COMMUNITY VULNERABILITY AND CAPACITY IN
POST-DISASTER RECOVERY:
THE CASES OF MANO AND MIKURA NEIGHBOURHOODS
IN THE WAKE OF THE 1995 KOBE EARTHQUAKE

by

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Abstract

This is a study of how two small neighbourhoods, Mano and Mikura, recovered from the 1995 Kobe (Japan) earthquake, with a particular focus on the relationship between community vulnerability and capacity. Few studies have examined these interactions, even though vulnerability reduction is recognized to be a vital component of community recovery. Drawing from literature on disaster recovery, community development, vulnerability analysis, community capacity building and the Kobe earthquake, a community vulnerability and capacity model is elaborated from Blaikie et al.'s Pressure and Release Model (1994) to analyze the interactions. The Mano and Mikura cases are analyzed by applying this model and relating outcomes to the community's improved safety and quality of community lives. Based on the experience of Mano, appropriate long-term community development practices as well as community capacity building efforts in the past can contribute to the reduction of overall community vulnerability in the post-disaster period, while it is recovering. On the other hand, the Mikura case suggests that even though the community experiences high physical and social vulnerability in the pre-disaster period, if the community is able to foster certain conditions, including active CBOs, adequate availability and accessibility to resources, and a collaborative working relationship with governments, the community can make progress on recovery. Although both Mano and Mikura communities achieved vulnerability reduction as well as capacity building, the long-term sustainability of the two communities remains uncertain, as issues and challenges, such as residual and newly emerging physical vulnerability, negative or slow population growth and aging, remained to create vulnerability to future disasters. The case studies reveal the interactions of community vulnerability and capacity to be highly complex and contingent on many contextual considerations.

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Notes on Style

Japanese names most commonly take the form of family names first, followed by given names. In this thesis, for Japanese names, the family name comes first and is followed by the given name without a comma (,) excluding the thesis references. Italics are used for Japanese words in general, with the exception of names of places and organizations, such as Kobe, Nagata, Hyogo, or Hanshin Fukkou Shien NPO. Many Japanese names of organizations, groups, and companies are difficult to translate as they are "proper nouns" and therefore they are not always translated into English. Those Japanese terms and words are often accompanied by an English translation which I place in parentheses right after when the Japanese words are first introduced. English translations are provided for references written in Japanese.

Glossary of Frequently Used Japanese Terms

bousai	disaster prevention
bousai machizukuri	disaster resistant community planning
burakumin	outcasts
chonaikai	neighbourhood association
fukkou	reconstruction
Fukkou tochi kukaku seiri jigyo	The Disaster Restoration Land Readjustment Project
fukushi	welfare
Hanshin-Awaji Daishinsai	The Great Hanshin-Awaji Earthquake
jichikai	neighbourhood association
kodokushi	lonely death
machi	town
machizukuri	community planning
Machizukuri jorei	The Community Building Ordinance
Machizukuri kyogikai	Town-Building Council
nagaya	small, wooden, semi-detached house
	(Nagaya is a type of apartment building with a number of residential units connected under a single ridge-pole. It can be translated to long house or, row house that is wooden-framed house, often poorly maintained, and offered to low-income families.)
saigai	disaster
shinsai	earthquake disaster

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Dedication

For people who suffered from the Kobe earthquake.

And for my son, Kensuke and my daughter, Chihiro.

CHAPTER 1 Learning from the Kobe Earthquake

1.1. Introduction

1.1.1. Disasters and Society

The Great Hanshin-Awaji Earthquake on 17 January 1995 (commonly known as the Kobe earthquake) was a pivotal event in the field of disaster studies both because of the large scale destruction it caused in one of the most urbanized areas in Japan and the complexity of the long-term reconstruction tasks that followed it. The earthquake killed 6,434 people, and as many as 320,000 people were left homeless. More than 245,000 houses were either completely or partly destroyed (Fire and Disaster Management Agency 2007). Material damage was estimated at around 10 trillion Yen[1] (Miyamoto 1996c: 15). The Kobe earthquake was one of the most devastating natural disasters in Japan's modern history. In particular, this disaster revealed the fragility of many urban systems and the built-environment in Kobe created in the pre-disaster period.

Disasters are not only natural but also social events. "Without people, there can be no disaster" (Susman et al. 1983: 264). When vulnerable populations are at risk, hazardous events often result in severe destruction to human society (O'Keefe et al. 1976; Blaikie et al. 1994). It is difficult if not impossible to predict every occurrence of natural disasters; however, it is possible to minimize existing risk and vulnerability of communities before a natural hazard strikes to reduce the extent of the damage, and more importantly to plan for recovery processes in advance so that the affected communities can achieve recovery more

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[1] 10 trillion Yen = US$ 84.3 billion (US$1.00 = 118.62 Yen as of 07/30/2007)

effectively. Neglecting to make such efforts to manage and plan for disasters can cause

disaster events to be much worse than they would otherwise be. It is society's responsibility

to prevent or mitigate potential disasters by minimizing risks and vulnerability.

1.1.2. Significance for Japan and Planning

The large scale and magnitude of the Kobe earthquake resulted in severe impacts, and

Japanese society coped with the situation in both positive and negative ways (Shigemori

1996). Although Japan is affected by various types of natural hazards almost every year, it

was the first time in the post-W.W.II period that one of Japan's highly developed and

modernized cities was severely affected by a large scale earthquake. Kobe city, which the

quake hit directly, became one of the most industrialized and urbanized regions in Japan

during the post-war reconstruction process. Over the years, the region had been highly

developed as an urban metropolitan center. Yet at the same time, certain negative factors,

such as an increasingly aging population, poor housing development, out-dated disaster

preparedness policies, and poor awareness of risk management had contributed to generating

urban physical and social vulnerability to natural disasters, especially, in the inner-city areas

of Kobe (Shigemori 1996; Nakabayashi 2004). The earthquake destroyed the industrial

infrastructure and urban facilities, and revealed the fragility of the urban living environment

of the dwellers. Although the emergency relief process involved a wide range of activities,

such as managing volunteers, communications between intra- and inter-government agencies,

and infrastructure recovery (including debris management, re-zoning and community

planning), local governments and communities were not adequately equipped to manage

these processes, and not well prepared to deal with the massive destruction caused by an earthquake (Tierney and Goltz 1997).

The Kobe earthquake gave a series of lessons to the communities of Japan on how vulnerable Japanese society was to natural disasters (Wisner et al. 2004). Fragile urban life styles were completely disrupted when the lifelines (water, electricity, gas, phone, and transportation) were suddenly unavailable. Urban communities depended heavily on such urban infrastructure and without them communities could not continue their daily routines. Before the earthquake the urban systems (i.e. rail roads, highways, water, gas, phone, garbage collection, and sewage management) were well managed and maintained by public and private facilities and services, but once major infrastructure collapsed, normal urban life became impossible (Miyamoto 1996b). These communities stopped functioning once they lost the connection to these lifelines.

Some rural communities in Awaji Island affected by the earthquake had different experiences from communities in the urban area (Miyamoto 1996a; Nishibori 1996). There were wells in the rural area that made water available for drinking as well as farming when the public water supply was stopped. The farmers had some stocks of food from what they grew in their fields; therefore, they were able to live for a while without immediate emergency relief. Some of them had large tools and machinery for farming that were used to open doors, cut poles, and dig debris to rescue victims who were trapped inside of destroyed houses (Miyamoto 1996a; Nishibori 1996). This does not suggest that rural communities can respond to disasters better, but it can suggest that certain conditions of communities (e.g. availability of resources, accessibility to resources, and skills and knowledge as to how to use these resources) can make a difference for communities in emergency situations. If there

were certain conditions that contributed to the outcomes of disaster recovery, it is important to investigate what they were and why and how they influenced positively or negatively the recovery process of the community.

This earthquake also brought to light the importance of local neighbourhoods in post-quake recovery. A series of reports emerged on how members of the affected neighbourhoods helped each other to survive through the most difficult times (Inui 1998; Konno 2001; Evans 2001) Neighbourhood associations (NHAs) as well as volunteers from outside became critical actors for some communities during the recovery period. NHAs have a long tradition in Japan, while emergency relief volunteers are a relatively recent phenomenon. Of particular importance, some studies argued that a community's long-term development efforts including NHAs and volunteer contributions, land use planning, housing improvement, and community services for senior residents, could influence effective recovery, such as in the case of the Mano community in Kobe (Inui 1998). It is vital therefore to understand what roles NHAs and volunteers played in the disaster recovery process and what their limits were in order to improve existing community disaster planning practices in Japan.

Moreover, although the Japanese government was severely criticised at first, their reconstruction efforts eventually resulted in impressive accomplishments within a limited amount of time (e.g. most lifelines were back in service within three months of the event) (Hyogo Prefecture 2006a). The recent tragedies of the Indian Ocean Tsunami in December 2004, Hurricane Katrina in August 2005, and the Kashmir earthquake in October 2005 have all illustrated how difficult it is to manage a series of reconstruction tasks effectively, and by comparison, the Japanese government contributed greatly to achieving a complex recovery

process and reaching impressive recovery outcomes in a relatively short time period. While focusing on the recovery activities of the affected communities in Kobe, it is also important to examine local government disaster management practices that were relevant to communities in order to understand the government approaches to disasters which influenced the long-term community reconstruction following this disaster.

Local communities in Kobe were not prepared for the earthquake because the Hanshin region had historically suffered from water-related disasters, such as typhoons and flooding, and consequently earthquakes were not considered to be a threat in the past. Although disaster prevention activities have been carried out in most communities in Japan to some extent, because Japan has been affected by various kinds of natural disasters over the years (Arakawa 1964), most communities in this region were not able to effectively respond to the massive destructive force caused by this earthquake.

Even though the earthquake itself was unexpectedly catastrophic and its severity was difficult to predict, it is essential to learn from this experience how the long-term recovery process after the earthquake could have been more effective had there been different or greater efforts to make disaster mitigation and recovery plans in advance. It seems that this is an opportunity for Japanese planning to address how to allocate existing resources in a more appropriate manner, how to deal with existing community problems, and how to develop disaster planning so that communities can reduce their existing vulnerability, be prepared for, and plan in advance to respond to and recover effectively from such events.

1.2. Theories Informing the Study

1.2.1. Theoretical Background

This study draws on theories and literature from disaster recovery, vulnerability analysis, community development, and capacity building in order to understand how certain communities recovered from the Kobe earthquake. First, an investigation of conceptual and empirical literature from the field of disaster recovery is made to examine how communities recover from disasters. It is important to review the existing literature to identify how communities have dealt with post-disaster reconstruction efforts and what constitutes critical recovery activities, and to ascertain what theories were developed from these studies. Although the study of disasters is a growing field, the study of the post-disaster activities of affected communities, in particular, needs further attention to develop a systematic understanding that will enable the improvement of community recovery from disasters (Mileti 1999; National Research Council 2006). The literature suggests that returning to normalcy after a disaster is not enough (e.g. physical rebuilding of things as they were before), as it often reproduces vulnerable conditions in a community similar to those that existed before the disaster. Therefore, the objective of recovery efforts should be to create a safer and better community—making improvements in areas that were community problems and issues in the pre-disaster period (Haas et al. 1977; Wisner et al. 2004). I argue that in order to improve existing recovery practices, more attention must be given to vulnerability reduction as part of the achievement of successful recovery.

According to Blaikie et al. vulnerability is defined as:

the characteristics of a person or group in terms of their capacity to
anticipate, cope with, resist, and recover from the impact of a natural

hazard. It involves a combination of factors that determine the degree to which someone's life and livelihood is put at risk by a discrete and identifiable event in nature or in society (Blaikie et al. 1994: 9).

