctive phases in new land settlement: i) planning and recruitment, ii) transition, iii) economic and social development, and iv) handling over and incorporation. As for the description of the planning and recruitment phase, he simply explained that in this phase, planning for resettlement and infrastructure begins to be developed, through feasibility studies, planning and design, as well as initiation of these planning projects. This research, however, additionally suggests that the characteristics of the planning processes of the stakeholders as well as the time of development controlled by the government (through such events related to regulations, plans, and actions) matter on the outcomes of resettlement.

Second generation recovery and successful resettlement

I additionally suggest the need of considering the phase of "second-generation recovery," a longer phase after permanent resettlement that continues beyond is the time period framed by the two models of Quarantelli and Scudder. Although these two models only consider the settlement of the current generation, I offer the need of thinking further to the next generation, by integrating regional sustainability as a dimension of successful resettlement. Relying on the definition of sustainable livelihoods to measure success, I explained that the sustainability of resettled communities changes over time, along with a gradual change of community capital that responds to macro-development trends. I therefore suggested, within this framework, that the success or failure of resettlement may not be clear until later on. I also proposed that a longer decision phase may lead to more sustainable outcomes. When the decision phase lasts longer, decision makers think more carefully about their decisions, which results in more satisfaction at the end. This sets up a framework to further explore the tension between speed and deliberation in producing sustainable outcomes.

7.4 Concluding comments

7.4.1 Transferability

Although Japan is currently one of the world's most developed countries, its history as a technologically modern country is not very long. The country's significant development came only after WWII and accelerated in the 1980s, which hastened urbanization and increased disparities between urban and rural living. Despite the fact that national development had influenced rural areas with upgraded and modernized infrastructure, aspirations toward modernized urban life continued to persist as rural living had always been severe. The point here is that this urban-rural divide is apparent not only in developing nations, but also in the industrialized countries. Thus, many of the findings of this dissertation are relevant to a wide range of international settings.

In observing the resettlement dynamics after a natural disaster, this research included both rural and urban perspectives with observations on the emotional and cultural importance of economically declining rural areas. Disasters can and do occur in such settings in many rural regions across the world, in both industrialized and developing nations, currently facing increased vulnerabilities due to hastened depopulation and aging.

Furthermore, the findings regarding post-disaster resettlement pursued in a declining region are not limited to small communities in rural areas. In fact, the targeted area represents small neighborhood-scale units of a whole that was devastated by a major earthquake, and it included the entire dynamic of resettlement after disaster – communities being temporarily displaced and being forced to make a resettlement decision under regional decline. This type of setting – making decisions and planning for resettlement after disasters in regions that have been losing population and economic vitality – exists in many other parts of the world, even in the urban ones, such as New Orleans. As a result, I believe that the findings of this research are applicable to other parts of the world, and can provide relevant insights to practitioners and theorists who work on post-disaster resettlement issues.

7.4.2 Future research

Three villages of *Kawaguchi* town that belonged to the *Nijumurago* area were not included in this in-depth research due to research design. Nevertheless, I had opportunities to

talk with some key informants, such as former *Kawaguchi* Town officers. One of them gave me surprising information: the rate of households that reconstructed their permanent residence in the former three communities of *Nijumurago* area was approximately 75%,[78] which is very much higher than the 52% of households returned for the districts of *Higashiyama* and six-most affected communities of *Yamakoshi*. The degree of damage in these three communities in *Kawaguchi* Town was similar to other *Nijumurago* communities. I then asked him about the evacuation and reconstruction process of villagers and he gave a pithy reply that they were never displaced from the neighborhood. The Town, despite its boundary inclusive of flatlands, did not have enough flatlands in the town center to accommodate affected villagers, nor did it have any plan to be merged into another city to send their villagers for temporary housing.[79] Villagers therefore evacuated to safer places in their communities after the earthquake and constructed temporary shelters and housing, and naturally initiated reconstruction. In this process, the former officer further mentioned that the community members never had to struggle with the decision of whether to return or relocate, because they continued to live close to the original site. This conversation struck me as it brought to light that the location where people are evacuated during recovering process, for temporary shelter and housing phases, makes a large influence on the post-resettled communities. Post-settlement of *Kawaguchi* communities also suggests that *Higashiyama* and the six most devastated communities of *Yamakoshi* perhaps would have had retained more members if they were displaced to sites closer to the original communities. Although such decision to stay in the closest possible sites may not be the ideal solution in regard to the aspects of hazard threats, such distinctive outcomes of *Higashiyama* and *Yamakoshi* versus *Kawaguchi* communities suggest that the action of displacement is already an unnatural move, which disrupts continuation of *ex-ante* livelihoods. Former literatures have so far suggested that preserving livelihoods is important during resettlement stages in the displaced sites. Nevertheless, not much about proximity of temporary site from the original communities during displacement is yet researched, although it seems to have significant impacts on