Individual vulnerability is, therefore, often characterised by a person's age, gender, physical and mental ability, race and ethnicity, class, occupation, religious preference, minority status, etc. On the other hand, community vulnerability involves not only the conditions of individual community members' vulnerability mentioned above, but also the interactions among various past practices of social, political, economic and community development (Sen 1981; Hewitt 1983; Blaikie et al. 1994; Varley 1994; Fordham 2006). Therefore, to identify community vulnerability, this thesis examines characteristics of community's existing neighbourhood planning, disaster planning, leadership, residents' participation, networking, and the relationships with the local government. Although community vulnerability reduction requires collective efforts, there have not been many studies to understand the conditions of community vulnerability and how this vulnerability can be reduced by collective approaches of the community.

Vulnerability analysis also uses the term "capacity" to mean a coping ability of the vulnerable groups used to reduce their vulnerability (Blaikie et al. 1994; Moser 1998; Davis 2004), though the literature does not often discuss operational levels of vulnerability reduction by applying the idea of "capacity." The roles of community and its capacity to assist affected individuals have long been discussed (Moore 1958; Korten 1980; Anderson and Woodrow 1990; Moser 1996; Wallrich 1996; Bolin and Stanford 1998); however, the findings from these discussions were not well integrated with disaster recovery studies to reduce community vulnerability and build community capacity. Because there have not been many attempts to fully identify the interactions between vulnerability and capacity, there

needs to be an innovative approach to help communities to understand how community

capacity influences vulnerability, and to help them to integrate vulnerability reduction with

disaster recovery planning. Drawing from community development literature, capacity is

considered as: the interaction of assets, resources, and knowledge existing within a given

community that helps in solving collective problems and improving or maintaining the well-

being of a given community (Chaskin et al. 2001).

Community development is, according to the literature, a planned effort for solving

common problems (e.g. issues of health, education, welfare, and the environment) and also

an attempt to build community capacity (e.g. increasing community physical, human, and

financial resources, community networks, and community plans) (Green and Haines 2002).

Community planning can help organize community's activities in terms of both the physical

and social aspects of community life as well as establish a collaborative relationship with

governments, business, community-based organizations (CBOs), and other interest groups. If

a community can increase its capacity through community development practices, such as

development of a community economic plan, resolving community social issues, and

building networks among CBOs, this can contribute to enhancing its ability to undertake

effective community recovery. It is therefore important to consider community development

practice as an integral part of disaster planning and vice versa, yet there are not many

successful cases of this integration offered for communities to learn from and to apply.

Japanese community development practice, namely *Machizukuri,* is introduced in this

thesis to facilitate the discussion of Japanese community development in relation to disaster

recovery in Japan. *Machizukuri* is the Japanese term for community-based planning

(Miyanishi 1986; Ishida 1987; Evans 2001; Sorensen 2002; Hein 2003). Although Japanese

communities have long been organized by Neighbourhood Associations (NHAs), the roles of these organizations in community planning (*Machizukuri*) are not clearly defined other than that they play an important role in increasing communications among residents and between the local government and communities. A number of other types of community-based organizations besides NHAs exist in Japanese communities, but they are simply identified as socializing/ networking/ interest-led groups that can help disseminate information and prevent crimes (Tanaka 1990; Nakamura 1990). They are not often considered to take active roles as advocates or to empower the residents to initiate community problem solving processes (Pekkanen 2003). This thesis examines roles of these community-based organizations (CBOs) in the emergency situations suggesting that their contributions could make differences in the outcomes of recovery if other conditions are met.

Historically, Japanese urban planning has been implemented by the central government which has the power to control local governments and communities. "Widespread community building initiatives (*Machizukuri*) and an active citizenry are relatively recent phenomena, dating back only to the 1980s" (Hein 2003: 240). Japanese community development practices have been created and developed in response to various major social issues, such as war-reconstruction activities, anti-pollution movements, and natural disasters that forced communities to deal with their own problems (Kurasawa 1990). Although the idea of *Machizukuri* is commonly accepted by the government today, communities are not necessarily given authority to make their own decisions. *Machizukuri* practices vary depending on a number of factors, such as the level of participation from the residents as well as the relationship between local government and communities. Some communities are very active in their involvement in community development with little

influence from the local government, while others totally depend on the local government to carry out community activities. Considering the fact that Japanese political systems have been historically top-down, and the status of civil society is relatively weak, such circumstances strongly influence the future success of *Machizukuri* practices—community capacity building (Sorensen 2002; Edgington 2003). This thesis also investigates the pre- and post-disaster periods of communities in order to understand effective community development that could create a basis for community capacity building (*Machizukuri*).

Disaster planning has also been led by the central government, and local governments have had limited power to make decisions and take actions. After the Kobe earthquake of 1995, communities have been encouraged to take more active roles in disaster planning and the local governments are expected to support them (Wakayama 2005; Ministry of Land, Infrastructure Transportation 2006). Yet, the relationships between local government and communities, as well as the roles of community-based organizations at the policy level, which can be one of the key factors in successful disaster planning, are still not clearly defined, and it is essential to address these issues.

1.2.2. Working Definitions of Community Vulnerability and Community Capacity Building

Drawing from the existing theories and empirical data addressed above, conceptual elements are organized in order to assist in this study—to help develop research questions and appropriate research methods. The unit of analysis in this thesis is small scale local community. *Community vulnerability* and *community capacity* are used as key terms in this study in order to explain and identify the complex conditions of community recovery from

the Kobe earthquake. Community vulnerability in this thesis is defined as the characteristics

and conditions of a community that make it susceptible or prone to natural hazards. These

characteristics and conditions include social disintegration, lack of community planning, lack

of resources or access to resources, lack of knowledge and skills as well as inadequacies in

the built environment (infrastructure and buildings). Community capacity in this thesis is

defined as a community's collective ability to solve common problems and enhance

community safety and quality of life. It includes democratic decision-making approaches,

collective action approaches, the creation and improvement of community planning practices

and implementation, the existence of CBOs assisting with specific community needs, and

efforts to achieve a collaborative relationship with local governments and businesses.

1.2.3. Understanding Disasters in the Context of Community Development

Disasters reveal existing problems of social and physical vulnerability and highlight

the effects of existing uneven distribution of and unfair accessibility to resources in the

affected communities (Hewitt 1983). There has been little study of what factors and actors

are important for carrying out community recovery after disasters that achieves both effective

recovery and vulnerability reduction. Vulnerability analysis can help explain who the groups

at special risk are and why they are susceptible to natural disasters (Blaikie et al. 1994).

Unfortunately, this theory does not offer any practical tools for actually reducing

vulnerability (Wisner et al. 2004). Through exploring the community recovery activities in

the Kobe earthquake, this study aims to understand how in the pre- and post- earthquake

periods the affected communities' vulnerability was reduced or increased and if their

capacity was an influential factor in minimizing vulnerability. How capacity and

vulnerability interacted with each other is explored in order to identify certain community conditions that can reduce vulnerability and enhance capacity.

If a community is less resourceful, less socially integrated, has poor community development practices and relationships with different levels of government, and is physically and socially vulnerable, what should it do to achieve recovery? Can vulnerable communities achieve effective recovery following a disaster? If the answer is "yes," then what are the factors and elements that help them accomplish recovery? If the answer is "no," then what are the reasons that make them unable to recover and force them to remain vulnerable? The existing disaster theories and empirical data only partially answer these questions, and there are few studies that fill in the gaps in knowledge of how a community recovers and how vulnerability reduction can be carried out (Morrow and Peacock 1997; Bolin and Stanford 1998). Such questions are important to address, yet they remain unanswered. Studies carefully observing communities in the post-disaster period as well as identifying effective recovery factors at the community level are needed in order to increase understanding of community planning for disasters and vulnerability reduction processes. In the next section, specific research questions are raised in order to increase understanding of the issues identified above.

1.3. Research Questions

This research addresses the following overarching question: <u>How do community vulnerability and capacity interact in influencing post-disaster recovery at the small scale local level?</u>

The interaction between community vulnerability, community capacity and community recovery can be addressed by examining a series of more specific sub-questions:

1. Within a particular community, what were the conditions of community vulnerability and capacity before and after the disaster? (How can vulnerability and capacity be measured? What are appropriate indicators of vulnerability and capacity? How were the conditions of vulnerability and capacity changed or improved?)

2. If vulnerability was reduced through the recovery process, what were the influential factors that resulted in this reduction during recovery period? (Who were the key actors and what were the key activities influencing the reduction of vulnerability? Why were the factors influential in reducing vulnerability through the recovery activities?)

3. If capacity was enhanced, what were the influential factors that resulted in this enhancement through the recovery activities? (Who were the key actors and what were the key activities influencing the enhancement of capacity? Why were the factors influential in enhancing capacity?)

4. If community development was well implemented in a community before the disaster, did the community have a better chance of an effective recovery? (Can good community development practices contribute to long term reconstruction processes? How and why did a long-standing history of community development contribute to

achieving recovery? How did community development influence the outcomes of disaster recovery? How did a community with poor community development practices achieve recovery?)

1.4. Qualitative Research Approach

This study investigates how communities recovered from the Kobe earthquake by examining the interactions between community vulnerability and community capacity in two neighbourhood case studies. This large scale urban disaster revealed the high level of vulnerability of the inner-city of Kobe and the complexity of recovery processes. It was particularly evident that the disaster impacts were distributed unevenly at the community level and that the most vulnerable areas in Kobe suffered the most. As there are many inner-city areas in Japan at high risk of disasters, it is critical to understand how communities in the inner-city areas in Kobe dealt with the Kobe earthquake disaster with their very limited resources and highly vulnerable conditions. Without a detailed examination of disaster affected communities, it is difficult to understand community specific conditions of vulnerability and capacity. I chose two communities, Mano and Mikura neighbourhoods, located in Nagata ward, Kobe city, where the earthquake impacts were most severe, in order to observe changes and improvements in the community conditions that were made during the reconstruction phase.

In order to address the research questions outlined above, I applied an approach (detailed in Chapter 5) that allows an exploration of the conditions of differently experienced community vulnerability and the communities' activities for reducing it. Natural disasters are very complex and multifaceted events that require not only quantitative methods, but also

qualitative exploratory approaches that enable researchers to collect detailed and in-depth data to grasp the specific disaster circumstances (Stallings 1997). Qualitative methods can help grasp meanings of disasters in society (Tierney et al. 2001), identify unique impacts at the small scale local level, and explicate relationships among certain factors in a specific local district/ neighbourhood context (Phillips 1997; Stallings 1997). Recent research in disaster studies, in particular those studies aimed at understanding the social consequences and meanings after disasters, is increasingly interested in exploring approaches to identify complex conditions of risk and vulnerability and strategies to reduce them (Enarson and Morrow 1998; Fordham 1999; Fothergill 1999; Bankoff 2003). To understand community recovery in relation to community vulnerability and community capacity, I chose qualitative case study methods. These qualitative research methods are effective for the achievement of the goals of this study because they can help identify the complex relationship between vulnerability and capacity. The benefit of the case study approach is that it allows for detailed examination of social phenomena. The case study method is also particularly appropriate for exploratory studies or the hypothetical developmental stage of research (Neuman 2000).

I selected the Mano and Mikura communities which experienced the Kobe earthquake quite differently, although both suffered from high physical and social vulnerability prior to the earthquake in 1995. Both communities were characterized by population decline, aging population, fragile old wooden housing, high building density, narrow streets and mixed residential and industrial land uses located near to each other. Mano (detailed in Chapter 6) is a community with relatively high social integration and a long-term good relationship with the City of Kobe government. It is famous as an example of Japanese "*Machizukuri*," and the

stories of its remarkable reconstruction efforts after the Kobe earthquake are widely known (Hirohara 1996; Inui 1998; Evens 2001; Shiraishi et al. 2002). The second case, the Mikura community (detailed in Chapter 7) is a small poor neighbourhood with relatively ineffective community development practices prior to the quake and which had fewer resources (e.g. CBOs, and skills and knowledge for community planning and implementation). However, with the rise of volunteerism, a community based organization Machi-Communication (MC), was created specifically to assist Mikura communiy with re-building and reconstruction in the aftermath of the earthquake (Suga 2002).

1.5. Qualitative Case Studies for this Study—Interviews and Field Work

As mentioned above, two communities, Mano and Mikura, were selected for the case studies. I focused on fieldwork to gain a detailed understanding of the conditions of the Mikura community. It was also necessary to obtain data through interviews and field observation due to the limited availability of literature on this community. Unlike Mikura, the Mano community has been studied widely; I depended primarily on existing literature to obtain data for Mano (Mouri 1980 and 1989; Makisato 1981; Miyanishi 1995; Hirohara 1996; Inui 1998; Evans 2001; Konno 2001; Shiraishi et al. 2002), though I was able to interview a Mano community planner, Mr. Miyanishi Yuji fairly extensively. In total, 22 individuals participated in interviews as part of my studies. They were staff members of Machi-Communication (MC), volunteers with MC, planners and academics advising MC, a community planning consultant, residents of Mikura, local city officers in the planning sections, a Hyogo Prefecture government officer, and Mr. Miyanishi. These interviews were conducted between May and October 2003 in Kobe city. During this period, I visited Mikura

almost every day for field observation, and participated in a variety of MC's community activities, such as lunch services and senior resident's gatherings. Through participation in these meeting, I made myself familiar to the Mikura community and residents (details of the methods are discussed in Chapter 5).

1.6. Organization of the Thesis

Building on this introduction, the following chapters are structured to address the research questions. Chapter 2 reviews literature relating to disaster management, community recovery, vulnerability analysis, and community development with a view to understanding recovery planning activities as collective efforts to achieve successful recovery. Vulnerability reduction is identified as one of the critical factors in implementing disaster recovery activities. The important contribution of community capacity building to the achievement of a safer and better community after a disaster is also addressed in developing the research framework. Chapter 3 focuses on Japanese planning approaches, including *Machizukuri* (the Japanese version of community planning), the historical development of neighbourhood associations, urban planning, and disaster planning in Japan in order to lay out the background of the study. The impacts of and reconstruction efforts following the Kobe earthquake are introduced and discussed in Chapter 4 in order to provide the specific context of the study.

Chapter 5 develops a conceptual framework and methodological approach. It draws together the conceptual elements of the study that are discussed in the previous chapters to construct the research framework and questions. Vulnerability and community capacity are identified as key concepts for understanding communities, their development practices and

recovery experiences. The factors and indicators of community vulnerability, capacity, community development efforts and community recovery are summarized and listed in tables. The research questions are re-framed and refined in preparation for the analysis of the data from the two case studies. The chapter also indicates how field work was carried out, data collected and analyzed, and ethical issues addressed.

Chapters 6 and 7 introduce the two case studies. Chapter 6 focuses on the Mano community. It outlines the historical development of Mano community, and the reconstruction efforts after the Kobe earthquake. It also examines Mano community vulnerability and capacity before, during and after the disaster through the application of the research framework developed in the previous chapter. Chapter 7 focuses on the Mikura community. It covers the historical development of Mikura community and the reconstruction efforts after the Kobe earthquake. Mikura community vulnerability and capacity before, during and after the disaster are examined and some comparisons are made while applying the research framework.

Chapter 8 integrates the case study analyses to summarize the response to the research questions. The research framework facilitates the identification of community vulnerability and capacity and the ways they interact with each other before and after the disaster. The last chapter, Chapter 9, provides a summary of the findings to draw conclusions and implications for relevant literatures. This chapter also discusses the limitations of the study as well as the implications of the study with respect to policy development and future research possibilities.

1.7. Conclusion

This chapter introduced an overview of the thesis and underscored how and why the Kobe earthquake reconstruction efforts carried out by the two communities, Mano and Mikura, in the inner-city area of Kobe are the main focus of the study. To understand how communities recover from disasters, community vulnerability and capacity are chosen as key concepts to explore community recovery processes, as well as community development activities in the pre-disaster period. The study is undertaken in the belief that certain community conditions that could improve the existing characteristics of vulnerability and certain community activities that could increase levels of community capacity might be identified, and that they could contribute to the improvement of future disaster planning.

CHAPTER 2 Understanding Community Recovery and Community Development

2.1. Introduction

The purpose of this chapter is to explore the existing literature dealing with disaster recovery, vulnerability analysis, and community development in order to understand the theoretical development of these fields and discuss current theories and some gaps between theories and practices. Also, it examines the nature of current approaches to disaster recovery, and their contributions to the achievement of effective recovery. The chapter highlights gaps in existing recovery theories and uses vulnerability and analysis of it to further understand community recovery from disasters. It then proceeds to show how theory informs the analysis of the two case communities in Kobe city after the 1995 earthquake.

The vulnerability theories are introduced in this chapter in order to define the terms 'vulnerability' as well as the 'capacity' of communities. The chapter not only defines the two concepts but looks at their interaction—how capacity acts to help communities cope with vulnerability. In the chapter, I argue that in order to incorporate the concept of capacity into existing vulnerability analysis it is necessary to understand the mechanism of community capacity building, and that further elaboration of this term is required in the field of community development studies. While introducing and examining theories of community development, I discuss the roles of community organizing, capacity building, and community-based organizations (CBOs) that are culturally relevant to Japan and argue that these are important factors that must be considered in order to improve existing disaster recovery and vulnerability analysis.

2.2. Disaster Management and Community Recovery

2.2.1. Disaster Management—Four Phases

Carr (1932) was the first to focus on different phases of activities involved in the aftermath of disaster events. He attempted to classify a disaster event by time sequences in order to understand the series of changes and experiences (disruption, disorganization, confusion, reorganization, and readjustment) caused by a disaster. Carr argued that "the sequence-pattern concept tells us that things happen in a cycle of linked events" (ibid: 217). Later, a number of disaster researchers applied different codifications (i.e. prevention, preparedness, warning, emergency, relief, response, recovery, reconstruction, adjustment, mitigation) in studying disasters (Barton 1969; Dynes 1970; Mileti et al. 1975). The U.S. National Governor's Association (1979) defined four phases of disaster activity as *mitigation, preparedness, response,* and *recovery* in their report in 1979, which became influential in designing approaches to disaster management (Neal 1997). The four phase concept has been widely acknowledged and applied to disaster activities. Although commonly accepted, the four phases to describe and identify disaster management activities can be inherently problematic as this approach may encourage standardizing disaster events. It also gives the impression that disaster activities can be predictable and ordered as Haas et al. (1977) claimed. In reality, each disaster phase overlaps with the others and each phase can only be understood in the context of the others (Godschalk et al. 1999; Neal 1997).

Despite its weaknesses, the model is useful, and it is helpful to have a clearer understanding of the constituent phases. The four phases are defined by Godschalk et al. (1999) as follows: *preparedness* includes short-term preparation activities, such as evacuation and warning; *response* includes short-term emergency aid and assistance, such as

search and rescue, debris clearance; *recovery* includes post-disaster activities, such as

rebuilding of damaged structures and restoration of existing urban operations; and *mitigation*

includes "any action taken to reduce or eliminate the long-term risk to human life and

property from natural hazards" (Godschalk et al. 1999: 5-11).

2.2.2. Disaster Recovery—Gaps between Theories and Practices

Many researchers claim that the recovery phase has been least understood and least

investigated compared with other phases of disaster (mitigation, preparedness, and response)

(Haas et al. 1977; Rubin et al. 1985; Quarantelli 1989; Berke et al. 1993; Mileti 1999;

Tierney et al. 2001; Chang 2005; Olshansky 2005). Even terms that disaster researchers have

used for the actions taken in the aftermath of a disaster such as reconstruction, restoration,

rehabilitation, rebuilding, restitution, and recovery are often not used with consistency

(Quarantelli 1999). This lack of consistency perhaps reflects the growing pains of a sub-field

of study within the larger and well-established body of disaster studies.

Disaster recovery studies to date have mostly focussed on individuals and households

in order to understand human adaptation to disaster—how disaster victims respond to the

extreme situation, how they change their behaviours afterwards, and how they deal with

stress (Dynes 1970; Quarantelli 1994; Hilhorst 2003). Only a few studies examine how

victims have attempted to restore their communities in the long term (e.g. 10 years after the

disaster). Many other scholars have approached disaster recovery through specific issues,

such as issues of economic and business recovery (Dacy and Kunreuther 1969; West and

Lenze 1994; Tierney 1995; Chang 2001), disaster policies and management (Cuny 1983;

Rubin 1991; Berke and Beatley 1997; Topping 1998a), housing and population (Quarantelli

1982; Bolin 1994; Comerio 1998, Hirayama 2000) and individual experiences (Bolin and

Bolton 1983; Oliver-Smith 1991; Paton et al. 2003).

Historically, community recovery from natural disasters has not been the main focus

of disaster management. First of all, this is because governments often focus on dealing with

recovery of buildings, infrastructure and other wide-area urban facilities, and rehabilitation of

individual homes and property damage. Rebuilding local communities in terms of social

networks, community integration and services, population recovery, restoring job markets

and local business recovery has often not been considered part of the scope of government

recovery efforts. Second, recovery has often been seen as an individual responsibility.

Consequently, communities where individual victims belong are often not a high priority on

reconstruction project lists. Indeed, for some scholars in the past, long-term impacts from

disasters were not considered to pose a significant problem to individuals or communities in

the first place; disaster recovery tended to be considered as a straightforward activity

focussed on rebuilding infrastructure, and not requiring the complex processes necessary to

bring everything back to normal (Wright et al. 1979). Such misunderstanding of the nature of

the disaster recovery process has concealed many problems faced by disaster survivors in the

long term. Third, the dominant views in disaster management consider individuals and

communities as helpless victims because their daily routine was disrupted by the disaster.

These views hold that once everything is back to normal as the infrastructure, urban lifelines,

and housing are restored, individuals as well as communities will be able to return to

normalcy as a matter of course. Taken together these views have undermined the fact that

disaster victims are often able to make sensible decisions with limited resources and in

extremely stressful situations. Although disaster affected individuals and communities played

critical roles in disaster recovery processes there has been little study of it (Fritz 1961; Mileti et al. 1975; Siegel, Bourque, and Shoaf 1999). In this thesis I argue that these are significant gaps in disaster recovery approaches and that the net result is that community recovery remains underdeveloped in disaster management practices.

Simile (1995) studied roles of collective actions through organized citizen groups in two communities (one community affected by Hurricane Hugo and the other community affected by the Loma Prieta Earthquake). She concluded that the pre-disaster period collective behaviours could be one of the critical indicators to predict post-disaster period collective behaviours (ibid). In other words, if a community is better equipped with CBOs which are actively involved in community development in the pre-disaster period, there is a better chance for the community to maintain the high level of the participation in community recovery activities in the post-disaster period (ibid). Buckland and Rahman (1999) studied patterns and levels of community development by examining the relationship between disaster preparedness and response in three communities affected by the 1997 Red River Flood in Manitoba. Buckland and Rahman suggested that communities with higher levels of physical, human, and social capital were better equipped for disaster preparedness as well as recovery (ibid). These studies support the ideas that better community development practices in the pre-disaster period that can potentially result in positive outcomes in disaster recovery.

Despite the fact that many disaster scholars have already pointed out the great needs to identify the important roles and contributions of local communities in recovery in times of disaster, it seems that only a handful of studies have been focused on community recovery issues to meet such needs (Demerath and Wallace 1957; Moore 1958; Forrest 1972; Haas et al. 1977; Rubin et al. 1985; Berke et al. 1993; Dynes and Tierney 1994; Simile 1995; Bolin

and Stanford 1998; Buckland and Rahman 1999; Mileti 1999). Slowly but surely recognizing

such shortcomings of disaster research in the past, disaster researchers have increasingly

come to view the disaster recovery phase as an important opportunity for communities to

rebuild, re-develop and recover from their losses (Schwab et al. 1998). Regardless, more

studies are needed to explore factors that could contribute to encouragement of communities'

positive, productive, dynamic and multilayered activities in the recovery phase (e.g. the use

of CBOs, the existence of local leaders, high levels of community vitality, and good

relationships with other local governments and businesses). Furthermore, in order to improve

existing policies and planning in communities, it is important to consider such practical

applications for short and long-term disaster planning. While making revisions to existing

disaster policies, governments and communities need to create more detailed community

reconstruction plans that are tailored to the specific needs and interests of the community.