[78] Total number of households in three communities was 77 before the earthquake and reduced to 57 after resettlement.

[79] The Town had long struggled to retain its status as a separate jurisdiction until April 2010. Their financial condition was stable until the *Chuetsu* earthquake in 2004. The recovery cost that the Town had to bear from the earthquake – for an example, the cost of reconstruction of damaged gas pipelines operated by the Town and the cost of damaged house removal– made them no longer financially sustainable. They therefore had to make a tough decision finally to merge into *Nagaoka* City.

resettlement decisions. One of the possible future lines of research lies here, on the issue of accessibility to resettlement decisions, by observing the relationship between the displacement site to the former site, jobs, as well as neighbors. However, some areas would be required to be temporarily displaced with geographical threats, such as landslides and flooding, or with damaged infrastructure that threatens affected population from surviving. Consequently, identifying and developing the criteria for deciding temporary displacement after disasters, is another important area of study.

I am also interested in learning about resettlement dynamics in urban communities, so that I could make a comparison between rural and urban communities. Although I believe there are similar dynamics found in urban cohesive communities, a difference may exist between different types of communities that cannot be observed in rural communities. Particular concerns would be the impact of planning policies on communities – as the informal decision making processes and emotions identified in the rural communities may not exist in a similar manner in urban communities. In such circumstances, policies and planning processes by the local governments may have an influence different from what has been observed in this research. By understanding both urban and rural resettlement dynamics, I can draw a more consolidated model of resettlement dynamics.

Lastly, another important area of future research is to understand systematic differential impacts of resettlement on particular segments of the population, such as the elderly or women. This research generally suggests that age affects decision making, planning processes, and post-resettlement outcomes. It also briefly suggests some differences that men and women faced in the resettlement dynamics. Systematic understanding of these population groups should be further explored in both macro and micro contexts. For an example, in a macro context, the impact of continued aging in rural areas could be explored in a longer-time frame, to identify whether or not the community faces a slow disaster due to the earlier decisions to return. In a micro context, the impact of decisions made – whether relocating or returning – may create tensions in the households in shorter and longer time periods. By further understanding the impacts of resettlement on population groups by time-frame and in both macro and micro contexts, planners and policy makers can better assess the adverse impacts on population groups. This would be important knowledge to help them to seek better resettlement paths.

Appendix A: Questionnaire Guidelines

Purpose	Question Guidelines/ Information Sought	Govern-ment	Stake-holders	Commt'y members
1. General Information				
● Understanding informant's background and role in post-recovery resettlement ● Understanding 2004 earthquake influence to informants	Name and address of informant	X	X	X
	The way of involvement to post-disaster resettlement (transition of the position and role)	X	X	
	Number of years in the position/ living in the community	X	X	X
	The 2004 earthquake experience:			
	- Property damage (building, land, carp breeding pond, others)		X	X
	- Policies adopted/used to resettle (national, prefectural, others)		X	X
	- Identify residence changed in post-disaster and approximate time – emergency evacuation, temporary housing, permanent housing		X	X
	Brief household structure and kinship: e.g. # of school children, elderly, relatives			X
2. Rational on deciding between relocating and repopulating				
● Identify reasons for deciding relocation or repopulation ● Identify timing of information provided and decisions made	Rationale on supporting program for relocation or repopulation, including the time when decided their position.	X	X	
	Land availabilities/attachment upon making decision	X	X	X
	Expected funding and budget for relocation/ repopulation program upon decision; Particular programs expected to use (national, prefectural, others)	X	X	X
	Level sought on hazard threats to communities	X	X	X
	Main reason for a decision influenced by household structure, including but not limited to: school age children and education, elderly and health, commuting to work, and others.			X
	Influence of kinship to making a resettlement decision			X
	Financial influence to decisions, including but not limited to: level of housing/property damage, expected financial support on resettlement upon making decisions, expected changes in income, and others.			X
	Identify time when following information unveiled: i) result of damage assessment for housing/property and ii) expected financial support and programs.			X
	Level of rehabilitation on public infrastructures and buildings (e.g. sewage, road, and schools) influenced upon decisions. How much of these were or expected to be rehabilitated?	X	X	X
	Other reasons that may affected to a decision	X	X	X
	Identify time when resettlement decision was made	X	X	X