The next section extends the discussion of existing disaster recovery literature in order to

identify, in detail, gaps between existing theories and practice.

2.2.3. Theorizing and Conceptualizing Community Recovery

The first major work on long-term community recovery was undertaken by J. Haas,

Kates, and Bowden in 1977 (Rubin et al. 1985; Berke et al. 1993; Bolin 1994). In their

classic study "Reconstruction Following Disaster," which involved research on communities

in San Francisco, Anchorage, Managua, and Rapid City, they define community recovery as

a series of sequential and chronological activities determined by the magnitude of disasters

(Haas et al. 1977: 13). According to Haas et al. (ibid), disaster recovery efforts are aimed at

rebuilding and replacing urban functions and are governed by complex interactions between

pre-disaster trends, available resources, and value-driven choices. Haas et al. develop a model of the recovery process to help better understand activities during the recovery period at a macro scale (e.g. the city or region as a whole). Their model of recovery activities identifies four stages in the post-disaster recovery phase.

The four stages are 1) an emergency period—which involves coping with the immediate aftermath of damage, destruction, death, injury and general malfunction; 2) a restoration period—involving a return to relatively normal functioning of social and economic activities; 3) a replacement reconstruction period—this involves the rebuilding of capital stock to pre-disaster levels, and return of social and economic activities to pre-disaster levels or greater; and 4) a commemorative, betterment and developmental reconstruction period—which involves improvement and development of the damaged areas in order to increase safety and to better the communities (ibid: 2-3). Haas et al. concluded that, based on their empirical research, each of the four recovery stages takes ten times the duration of the previous phase. "For all our studies, restoration and reconstruction were approximately ten-fold and hundred-fold multiples of the emergency period" (1977: 18). They distinguished between various types of emergency activities in a time sequence to suggest that recovery activities occur in an organized and continuous way. They studied these activities in terms of how decisions are made, and developed a timetable and check lists for the decision making process to improve future recovery plans (1977: 261-293). Haas et al. argue that once the emergency period is over, communities tend to experience the re-emergence of "the ongoing forces that produced the characteristics of the predisaster city" that are "the primary determinants of the city of the future" (ibid. 1977: 25).

They found that a number of factors affect the rate of disaster recovery. These include: the magnitude of damage and loss; resources for recovery; prevailing disaster trends—"rapidly growing cities recover rapidly; stable, stagnant or declining cities recover slowly and may even have their decline accelerated" (Kates and Pijawka 1977: 19); and leadership, planning and organization (ibid.). They also discussed population loss and recovery; influence of the market economy trends; policy issues; housing availability and the tenancy situations in the pre- and post-disaster period; issues of class (economic and political) composition in the communities; land-use planning issues; and overall development issues. These issues they discussed in their analysis are crucial topics for any community's recovery still today and are covered in the present research in the case studies of Mano and Mikura communities affected by the Kobe earthquake.

Throughout their study, Haas et al. stressed the importance of developing and improving "pre-disaster planning for reconstruction" since "there is little [attention] aimed at long-range restoration or reconstruction" (ibid: xxxiv). Ultimately, the recovery process is intended to enable communities to "use every reasonable opportunity to make the city safer" (ibid: 68). In a summary, Haas et al. described recovery as follows:

> The central issues and decisions are value choices that give varying emphasis to the early return to normalcy, the reduction of future vulnerability, or to opportunities for improved efficiency, equity and amenity. Overambitious plans to accomplish these goals tend to be counterproductive. Major opportunities to improve the reconstruction process lie in early recognition of certain overlooked problems, people, functions and areas; the reduction of uncertainty about the future for those who live and work in the city; and the preparation for reconstruction before the disaster comes (ibid: xxvi).

According to Haas et al. (ibid), through addressing overlooked problems and reducing vulnerability and risk during the reconstruction stage, a community can create an opportunity to achieve the betterment and improvement of the community. Such problem-solving

activities involve different approaches for different communities under different conditions. In Haas et al.'s (ibid) analyses, activities directed towards the family level, community employment issues, and planning and policy decision making processes were addressed, but there was little discussion associated with actions taken at the small scale neighbourhood level as a collective approach that could contribute to the betterment of communities (e.g. organizing and re-building of neighbourhoods, increasing community networks, and putting effort into finding and solving common problems regarding long-term disaster recovery). Haas et al. (ibid) also argue that the larger the damage, the longer the duration of recovery. However, after witnessing the Kobe earthquake, Murosaki (1996) of Kobe University argues that recent urban disasters are so complex and create so many consequences for the affected regions and communities that it is not always the case that the scale of the damage and loss correspond with the magnitude of the hazard event. Similar hazard events can result in very different impacts in different communities (1996: 55).

Criticisms of Haas et al.'s work provide very valuable insights into community recovery and the consequent debates enrich the further conceptualization of community recovery. Rubin et al. (1985) found that the four stages of the recovery model are not always an accurate depiction of reality because recovery efforts are not necessarily sequential, and can occur simultaneously or take random sequences. Hogg (1980), who studied the long-term recovery process of Venzone, Fruili, found that the recovery process did not proceed in the clear-cut order that Haas et al. lay out and the amount of time required for each activity is unique to each community (Hogg 1980). Quarantelli (1989) and Wilson (1991) also assert that the long-term recovery process cannot be ordered and predictable. Further, the Haas model tends to view disaster survivors as if they are a homogeneous group with similar

interests and needs. Many studies reveal the heterogeneous and often conflictual nature of communities involved in the recovery process (Hoover and Bates 1985; Quarantelli 1989; Phillips 1991; Morrow 1992; Bolin 1994; Peacock and Ragsdale 1997). These important findings contribute to the improvement of existing theories and practices of disaster recovery and even though numerous critics disagree with some of their findings, Haas et al.'s model is still useful as a starting point to understand the dynamic process of community recovery activities (Berke and Beatley 1997: 35).

As Haas et al. claim, many disaster practitioners and researchers strongly agree that returning communities to where they were before the disaster might merely mean reproduction of vulnerable conditions that would make them vulnerable to future disasters (Haas et al. 1977; Hewitt 1997; Bolin and Stanford 1998; Enarson and Morrow 1998; Mileti 1999; Wisner et al. 2004). It is imperative to consider not only how and what to recover, but also what conditions are expected to be achieved in the end. Haas et al. see the ultimate goal of recovery to be to make things "safer than before" or at least to make every effort to make the city safer (1977). Quarantelli (1999) states that recovery is an attempt at "bringing the post disaster situation to some level of acceptability. This may or may not be the same as the pre-impact level" (ibid: 3). Community recovery is therefore defined here as an opportunity to achieve vulnerability reduction, and long-term community development that makes the community safer than before and less vulnerable than before. The next section introduces current community recovery plans and how they are implemented.

2.2.4. Shaping Recovery Planning

To understand the dynamics of post-disaster recovery, I discuss current practices of disaster recovery plans. Schwab et al. (1998) introduced a basic recovery plan for emergency planners and practitioners to apply. Their step-by-step planning process included consideration of who the emergency task forces were in the situation, which government agencies needed to be involved, and how disaster reconstruction plans could be created in the pre-disaster period. Schwab and others (ibid) roughly divided the process in to three steps— pre-disaster, short-term recovery and long-term reconstruction. They claimed that if there was a recovery plan in place in advance, the disaster stricken areas could respond more quickly and effectively. They argued that the pre-disaster period was critical for the opportunity it provided to prepare recovery plans in advance (ibid). Smith and Deyle argue that:

> If planners have a unique and important role to play in the recovery process, this role must correspond to their abilities to analyze problems, define alternative solutions, and fashion these solutions into plans. However, the need for rapid action and decision making in much of the post-disaster environment militates against careful data collection, analysis, and consideration. Since the opportunities to do these tasks exist almost exclusively in the blue-sky, pre-disaster environment, the major role for planners exists prior to disasters. The post-disaster, morning-after role of planners is to interpret these pre-disaster plans and make them applicable to the recovery process (1998: 254).

Although it is difficult to make a plan under uncertain conditions, it is still important to go through the process of recovery planning in advance. Topping (1998b) raised questions related to land-use planning issues that many disaster-affected communities in the past have had to deal with. Land zoning and building codes are often issues with regard to the improvement of safety and the long-term betterment of a community in the reconstruction period. If these plans and regulations are well placed beforehand, the literature suggests that

they can decrease serious conflicts and delays in the achievement of recovery (Topping 1993; Ishida 1996; Murosaki 1996; Schwab et al. 1998).

Furthermore, Murosaki (2004) claims that such planning practices have to be employed at the community level. Drawing lessons from the Kobe earthquake, Murosaki argues that today's urban disaster recovery takes longer, affects a wider geophysical area than was previously thought, and involves various unpredictable and complex social, economic, and political issues (ibid). Disparities among affected communities have been widened over time which is reflected in the fact that the recovery process varies from community to community. Murosaki (ibid) argues that because every community has different historical development and visions for its future, a community recovery plan has to be created in a way that meets each community's particular needs and interests. Today, many disaster researchers and practitioners argue that the recovery period is not the end of the disaster, but rather the beginning of future disaster preparation.

Disaster recovery involves continuous efforts to identify overlooked problems, clarify uncertain community visions and projects, reduce vulnerability and risks, and increase alternative solutions and resources (Haas et al. 1977, Mileti 1999; Smith and Deyle 1998; Reddy 2000). Recovery planning is therefore, "one of the greatest sources of opportunity" to improve existing community development practices (Reddy 2000). Recovery is no longer considered to be simply an activity to bring a community back to normal. "Returning to where they were before" is not an appropriate goal since that can merely re-create the same vulnerable conditions of the pre-disaster period. This is an opportunity for community planning to reduce the community's vulnerability (Haas et al. 1977; Bolin and Stanford 1998; Mileti 1999; Reddy 2000). The next section discusses current approaches to vulnerability

reduction through reviewing existing literature to learn how vulnerability is defined and how it is at least theoretically analyzed.

2.3. Vulnerability Analysis

2.3.1. Challenges in Understanding Vulnerability

There are certain dominant views about disasters: that they are natural and unexpected events; that adverse impacts from a disaster are distributed evenly and therefore all victims require disaster assistance equally; that actions taken for them are to fulfill material needs, and once done, self-help is expected. The vulnerability paradigm challenges these myths about disasters and claims that disasters are complex interactions between extreme natural events and human social development (Hewitt 1983; Varley 1994; Fordham 1999; Bankoff 2003). In this study, I consider vulnerability as characteristics and conditions of individuals or groups that influence their ability to respond or cope with the impact of a natural hazard (e.g. gender, race and ethnicity, age, education, housing ownership, rural/urban nature, infrastructure and lifelines, demographic trends, medical service availability, and so forth).

Vulnerable populations often experience harsher consequences from disasters than others, and self-help sometimes does not work for these populations due to their overwhelming levels of severe disaster impacts. As a result, it is often impossible for the vulnerable to achieve full recovery to the same level and at the same speed as the less vulnerable populations since they lack access to resources without public assistance. It is

vital to find ways to minimize vulnerability in the community in order to achieve effective recovery.

The influential work of social geographer Kenneth Hewitt (1983) contributed greatly to the development of vulnerability analysis. His edited book entitled, "*Interpretation of Calamity from the Perspective of Human Ecology*" (1983) consists of criticisms of traditional views of natural disasters as "acts of god," as well as criticisms of the dominant scientific and technological approaches to natural disasters. It provides an alternative view to explain natural disasters as "social phenomena" and illustrates how disaster risks and impacts are unevenly distributed and how vulnerable groups suffer as a consequence (Hewitt 1983).

While vulnerability analysis has grown within disaster studies, the concept of vulnerability has also received attention from other fields of study, concerning issues, such as health, poverty, and climate change. With emerging new ideas and approaches stimulated by these other disciplines, the application of the concept of vulnerability has increased in scope and the concept has undergone new interpretations. One new approach is the integration of the idea of Amartya Sen's (1981) "entitlement approach" that has been adopted by many scholars (Swift 1989; Blaikie et al 1994; Bohle et al. 1994; Moser 1998; Adger 1999) to define vulnerability as insecurity, or a lack of command or rights over resources.

Sen, an agricultural economist, defines entitlement as "the set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she faces" (1981: 497). He argues that people do not starve to death because there is not enough food, but they die because they do not have adequate command or ownership to acquire food even if there is plenty of food in a market. "What the entitlement approach does is to take up the acquirement problems seriously" (Sen 1984: 244).

It is not only the problem of accessibility but also of distribution. He attempts to explain the relationship between starvation, poverty, and famine by elaborating on the interconnectedness between resource availability and command over resources (food), to which the old traditions of economics do not pay much attention (Sen 1984). Taking Sen's arguments, vulnerability scholars elaborated on the concept of vulnerability as an "inability to establish entitlement to enough food" (Sen 1981: 8) or an inability to create access to resources necessary for people's well-being. The entitlement approach has made a critical contribution to today's conceptualization of vulnerable populations by elaborating on the idea that "the system of laws and rights is crucial to the well-being of those who may be at risk" (Hewitt 1997: 156).

To analyze people's vulnerability is to come to a thorough understanding of people's living conditions in the context of their everyday social realities. The difficulties of dealing with vulnerability lie not only in the fact that the causes of vulnerability are very complex and difficult to recognize, but also that it is very hard to assess vulnerability because vulnerability is often produced as the result of interactions between social, economic, political and cultural conditions. Vulnerability is also a relative term so that it should be used in comparison to other individuals or groups of people. Moreover, vulnerability is location and time sensitive (i.e. different places and different times can influence conditions of vulnerability) (Blaikie et al. 1994; Bolin and Stanford 1998). Recently, Cutter et al. (2003) have developed a model to compute a summary score to identify vulnerable conditions in the United States—the Social Vulnerability Index (SoVI) (ibid). They developed a method to add or subtract various vulnerability conditions, such as economic status, gender, race and ethnicity, age, employment situation, occupation, family structure, education, housing

ownership, rural/urban nature, infrastructure and lifelines, demographic trends, medical

service availability, and so forth. Their results clearly identified that New Orleans was one of

the most vulnerable cities in the United States before Hurricane Katrina struck the region

(Cutter et al. 2003). More studies like Cutter et al.'s are needed to recognize threatening

conditions of vulnerability so that communities and decision-makers can take actions to

minimize their potential risks for future disasters. The next section introduces how

vulnerability is analyzed in order to further understanding of the current approaches to

vulnerability.

2.3.2. Vulnerability Analysis Model

Blaikie et al. (1994)—who developed a model to understand the causes of

vulnerability in the context of disasters and its progression—define vulnerability as:

> the characteristics of a person or group in terms of their capacity to anticipate,
> cope with, resist, and recover from the impact of a natural hazard. It involves
> a combination of factors that determine the degree to which someone's life
> and livelihood is put at risk by a discrete and identifiable event in nature or in
> society (Blaikie et al. 1994: 9).

In this model, they illustrated how disasters occur when natural hazards affect a

vulnerable population. "Their vulnerability is rooted in social processes and underlying

causes which may ultimately be quite remote from the disaster event itself. It is a means for

understanding and explaining the causes of disaster," Blaikie at al. argues (ibid: 22).

According to Blaikie et al's Pressure and Release Model, the progression of

vulnerability may precede through the following three accumulated phases—root causes,

dynamic pressures, and unsafe conditions (see Figure 2.1):

Figure 2.1: Vulnerability Pressure and Release Model

THE PROGRESSION OF VULNERABILITY

1	2	3		
ROOT CAUSES	**DYNAMIC PRESSURES**	**UNSAFE CONDITIONS**	**DISASTER**	**HAZARDS**

ROOT CAUSES

Limited access to
• Power
• Structures
• Resources

Ideologies
• Political systems
• Economic systems

DYNAMIC PRESSURES

Lack of
• Local institutions
• Training
• Appropriate skills
• Local investments
• Local markets
• Press freedom
• Ethical standards in public life

Macro-forces
• Rapid population growth
• Rapid urbanisation
• Arms expenditure
• Debt repayment schedules
• Deforestation
• Decline in soil productivity

UNSAFE CONDITIONS

Fragile physical environment
• Dangerous locations
• Unprotected buildings and infrastructure

Fragile local economy
• Livelihoods at risk
• Low income levels

Vulnerable society
• Special groups at risk
• Lack of local institutions

Public actions
• Lack of disaster preparedness
• Prevalence of endemic disease

DISASTER

**RISK =
Hazard ×
Vulnerability**

R = H × V

HAZARDS

Earthquake

High winds (cyclone/ hurricane/ typhoon)

Flooding

Volcanic eruption

Landslide

Drought

Virus and pests

(Source: Blaikie et al. 1994: 23; Wisner et al. 2004: 51)

According to Blaikie et al., root causes are economic, demographic, and political processes that cause increases or decreases in vulnerability. Root causes are the most distant of factors influencing vulnerability in this model, yet they are deeply rooted in the society and the world economy which often makes them very difficult to eradicate. Root causes also reflect power relationships in a society. The distribution of power and imbalance of power can make certain individuals and groups vulnerable. More importantly, power relationships

often determine who has access to resources, which is another important factor in making some segments of the population vulnerable (ibid).

Dynamic pressures are considered as "processes and activities that 'translate' the effects of root causes into the vulnerability of unsafe conditions" (ibid: 24). Dynamic pressures are midway between root causes and unsafe conditions and "operate to channel root causes into unsafe conditions" (ibid: 24). Therefore, dynamic pressures are considered to include such things as rapid population growth, epidemic disease, rapid urbanization, war, foreign debt, and deforestation. Dynamic pressures also include elements of the institutional setting, such as lack of local institutions and appropriate skills, that contribute to transforming factors of root causes into unsafe conditions (ibid: 24-25).

At the end of the progression of vulnerability in the model (Figure 2.1), are unsafe conditions, the tangible and specific conditions that vulnerable populations may experience; the reality of their vulnerability (ibid: 25). Unsafe conditions are both physical and social conditions that influence the characteristics of vulnerable individuals and groups.

It may be helpful to look at an example of how the various levels of factors (root causes, dynamic pressures and unsafe conditions) interact. For example, a female disabled person can be vulnerable due to her socially marginalized situation—being a woman and disabled (root causes), which accelerates when local governments do not have an appropriate policy to secure an affordable home for her, or her community does not have adequate support programs to meet her daily needs (dynamic pressures). Under such circumstances, she has to live in an inexpensive home which is a poorly maintained fragile building (unsafe conditions). If a hazard, whether an earthquake or flood, strikes, her home would experience severe damage from the hazard.

Blaikie et al. demonstrate how people's vulnerability can be aggregated or reduced

depending on a society's economy, politics, and other cultural norms and traditions. A

disaster occurs when two opposing forces come together:

> those processes generating vulnerability on one side, and physical exposure
> to a hazard on the other. The image resembles a nutcracker, with increasing
> pressure on people arising from either side – from their vulnerability and
> from the impact (and severity) of the hazard on those people at different
> degrees of vulnerability (Blaikie *et al* 1994: 22).

> According to Blaikie et al., Risk (Disaster) = Hazard $\times$ Vulnerability (Wisner et al.

2004)[2]. When a physical event takes place where a vulnerable population lives, we have a

disaster.

As O'Keefe and his colleagues argued in 1976, "Disaster marks the interface between

an extreme physical phenomenon and a vulnerable human population. It is of paramount

importance to recognize these elements. Without people there is no disaster" (ibid: 566).

Cannon (1994) also argues that:

> The processes which make people more or less vulnerable are largely (but not
> exactly) the same as those which generate differences in wealth, control over
> resources, and power, both nationally and internationally. The Vulnerability
> concept is a means of 'translating' known everyday processes of the
> economic and political separation of people into a more specific identification
> of those who may be at risk in hazardous environments (ibid: 17).

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[2] In the first edition of "At Risk" by Blaikie et al, they expressed the formula as an addition equation (i.e. Risk
(Disaster)=Hazard+Vulnerability) (1994). In the second edition of their book (Wisner et al. 2004), they
changed the formula to a multiplication equation (i.e. Risk (Disaster)=Hazard×Vulnerability).

People's vulnerability is reproduced by human development which is an accumulation of everyday decision-making, planning and implementation. Factors influencing individual vulnerability are age, physical and mental disability, race and ethnicity, gender, religious and political preference, education, occupation, income, housing ownership/ tenancy, etc., which in turn are influenced by geographic, physical or environmental conditions (e.g. whether or not the region is mountainous; whether it is urban or rural; whether it is close to water; whether it is farmland, etc.) as well as the characteristics of communities or neighbourhoods where individuals live (e.g. whether the community is highly integrated or not; how resourceful the community is; whether the community has effective planning; whether the community has a collaborative relationship with local government).

These lists of vulnerable forms and conditions provide some basic examples of how and what to look at in considering people's vulnerability. Vulnerability analysis involves understanding various elements of individuals' or communities' daily activities and how they interact with each other to intensify their vulnerable conditions. Many other disaster researchers have followed Hewitt's idea (1983, 1997) of the everydayness of disasters and people's vulnerability (Wisner 1993; Cannon 1994; Varley 1994; Lewis 1999).

2.3.3. Alternative Approach—Capacity to Deal with Vulnerability

Blaikie et al.'s (1994) model is valuable and meaningful when it is used to understand what factors are influencing vulnerability and how those factors are accumulated. A problem arises when vulnerability is treated at an operational level to achieve vulnerability reduction. To resolve such a limitation, some vulnerability studies have begun recognizing the

capability of the vulnerable. These studies recognize that, to a degree, vulnerable populations are capable of handling their own vulnerability (Anderson and Woodrow 1989 and 1990; Longhurst 1994; Blaikie et al. 1994 and 2004; Moser 1998; Fordham 1999). Because the word "vulnerability" means being prone to or susceptible to damage or injury, social vulnerability to disaster also implies an inability or incapacity on the part of persons and groups who are considered to be socially vulnerable. However, it is quite often the case that vulnerable populations are capable of dealing with various problems and challenges during a disaster period. Moreover, people can be vulnerable in that they are poor and disabled, but the same persons can also be young and a member of the majority group in the society. In other words, vulnerable groups do not necessarily have only vulnerable characteristics, but they also often have characteristics of those who are not vulnerable (e.g. they may be wealthy, young, physically and mentally healthy, members of majority groups, or men) (Hewitt 1997; Bolin and Stanford 1998; Pelling 2003). Therefore, identifying groups of people by their vulnerable characteristics alone would lead to an inaccurate view of their conditions because they also have many other characteristics and abilities. Today vulnerability researchers pay attention to the concept of people's capacity to respond to the challenges of disaster vulnerability (Anderson and Woodrow 1989 and 1990; Blaikie et al. 1994; Cannon 1994; Longhurst 1994; Moser 1996; Pelling 2003; Davis 2004; Wisner et al. 2004). However, there seems to have been little effort made to understand the relationship between vulnerability and capacity.

Davis (2004) further elaborates the idea of capacity to redevelop the formula that he and other researchers created in 1994 (Blaikie et al. 1994). Incorporating the idea of capacity, the equation is expressed as (Davis 2004):

$$\text{Disaster (or risk)} \quad = \quad \frac{\text{Hazard} \times \text{Vulnerability}}{\text{Capacity}}$$

$$D = \frac{H \times V}{C}$$

According to this relationship, capacity building can play a critical role in minimizing the scale of disasters though what and how such capacity is developed and used is not clearly stated by the vulnerability scholars.