3. Influence of planning process to a decision and action (Implementation)				
● Understanding the speed and timing of planning events related to resettlement ● Understanding degree of democratic participation secured in decision making process ● Understanding the degree of success on pre-earthquake livelihood preservation	On Speed and timing of planning events for resettlement decision and implantation:			
	- Identify dates and key actors taking lead on: 1) evacuation order/advisory enforcement and lifting; 2) resettlement policies and plans developed; 3) resettlement policies funded/ or committed and unveiled public; 4) resettlement lot decided and unveiled public; 5) actual date that started construction; and 6) actual date of resettlement	X	X	X
	- Frequency of commuting between displaced location and new resettlement site before/after decision during stages of emergency evacuation, temporary sheltering, and temporary housing, and how it was managed under evacuation order and advisory.	X	X	X
	On participation: transparency, inclusiveness, and fairness and power-sharing (Laurian et al, 2008)			
	- Frequency of meeting held on resettlement (by: city officials and consultants, community, volunteers, others) before and after resettlement decision. Identify date and content of meeting.	X	X	X
	- Degree of access to information related to resettlement before and after decision (How did information distribute/ public accessibility to information)	X	X	X
	- Inclusion/exclusion of members and their voice in decision making process. Status of members' participation. The way to achieve a consensus?	X	X	X
	- Who decided on the final decision to relocate and repopulate?	X	X	X
	- The reason for a gap between decision and action on resettlement, if any.	X	X	X
	On pre-earthquake livelihood preservation:			
	- Status on community collectivity during the stages of emergency evacuation, temporary sheltering, and temporary housing	X	X	X
	- Other efforts provided to make displaced communities' livelihood close to normality during displacement period? (e.g. gardens)	X	X	X
	- Benefit and hindrance being together or apart from community during displacement period, in regard to livelihood?	X	X	X
4. Current conditions of post-resettled communities in post 5 years of the earthquake				
● Understanding the current conditions of target communities	Socio-economic condition:			
	- Perception on regional and individual economic opportunity changes before and after	X	X	X
	- Changes in number and structure of population	X	X	X
	- Influence of socio-economic condition to individual/communal livelihoods	X	X	X
	Physical rehabilitation:			
	- People's adoption and rejection on: 1) housing	X	X	X