Moreover, there has been little discussion on how vulnerability is accumulated at a community level as well as how capacity is built at a community level if community vulnerability reduction is a part of the objective for community recovery. There are studies explaining that vulnerability is reduced when individual and community resilience is present (Timmerman 1981; Adger 2000; Klein et al. 2003; Paton et al. 2003; Manyena 2006; Buckle 2006; Pooley et al. 2006). Resilience is defined as ability to cope with, adopt, buffer, and bounce back from adversity or hazardous events (Holling et al. 1998; Pelling 2003). This "resilience" concept can help identify community's various types of capacities and recognize a fine difference between community's ability to absorb or bounce back risks and impacts and an ability to improve effectiveness of community disaster management. Such an analysis requires further research to address the different nature of capacities, in this research, thus, "capacity" is broadly used as a factor to influence community vulnerability.

Moreover, social capital has become one of the important concepts in the field of disasters (Buckland and Rahman 1999; Dynes 2002; Nakagawa and Shaw 2004). Social capital is often defined as social ties and community networks, which have influential impacts on community vulnerability. Putnam (1995) and other scholars, such as Portes (1998) and Stoecker (2003) argue that social capital can affect certain individuals and groups positively and negatively. Social capital can be a sign of community's solidarity and integration, but high social capital does not always result in only positive consequences for communities. Social capital can be used to identify thickness or poorness of social networks in a community. However, because the present research focuses on community's ability to deal with community issues rather than examining trusting relationships and neighbourhood ties (social capital), community capacity is used as a concept to describe collective ability that can enhance not only effectiveness of problem solving processes, but also richness of community integration.

To understand how community capabilities are used to manage or reduce their vulnerability, and to develop practical tools to implement vulnerability reduction at a community level, more studies are required. In this research, vulnerability reduction is considered as a part of a community's responsibilities since vulnerability is better managed by collective actions rather than by individual actions (Moore 1958; Wallrich 1996). Community vulnerability in this thesis therefore is defined as a characteristic and condition of a community that makes the community susceptible or prone to natural hazards. These characteristics and conditions include inability to enhance social integration and networks, lack of or fragility of community's resources, issues of accessibility, lack of knowledge and skills as well as issues relating to the built environment (infrastructure and building

conditions). The following sections discuss the important roles of community planning and community development in vulnerability reduction in order to identify community capacity as is one of the influential factors in achieving community disaster recovery and vulnerability reduction.

2.4. Community Planning for Disasters

Some studies of the Kobe earthquake suggest that individual recovery is faster if the community the person lives in is well integrated (e.g. it has high levels of social networks and resident's participation, it has well established community-based organizations and it is resourceful) (Hanshin Fukkou Shien NPO 1995; Inui 1998; Choi et al. 2004). Communities undergoing natural disasters often experience moments of chaos and disorganization and have to depend on emergency relief agencies and government assistance. However, during the reconstruction period, communities deal with a series of recovery planning tasks while restoring community autonomy and protecting community interest for the future as well as the present. Existing literature suggests that there are strong correlations between a community's various assets and resources in the pre-disaster period and the community's ability to cope with stressful events, such as natural disasters (Moore 1958; Leighton et al. 1963; Simile 1995; Reddy 2000). Also, disaster researchers find that locally oriented recovery approaches can bring positive contributions to disaster mitigation and recovery (Mileti 1999; Godschalk et al. 1999; Buckland and Rahman 1999). Yet, there are few studies of how communities can integrate existing disaster planning and the community planning of daily operations. As discussed in the previous section, community capacity can play an important role in vulnerability reduction, but capacity building approaches are not well

incorporated into existing disaster management. How communities can regain their

independence while establishing collaborative relationships with local government is one of

critical components for communities in achieving disaster recovery, but there is no research

to investigate the relationship between community, local government and the outcome of

disasters, for example. Moreover, what kinds of efforts are needed for communities to

achieve vulnerability reduction is not clearly addressed in the existing literature.

The role of planning, particularly community-based planning, is considered one of the

areas most in need of improvement in order to integrate the skills and knowledge of

community recovery, vulnerability reduction and community capacity building. The idea is

that planning for community recovery must involve not only the physical rebuilding of a

community, but also community development efforts that can promote social networks,

community leadership, the ability to solve common problems, and the enhancement of

community independence in order to minimize community vulnerability.

However, to date, there are only limited interactions between planning and

emergency management. Britton and Lindsay (1995) argue that:

> For most of the world's urbanised areas, the spheres of city planning and
> emergency planning remain unintegrated. That is theory and practice of city
> planning has not been blended with the principles and conventions of
> emergency management, even though there are significant commonalities
> between them (ibid: 95-96).

According to Britton and Lindsay (1995), community planning and disaster planning

are not well integrated because community planners and emergency managers have different

backgrounds in terms of their historical and theoretical development, and because they have

conflicting roles in practice (ibid). Historically, disaster management has been reactive,

short-term oriented, top-down and government-dependent, all of which have been strongly

influenced by the civil defence practice of "command and control" (Dynes 1994). Disaster management views disaster as an emergency, as chaos, and as an unexpected extreme event. On the other hand, because planning also considers disasters as emergencies, daily planning activities are separated and planners feel they should focus on non-emergency issues such as population growth, economic development, urban renewal, education, health, and conservation (Britton and Lindsay 1995). Since disaster management activities are all interrelated with aspects of local planning such as land zoning, building regulation, and housing policy, it seems most beneficial if community development and disaster management efforts are well coordinated, if not intertwined with each other (Godschalk *et al*. 1999). The next section introduces the literature on community development in order to understand current practical approaches to community development and community capacity building.

2.5. Community Development

2.5.1. What is a Community?

In this thesis, communities are defined as groups of people living in a geographically recognized area. A community is also a place where people can take collective actions to solve common problems (Green and Haines 2002). Although it can be important for some studies to refer to a neighbourhood as a political unit (Williams 1985) separated from community, in this thesis, the words neighbourhood and community can be used interchangeably (Morris and Hess 1975: 21-22). Community and neighbourhood are considered to describe any of the following: a geographic place; social interaction on matters of shared concerns about specific interests; social organizations or institutions that offer

opportunities of enhancing interactions and bonds among residents; and the set of obligations

and responsibilities to help other members (Rubin and Rubin 2001: 97; Green and Haines

2002: 4).

The long-term development of communities requires various processes and actions.

There are different ways to identify such diverse processes and functions. For instance,

Warren and Warren (1977) identified six kinds of neighbourhood functions:

1. As a sociability arena—A community provides an informal communication space,
2. As an interpersonal influence center—Members of a community influence each other's behaviour and values,
3. As a source of mutual aide—Members help each other out in an emergency, and take care of each other,
4. As an organizational base—A community provides bases for local organizations, such as women's/children's/senior's clubs, PTAs, and local branches of larger organizations,
5. As a reference group—A community provides a basis for one's identity and a sense of belonging,
6. As a status arena—A community provides spaces and occasions to show personal achievements and well-being

(ibid: 16-25).

The authors do not mean that any particular community will necessarily perform all

of these functions. Some communities may perform all of these functions but other

communities may perform only one or a few of them depending on the culture, income,

ethnicity and race of the communities (ibid: 25-26). Warren and Warren (1977) argue that

neighbourhoods can provide many possibilities for social change and a promise for

democracy that "no other social group seems to be as well equipped to do" (ibid: 204). They

point out that community-based organizations (CBOs) play a major role in clarifying and

identifying the solutions to problems (ibid: 204), and they are often better equipped than

government and private industry to maximise the potential functions of the community in

working together to improve and solve existing problems (ibid: 206). In this study, these six

functions are considered to be some of the major characteristics of community integration and solidarity.

2.5.2. Types and Characteristics of Community Development

Community development encompasses a wide range of disciplines and practices. Although community development practices vary from community to community, all community development originally began as part of efforts to plan for and bring about improvement in a community. The term 'community development' came into common usage after World War II due to the strong emphasis on social reconstruction following the war. Community development was recognized as "a group of people in a locality initiating a social action process (i.e. planned intervention) to change their economic, social, cultural, and/or environmental situation" (Christenson et al. 1989: 14). I use the definition of community development elaborated by Green and Haines (2002): "a planned effort to produce assets that increase the capacity of residents to improve their quality of life" (ibid: vii). These assets may include several forms of resources available to a community, such as physical, human, social, financial, and environmental resources.

Broad practices of community development are difficult to grasp. Christenson (1989) identified three different community development themes: self-help, technical assistance, and conflict through which communities can initiate a social action process to improve their current situations and achieve community betterment" (ibid: 32). Christenson suggested that these categorizations involve considerable overlap and concludes that "the most successful community development efforts use a little bit of each theme" (ibid: 32.). Table 2.1, shows the relationship between community issues or problems experienced by certain members of

the community and those who play central roles in dealing with them. Although this is a broad analysis of community development, it can provide a general sense of community development practices and helps focus on some concrete issues that will be dealt with in this instance in communities in Kobe (e.g. roles of change agent, types of clientele, speed of change, and sustainability of change).

Table 2.1: Comparison of Three Themes of Community Development

Themes	Roles of Change Agent	Task/Process Orientation	Typical Clientele	Speed of Change	Sustainability of Change
Self-Help	Facilitator, educator	Process	Middle-class	Slow	Excellent
Technical Assistance	Advisor, consultant	Task	Leaders, administrators	Moderate	Good
Conflict	Organizer, advocate	Process and task	Poor, minorities	Fast	Weak

(Christenson 1989: 33)

As defined earlier, community development is a planned effort to produce assets that increase the capacity of residents to improve their quality of life. Garkovich (1989) argued that through the building of local capacity, community development is achieved. According to Garkovich, capacity is defined as:

> the ability of residents to articulate needs and to identify actions to solve these needs. Local capacity also represents the ability of residents to mobilize and organize local or extra-local resources in the pursuit of community defined goals (Ryan 1987). Simply put, local capacity engages organizations, leadership, and citizens in the community development process (Garkovich 1989: 197).

In order to plan and achieve successful community development, communities need to enhance community capacity and community capacity is built through a series of activities including identifying problems, mobilizing and organizing community resources, fostering leadership, encouraging residents participations, and so on. Because one of the ways to

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implement effective community development is through community capacity building, the following section discusses capacity building and develops a working definition of community capacity.

2.5.3. Building Community Capacity

Historically, a common practice for dealing with neighbourhood problem was for governments and social service agencies to take a "needs-oriented" approach to seek solutions. This needs-oriented approach tended to look at the deficiencies and weaknesses of the community (Kretzmann and McKnight 1993). More recently, social scientists prefer to focus on a community's skills, assets and capabilities which can be utilized in solving their problems (McKnight and Kretzmann 1996; Chaskin et al. 2001; Rubin and Rubin 2001; Green and Haines 2002). These scholars define skills, assets and capabilities slightly differently, but they mostly include human, social, cultural, physical, financial, and environmental capital as part of a community's capacity to enhance further development of the community. Chaskin et al. (2001) define community capacity as follows:

> Community capacity is the interaction of human capital, organizational resources, and social capital existing within a given community that can be leveraged to solve collective problems and improve or maintain the well-being of that community. It may operate through informal social processes and/or organized efforts by individuals, organizations, and social networks that exist among them and between them and the larger systems of which the community is a part (Chaskin et al. 2001: 7).

Increasing attention to understanding community capacity is rooted in the response to social problems arising in modern urban centres over the last four or five decades, such as ameliorating urban poverty (Alinsky 1969; Chaskin et al. 2001; Fraser et al. 2003: 417). Although community capacity building is a "relatively newly defined area of policy and

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practice" (Chaskin et al. 2001: 93), it is expected to enhance interactions among community social, human, financial, and physical capital and resources in order to achieve community development. Green and Haines (2002) assert that one of the objectives of community development process is to build capacities (or assets) in communities. Community capacity building is therefore achieved as part of community organizing efforts by actions and planning led by community based organizations (CBOs). Before introducing the literature on community organization and CBOs in the next section, the importance of public participation is addressed.

According to Green and Haines (2002), public participation is a prerequisite for the democratic community development approach. They argue that there are at least four types of public participation: public action (initiated by citizens for their own purposes); public involvement (initiated by government for administrative purposes); electoral participation (activities to elect or vote for representatives); and obligatory participation (activities in which participation is compulsory) (ibid: 35-36). They refer to Sherry Arnstein's (1969) "ladder of public participation" to explain the different degrees of participation and the differing power relationships with government.

Green and Haines (2002) argue that although achieving public participation is a difficult task, maintaining the level of participation once achieved is probably harder. Because people participate for specific reasons, when they do not have a reason, they generally do not get involved. Similarly, people who have become involved will often cease to be involved once the initial reason for involvement has disappeared. Social relationships are one of the most influential reasons for people to participate—to meet new people and also to do things with their friends. Such activities enhance a community's social capital and

higher levels of social capital can help further mobilize people (Putman 1995). However, as

Green and Haines (2002) suggest, there are various factors that lead people not to participate.

These may relate to lack of time, but also to lack of childcare, transportation, and advanced

information (ibid: 38). They also suggest that to achieve higher and long-term public

participation, "residents need to see real, direct benefit of participation . . . residents typically

need to see that their actions are having some impact" (ibid: 38). As Arnstein (1969) argues,

"there is a critical difference between going through the empty ritual of participation and

having the real power needed to affect the outcome of the process" (ibid: 217). Communities

must gain real power to make decisions and take actions to improve their quality of

community life as an essential part of their community development practices.

Through building community capacity, communities are able to restore what they

have lost in disasters including material losses, community networks, and community

autonomy. In this study, community capacity is defined as a community's resources as well

as its collective ability to solve common problems (community organizing) and further

enhance community safety and quality of life. Capacity also includes a democratic decision-

making approach, collective action approaches, the creation and improvement of community

planning practices and implementation, the establishment of CBOs to assist with specific

community needs, and efforts to achieve a collaborative relationship with local governments

and businesses.

2.5.4. Community Organizing

Saul Alinsky (1962; 1969; 1989) pioneered an approach to community development, "Community Organizing," in which people work together to solve problems under the leadership of community organizations and organizers. While witnessing the struggles for civil rights in Chicago in the 1960s, Alinsky envisioned community organizing as a way to regain democracy and social justice (1962; 1969; 1989). Although Alinsky's approach was considered as radical or "conflict" based (Alinsky 1969, 1989; Morris and Hess 1975; Christenson 1989), community organizing is now widely applied and has been further developed by community scholars and activists (Morris and Hess 1975; Kahn 1991; Rubin and Rubin 2001). Morris and Hess (1975) declare that the work for community organizing is not to confront the centers of power, but to create new institutions that "can create the seeds of future society within the present one" (ibid: 37). According to Rubin and Rubin (2001), "community organizing involves mobilizing people to work together to solve shared problems. . . Through organizing and development people gain the confidence and tools to collectively resolve societal problems" (ibid: xi). Si Kahn (1991) also asserts that:

> In organizing we begin to rediscover our own needs and demand that they be filled. In doing so we discover our strengths, our roots, our heritage. We relearn the skills of cooperation, of collective action, of working together, or supporting each other. In this knowledge and this experience is the beginning of real power for people. Organizing is for people with problems. It is good as a tool, a weapon, a means (ibid: 11).

Community organizing focuses on mobilizing people to solve problems as a critical part of community process. Community development is often widely accepted as a process of overall community building. Rubin and Rubin (2001) define community organizing and development as the following:

Community organizing involves bringing people together to combat shared problems and to increase peoples' say about decisions that affect their lives. *Community development* occurs when people strengthen the bonds within their neighborhoods, build social networks, and form their own organizations to provide a long-term capacity for problem solving. When many people and many organizations join together to combat injustice and inequality they create a *social movement* (ibid: 3, italic original).

Although both community organizing and development have their own roots, today their activities and objectives are often closely related to each other. It can be difficult to distinguish what types of activities fall under community organizing versus community development. Chaskin et al. (2001) view community organizing as the process of community capacity building and do not use the term "community development" to explain their approach. This study defines community organizing as a part of community development, which involves not only solving shared problems, but also addressing inequalities of resources (wealth and power), promoting democratic values and practices, enhancing the standard of living, and building a sense of community (Rubin and Rubin 1992; Green and Haines 2000).

2.5.5. Community-Based Organizations (CBOs)

The literature suggests that community-based organizations (i.e. any organizations based in a community which often contribute to enhancing community and individual's life) play a critical role in community development (Alinsky 1969; Warren and Warren 1977; Mesch and Schwirian 1998; Keating and Krumholz 1999; Rubin and Rubin 2001; Chaskin et al. 2001; Green and Haines 2002; Silverman 2004; van der Plaat and Barret 2006). Community-based organizations today perform a wide range of functions that assist residents of complex and diverse communities in various facets of their lives. Rubin and Rubin (2001)

classify different types of CBOs according to their missions—those that strive to improve

social equity (*social equity* organizations), those that increase social justice (*social justice*

organizations or *pressure/protest* organizations), those that provide a good or service (*social*

production organizations), those that enhance community identity (*community identity*

organizations), and those that strengthen community defense (*community defense*

organizations) (ibid: 14-15).

These community organizations can also be classified by their complicated and

evolving relationships with government. *Pressure* organizations lobby, petition, or persuade

politicians, or negotiate with bureaucrats within the conventional rules of the system. *Protest*

organizations work "outside of the conventional rules, because those in the organization

question the legitimacy of the rules" (Rubin and Rubin 2001: 15). *Social equity* and *social*

production organizations may work with government, or work under government contracts.

Community identity and *defense* organizations may partner with a government agency (ibid:

15-16). Moreover, what kind of relationship a CBO can establish with government—whether

if it is equal, subordinate, assisting, or confrontational—is vital, as the relationship influences

the outcomes of the CBO's activities. To address problems of existing policies and promote

social change, CBOs often challenge government (Greens and Haines 2002: 73).

There are a number of advantages of having CBOs assist community activities. First,

CBOs can help empower people. Second, CBOs can provide continuity while community

membership may change. Third, CBOs can provide expertise. Finally, CBOs can help the

members to respond to problems more quickly (Rubin and Rubin 2001; Green and Haines

2002: 62). Although government agencies, private businesses, and various interest groups

inside and outside of the community can also have a great influence on a wide range of

community activities, CBOs can play a key role in the community development process (Green and Haines 2002: 72).

2.5.6. The Challenge for Capacity Building and Roles of Government

As discussed in this section, capacity can embrace a wide range of processes, activities, and relationships of a community. One of the concerns about the community capacity building approach is whether or not it really promotes inclusive solutions to community problems (Shirlow and Murtagh 2004). Advocacy planner, Paul Davidoff (1965) raised the following question about community capacity building many years ago—"who gets what, when, where why and how?" (ibid: 336). The capacity building approach needs to address this complex question in order to fully promote community development as a way of enhancing community life. The capacity building process often implies inclusiveness and collectiveness of the community; however, who is actually representing communities is not clearly addressed.

Another concern in regard to current community planning practices is whether building community capacity is really "manageable, or even possible" (Simpson et al. 2003: 278). According to Simpson et al. (2003), recent increasing attention to community capacity building is in fact creating pressure on communities to "take responsibility for their own development" and "to cease relying on government for direction and solutions" (ibid: 278). Simpson et al. wonder if a community can truly achieve self-sufficient community development projects with their own hands with the resources provided through local volunteerism. In their case study, they found that recent high interest and expectations regarding the community capacity building process can merely put pressure on some

communities and deplete rather than foster the possibilities and opportunities to increase

community capacity.

Especially for poorly resourced communities, community capacity building is not

really a plausible approach. For such communities, government interventions and close

assistance is critical, both financially and technically, to establish the foundations they need

to build their capacity (Keyes et al. 1996; Keating and Krumholz 1999). It is critical to

acknowledge the fact that no components of community capacity—including human, social

and economic capital—can simply replace effective public policy and government assistance

(Bridger and Luloff 2001). The challenge for government is to determine how to balance the

power between local governments and communities, how to allocate appropriate skills and

resources, and how to encourage participation without creating unreasonable pressures "on

time, personal energy and finances of residents" (Simpson et al. 2003: 284). Both local

governments and communities need to recognize the complexity of the decision making

process and to decide on appropriate ways of allocating resources in order to enable effective

capacity building processes.

Community capacity building can contribute to the enhancement of current

community development practices and lead to an increase in the community quality of life.

However, it is important to note that, especially in the Japanese context, community capacity

building is effective if national and local governments provide favourable environments for

communities. Community life involves not only building and maintaining infrastructure and

public facilities, but also providing for fundamental public needs with things such as

education, health programs, a welfare service, employment opportunities, and safety.

Without government efforts to provide these basic services, communities cannot sustain their

daily needs. Community capacity building approaches need to recognize the important roles of government.

2.6. Conclusion

In this chapter, I reviewed existing recovery studies, vulnerability analysis, and community development literatures and some gaps were identified. Drawing from this literature, I develop a research framework for this thesis in order to fill in some of the gaps that exist in the theories and empirical studies. Community recovery was shown to be an opportunity for a community to reduce its vulnerability, better itself, and ensure sustainability for future generations (Haas et al. 1977; Bolin 1998; Mileti 1999; Reddy 2000). However, few studies have been done to learn how effectively recovery can be achieved at a community level. To understand the difficulties surrounding community recovery theories and practices, I explored current vulnerability literature, since community vulnerability reduction is one of the areas that community needs to deal with while achieving disaster recovery. Vulnerability analysis (Blaikie et al. 1994; Wisner et al. 2004) helps understand how vulnerability is produced and what factors influence vulnerability. It also provides an in-depth analysis of how vulnerability is accumulated through different levels of socioeconomic, cultural, political and environmental factors (root causes, dynamic pressures, and unsafe conditions) (ibid). However, vulnerability analysis does not offer practical tools to guide how vulnerability can be reduced at an operational level, though many vulnerability scholars suggest that there is a correlation between vulnerability and capacity. Community capacity plays an important role in influencing existing vulnerability, yet how the two interrelate with each other in a community is not clearly understood from existing studies.

There is a lack of research that develops theories to explain how community vulnerability is reduced (e.g. whether it is a part of collective efforts of communities, and whether it is critical that community capacity building takes place before disasters). To understand how communities take collective actions, characteristics of community capacity, and how capacity is increased, community development literature was reviewed. Community development is "a planned effort to produce assets that increase the capacity of residents to improve their quality of life" (Greene and Haines 2002: vii). Broad themes of community development were introduced. It was shown to come about through self-help, technical assistance, or conflict that is treated strategically by CBOs and leaders who take the roles of facilitator, educator, advisor, consultant, and organizer or advocate (Christenson 1989). Community organizing and contributions of CBOs were identified as the critical elements in achieving successful community development through capacity building in developing a research framework. To further build up the framework, in the next chapter, community development within the specific context of Japanese community development practices is discussed.

CHAPTER 3 Community Development and Japan as a Context

3.1. Introduction

This chapter analyzes the different factors influencing community development in the larger context of Japan as a whole and how these factors affect communities' capacity and vulnerability. Because community development differs depending on the historical, economic, political and social background of the communities, Japanese urban planning, community-based planning and overall disaster planning is examined. Through a literature review, this chapter introduces theories and an empirical analysis of a recent emerging concept of "*Machizukuri*" (Japanese community based planning) in order to understand overall community development practices in Japan. Community development does not merely focus on a formal plan, but it also concerns how members of the community are involved and how they solve their problems. The current state of civil society in Japan and the historical development of volunteerism and neighbourhood associations are therefore examined. The aim is to lay out the various factors that are key elements for both increasing capacity and reducing vulnerability in the context of Japan.