	conditions, 2), site location, and 3) infrastructure/building rehabilitation			
	- Change in operational cost, rental cost, deficits	X	X	X
	Community empowerment: redistribution of power at individual (self empowerment), interpersonal (mutual empowerment), and societal (social empowerment) levels (Pigg, 2002, Kabeer 1999).			
	- Change of personal skill and attitude toward livelihood betterment, including participation to community events and decision making	X	X	X
	- Strengthened network and bonding among groups (community, non-profit, farming organizations) or between individuals. Change in inclusivity and exclusivity of socially vulnerable group/population (elderly, poor, etc). Change in opportunities to participate in decision makings.	X	X	X
	- Change in self-initiatives toward livelihood betterment actions at individual and community levels. Any improvement in ability to decide and take actions on their own (e.g. numbers of communal meetings/events, and establishment of profit/non-profit organization)	X	X	X
	- Improvement on equitable decision making – e.g. change in public participation by gender/vulnerable population	X	X	X
	Level of recovery satisfactions:			
	- Satisfaction on their location/residence. (e.g. How do post-resettled households feel about continuously living at where they are? How do they feel about their decision?)		X	X
	- Perception on recovery on community ties and cohesion. Change in pre- and post-resettlement. Major change to note, if any.		X	X
	- Perception of neighborhood (village) recovery as a whole. Identify elements that residents think is lacking and improved before/after resettlement.		X	X
	- Level of mental and physical recovery from post-earthquake		X	X
	- Change/strengths in reliabilities between government and community members before/after resettlement		X	X
	- Level of preparedness toward future disasters		X	X
	Change in vulnerabilities/ underlying problems of the region			
	- Change in physical threat and risks for future disasters	X	X	X
	- Change in elderly livelihood – understanding improvement or degradation their livelihoods and reasons for that.	X	X	X
	- Perception toward regional/ communal sustainability before and after resettlement; including economic/social/communal factors.	X	X	X

Appendix B: Article published on September 5, 2009, about authors' research

9月5日 (毎週土曜発行) 小千谷新聞 (昭和21.2.20 第3種郵便物許可) 第3325号 (2)

少子化対策の一環

世話焼きさん復活 お世話志隊始動

市民会館にセンター

市は未婚・晩婚化の流れを変えて地域活性化につなげたいとして、結婚支援「おぢやときめきめぐりあい事業」を一日からスタートさせた。

めぐりあいサポートセンターを市民会館内に設置、結婚を希望し同センターに登録した男女のコーディネートを主な職務とする職員を一人常駐、市の事業として進める。結婚を希望する独身男女にセンター登録を勧める"世話役"をボランティアで広く公募したところ、二十二人が集まった。このボランティアを「お世話志隊」と命名し、これから本格的活動に入る。

お世話志隊の二十二人の内十八人が地域、四人が企業から。センターに登録できる対象は「市内に住所があるか、勤務している人」もしくは「将来、市内に住所を置く意志のある人」としている。入会金・登録料は無料。お世話志隊を通さなくとも、直接同センターを訪れての登録も可。

常駐のコーディネーターは産業開発センター（サンプラザ）に委託。緊急経済対策の「ふるさと雇用再生特別基金事業」（三年間）を利用する。

お世話志隊の隊員任命式が一日午後七時から、市民会館で行なわれた。市長は一人ひとりに任命書を手渡した後「少子化対策は地域社会をあげて取り組まなければならない問題。市主催のこの事業はかつてどこにでもいた地域の"世話焼きさん"を復活させ、結婚支援を推進しようというもの。市の活性化につなげたい」と協力を求めた。

夢厳君（千田中）県代表選手に

トキめき国体ゴルフ競技

千田中学校三年生の平澤夢厳君（三仏生）は去る八月七、八の両日、群馬県ローズベイカントリークラブで開催された平成二十一年度全国中学校ゴルフ選手権大会男子個人の部で六位入賞を果たした。

第一日目は首位の松原選手（大阪府）と二打差の単独二位で好調な滑り出しだったが、最終日はパットが不調でスコアを伸ばすことが出来ず順位を落としてしまった。「昨年は二十六位タイで悔しい思いをしたので入賞できて嬉しい」と話している。

また二十日と二十一日の両日、霞ヶ関カントリー倶楽部（埼玉県）で行なわれたジュニアゴルファー最高峰の大会、第十五回日本ジュニアゴルフ選手権競技（日本ゴルフ協会主催）では、二十位タイと健闘（昨年は予選で敗退）。また、六月に中条ゴルフ倶楽部で行なわれた第十一回県ジュニア選抜競技会兼新潟県ゴルフ連盟国体選手選考会で三位入賞、少年男子の国体選手団に選ばれている。

菜の花種蒔き交流会

9日山本山高原

菜の花栽培を広く手がけるNPO法人スローライフ小千谷は、09年度菜の花種蒔く人々大交流会を、九日午前九時十五分から市民の家と山本山高原で開催するが、ボランティアを募集している。作業は午前十時から手蒔き、機械蒔きなど十一時十五分まで。その後、市民の家体育館に移動、全国菜の花プロジェクトの藤井絢子会長が「菜の花プロジェクトと環境について」をテーマに講演する。ボランティアの会費五百円（軽食代）。

新理事長に松井均さん

小千谷織物組合

小千谷織物同業協同組合は、このほどの役員改選で新しい理事長に松井均さん（片貝町）が就任、これまでの樋口隆司さんは退任した。

震災地 東山 山古志 密着調査

米イリノイ大の井内さん

米国イリノイ大学都市・地域計画学部博士課程専攻の井内加奈子さん（＝写真、36）が、中越大地震で甚大な被害を受けた当市東山と山古志の住民が、いかにして再定住もしくは他に移住したかを聴き取り調査した。六月から密着取材する過程で、両地区の人情に触れすっかり仲良しになった人も大勢。明後日の七日に現地を離れて米国に渡り、論文を仕上げて目出度く博士号取得の際は、再度両地区を訪れて論文を公開したいとしている。

井内さんは徳島県出身。父の仕事で小学校から高校まで断続的に米国で過ごし、筑波大学を卒業後渡米して修士課程修了、現在博士課程に進んでいる。以前から心に残っていた中越大地震を自身の研究テーマに選び、昨年八月と十一月に短期で訪れ事前調査。今年六月から長岡市の友人宅に滞在しながら本格的な聴き取り調査に取り掛かった。

▽地震後、東山・山古志に戻った理由、他地に移住した理由▽決断するまでに行なった行政との話し合い・集落の仲間との話し合い▽以前とでは生活がどのように変化したか——などを東山と山古志、戻った人と移住した人のそれぞれが同数となるよう数十人に直接会って調べた。東山と山古志では行政区が異なるが、戻った世帯数は五十二％で同率、深くその要因を探る必要があると感じた。結論はまだ出していないが、行政の対応・スローガン等は異なっても、利用出来る国の支援策は同一であることが無関係でないのでは、と分析している。

両地区に共通していることは、▽短期間に復旧▽住民が震災をプラスに転換▽伝統行事を大切にしている——など。

調査を通して"個人の考え方"と"行政の対応"の両方が大切と痛感。論文を仕上げるにあたり「他地区で万が一があった場合、より良く再定住するための最善策をさぐれた」と抱負、三カ月間を振り返り「涙あり笑いありの素晴らしい出会いが沢山あり、人間関係を築くことが出来た。楽しかった。博士号の論文を持って再び訪れたい」とにっこり。

小千谷市民親善ゴルフ大会

催／小千谷ゴルフ倶楽部 後援／小千谷カントリークラブ 小千谷新聞社

市長杯（優勝）は広川さんに

ラッキー賞は細川さんがゲット

"市民ゴルファーの祭典"として盛り上がりを見せている小千谷市長杯争奪・第二十三回小千谷市民親善ゴルフ大会が八月三十日、小千谷カントリークラブに二百三名が参加、昼のゴルフと夜の懇親パーティーなどを楽しんだ。

初秋のゴルフコースはプレーには絶好のコンディション、トップスタートは午前七時、この日のコースは市民ゴルフ貸し切り状態で、早朝から夕方まで好プレー珍プレーが続出してあちこちで歓声があがっていた。

競技終了後の午後六時三十分から、会場をサンプラザ大ホールに移し、谷井市長と佐藤勲体育協会長も来賓として出席、表彰式と懇親パーティーが賑やかに行なわれた。

今回から主催は、これまでの小千谷新聞社から小千谷ゴルフ倶楽部（小見山紘喜会長）に移行、運営にあたった。また市内の有力企業がスポンサーとして協力して大会の強い味方となり、盛り沢山の賞品に賞にはまった人はニコニコ顔。また最後に五万円の旅行券が当たるラッキー抽選会を行ない、見事細川宣臣さんが射止め、思わぬ幸運にニッコニコ。

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千谷市民親善コ

▶優勝杯にニッコリ 広川利夫さん

最高齢 平田信司さん 86才 ▼

▲幸運をゲット／細川さん

◀パーティー会場

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