3.2. Overview of the Japanese Urban Development Context

3.2.1. The Historical Development of Urban Planning in Japan

Whether they were feudal lords or monarchs, leaders in pre-modern Japan had their own ways of controlling their land and people. The oldest planned city in Japan was recorded 1,300 years ago in Naniwa (near Osaka city) (Watanabe 1993: 79). However, most scholars

of Japan's urban development agree that the Meiji Era (1868-1909) was the beginning of the modern period in Japanese urban planning development (Ishida 1987). Although there was already legislation in place to control the urban environment in Tokyo—the Tokyo Urban Area Improvement Ordinance of 1888—there were no urban planning laws to regulate cities across Japan in a comprehensive manner until 1919.

In the early 1910s, a group of architects and government officials began to study the western experiences in this emerging field as they sought solutions for increasing urban problems caused by rapid industrialization and urbanization. The result was the enactment of the City Planning Act of 1919, which became the nation's first general planning act for major cities. It has been commonly called the "Old Act." It controlled the nation's planning system for nearly half a century and was the decisive factor for the development of Japanese cities until it was replaced by the City Planning Act of 1968, or "New Act" (Watanabe 1993: 293).

The Old Act was influenced by western planning approaches at the time: the Garden City movement of Ebenezer Howard; the 1909 Housing and Town Planning Act in England; and the City Beautiful Movement in the 1910s in America (Watanabe 1993). Since then, the planning profession in Japan has been influenced by Western planning in many ways, yet Japanese planning has been quite different from that in the West in many ways as well, especially those in which planning is implemented. Japanese planning has had strong ties with the government compared with the Western planning profession. Although planners in the West often work for the government, they have more independence from the government than do planners in Japan. Japanese city planning has often meant simply government led activities (e.g. land-use planning, building codes and standards, urban renewal and nation-wide infrastructure development) (ibid: 38-39).

According to Ishida (1987), the City Planning Act (1919) had very centralized rules that did not give any authority to the local cities and towns for planning and implementation. The Act introduced new ideas and rules such as building codes, land use zoning, land readjustment, land management, and training of planning professionals. This planning act helped to modernize Japanese cities, and to prepare the basis for a capitalist system, but it did not support a democratic climate at the municipal level of government, nor did it involve residents in the planning process. "This framework was maintained even when the law was finally amended in 1968, as urban planning then became an agency-delegated function of the state to be carried out by local government" (Nakai 2002: 18).

Japanese urban planning therefore has been a means of top-down, "state development"; the government recognized its limits when it came to small scale development in local communities. In 1980 the District Planning (*Chiku Keikaku*) system was introduced, allowing for planning at a district level. With the introduction of the District Planning system, the Basic Building Act was revised and amendments helped stimulate development projects at the local community level. The Mano community in Kobe city was selected as a pilot model community and the Mano District Plan was created in 1980. In 1981, Kobe City first introduced the "*Kobe shi Chiku Keikaku oyobi Machizukuri Kyotei touni kansuru Jorei*," known as "*Machizukuri Jorei*" (Community Building Ordinance) for communities to propose their own neighbourhood development plans to the City Mayor. The Kobe *Machizukuri* Ordinance was the first ordinance of this kind ever created in Japan (Kobayashi 1994). Although the details of *Machizukuri* history and movements are discussed in the next section, this ordinance allowed neighbourhoods in Japan to take the initiative in the decision making process for their own neighbourhood development issues. Recently, in 2000, minor revisions

were made to the Urban Planning Act of 1968 to allow local communities to engage more fully in improving the quality of their community life (Ministry of Land, Infrastructure and Transportation, City and Regional Development Bureau 2003).

3.2.2. Inner-City Struggles—Efforts to Change the Local Planning Approach

Community development practices face major problems every time major nation wide events occur. World War II caused massive damage to Japanese society (119 cities were affected and 2,350,000 houses destroyed). The government needed to help the country recover from the losses as soon as possible, and aimed to reconstruct the cities to the same development levels as Western societies as soon as they could. The rapid reconstruction and development efforts caused problems such as the large scale production of deficient housing, poor public infrastructure and facilities, environmental destruction, high population density, and urban sprawl. Although Japan had gained remarkable economic success by the 1960s, the people in Japan who contributed to this achievement experienced poor living conditions as a consequence (Ishida 1996; Nishibori 1996).

In the 1960s, once traditional urban centers were too congested to grow any larger, many businesses and industries sought better locations in order to expand their economic activities. Soon the inner city areas were depopulated and in decline. The rapidly developed urban inner-cities were no longer economic centers but rather urban planning problems (Alden et al. 1994). The 1960s was a period when people clearly expressed their frustrations towards their living conditions. They actively participated in social movements, and protested various government decisions and plans. Communities became passionate about air pollution, historical heritage, the right to sunshine, anti-large scale development plans, harsh

working conditions, the lack of playgrounds, daycares, schools, parks and libraries, and the

need to improve paved streets, storm water management, the sewage system and emergency

preparedness. Individuals often protested against virtually anything that the government

decided upon or implemented (Ishida 1987).

In order to respond to these demands from citizens' movements, the Old Act was

revised in 1968, in a way that would allow more democratic process and the implementation

of urban planning. The New Act includes new measures for public participation, and the

delegation of responsibility and authority to local governments. However, many scholars in

urban studies point out that this New Act has failed to achieve its objective of a decentralized

and democratic decision making (Ishida 1987; Watanabe 1993; Nishibori 1996). In the New

Act, the meaning of public participation is not clearly defined, and the methods for releasing

information are not specifically discussed, nor is the right to public participation spelled out.

A public hearing or meeting for a new project or plan is not legally required and as a result

public participation is optional. Many local governments still make decisions unilaterally,

even though they do not have the legal right to do so (Ishida 1987).

3.2.3. Disaster Management Policy

Urban planning policies have been revised whenever Japan experienced major

destruction from natural disasters, wars and other tragic accidents, such as oil tank or nuclear

plant explosions. The first attempt to plan cities for disaster prevention was made after the

Kanto Earthquake[3] (1923). The earthquake itself killed 106,509 people and completely or partially destroyed 310,000 houses. The fires that erupted immediately after the quake burned 3,350 ha. 1,300,000 people became homeless as a result (Hanes 2000). Architect Kataoka Yasushi was one of the pioneers in incorporating safety issues into urban planning and strongly advocated the use of reinforced concrete for public buildings and of developing street plans to prevent future disasters (Watanabe 1993: 123). The building code for urban areas was first created in 1920 but did not include any measures specific to disaster prevention. Although architects and seismologists had been studying earthquake-proof buildings since the late 1880s, it was only in 1924, after the Kanto earthquake, that the code was modified to enforce fire and earthquake-proof buildings (Ishida 1987). The Kanto Earthquake reconstruction plan was soon issued and the plan greatly contributed to Japanese urban center development (Watanabe 1993). Massive amounts of money and human capital[4] were given for the reconstruction of infrastructure in Tokyo metropolitan areas (Watanabe 1993) which enabled them to achieve recovery within seven years.

Until 1961, when the Basic Disaster Prevention Plan was developed, disaster prevention or reconstruction policies were created in response to individual events as "special" or "limited time" policies to meet specific needs (Hori 1998). Prior to the Kobe earthquake, the Basic Disaster Prevention Plan had only been revised once, after the 1971 San Fernando Earthquake. The Plan, according to Hori (1998), did not fully address disaster recovery issues because, at that time, the fundamental objective of disaster plans was aimed at how to predict and how to eradicate the cause of hazards. Policy makers did not focus on

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[3] It was measured to be a magnitude of 7.9 (Ishida 1987).
4 According to Watanabe (1993), about 830,000,000 Yen (measured in 1930) was spent between 1923 and 1930 and in total 6000 engineers and government officers worked on the reconstruction projects (ibid: 274).

recovery plans since prediction and prevention efforts were expected to stop the occurrences of disaster. In other words, there would be no disaster; therefore, no recovery would be necessary (Hori 1998).

Six months after the Kobe earthquake, the government thoroughly revised existing disaster management measures and created the "Amendment of Basic Plan for Disaster Prevention" in July 1995. According to the revised Basic Plan for Disaster Prevention, local governments are expected to create, develop, and improve their own disaster relief and restoration plan. However, some critics say that the plan is still, at a fundamental level, highly centralized; the bureaucratic and top-down nature of the central and local governments has not changed. In reality, efforts to decentralize decision-making through revision of emergency measures may be in vain (Hori 1998). Since the Kobe earthquake, the government has made further minor revisions several times. These revisions were intended to minimize existing risks and to prepare for possible disasters in the near future. More reconstruction issues were discussed and recovery plans were recommended to local governments to create and improve current local government's disaster management plans (Cabinet Office 2006).

3.2.4. *Machizukuri* (**Japanese Community Planning**)

Since the 1960s, as a result of a number of social and environmental issues, such as public health, housing affordability and disasters, it has become common for people to organize interest groups such as neighbourhood associations to discuss their pressing concerns (Kurasawa 1990). It was also around the same time that many progressive approaches were taken by local radical politicians and private planning consultants. Such

emerging approaches and directions are the origins of contemporary Japanese community-building (*Machizukuri*) efforts. Since then, *Machizukuri* activities have contributed to stimulating the realization of community development and empowerment (Hayashi 2000).

As mentioned earlier, *Machizukuri Jorei* (the Community Building Ordinance) was first created in Kobe City and since then this ordinance has played an important role in enabling neighbourhoods to engage in their own community development plans. One of the issues stipulated in this ordinance is that residents can establish a town building council (*Machizukuri Kyogikai*) and this council represents the residents in the community. Under the Kobe Community Building Ordinance, the council has the right to know about any development activities in the designated area and the council can make suggestions regarding any of the plans before they start. The council can even request that a plan be cancelled if it threatens their standard of living. They can also propose a plan to the Kobe Mayor and if they need some expert help, the City of Kobe will provide support and hire experts (Kobe City 1981).

From 1980 onward, *Machizukuri* as the local resident's active participation in community development has become popular for communities in Japan. The creation of the community building ordinances has helped communities that want to establish Town-Building Councils which enable their needs and concerns to be heard by the government and which further the planning and visioning of their communities' futures. Little study has been undertaken of the role the councils play in community development practices. Many communities in Japan have a number of CBOs, including Town-Building Councils and Neighbourhood Associations. How each of the CBOs and government interact is unclear

since most of the members take multiple roles in different organizations, making it difficult to distinguish one CBO from the other (Tanaka 1990; Nakamura 1990; Hashimoto 2007).

In particular, how existing neighbourhood associations are involved in *Machizukuri* activities has not been clearly identified and defined. Edgington (2003: 215) addresses such points and argues that the *Jichikai* (the resident's council/ neighbourhood association) is not really a part of the *Machizukuri* movement even though this neighbourhood association has played a critical role with respect to community integration or solidarity in Japan for a number of years. Ooto et al. (1999) argue that the existing community organizations are often established on a very small scale or sometimes without geographical boundaries. This makes it difficult to work with them to discuss community plans. Moreover, these organizations tend to exercise top-down decision making approaches that are not appropriate for carrying out Machizukuri (Nakamura 1965; Kurasawa 1990; Tanaka 1990; Ooto et al. 1999). Therefore, *Jichikai* or neighbourhood associations (NHAs) are not mentioned in the Community Building Ordinance.

Many scholars studying Japan agree that the Kobe earthquake triggered citizen activism (Sorensen 2002 and 2007; Edgington 2003; Hirohara 2002; Hayashi 2000; Hein 2003; Osborne 2003). The Kobe earthquake triggered new thinking about the role of local community planning so much that *Machizukuri* became a popular term and was considered a sign of civil society improvement. To some extent it came to represent the antithesis of top-down state-driven planning (Nakai 2002) or "a paradigm shift from a top-down techno-bureaucratic approach to a bottom-up collaborative approach" (Murayama 2005). As part of the reconstruction efforts in Kobe after 1995, 73 Town-Building Councils were established and, soon after the quake, in total, 100 Town-Building Councils were active in the re-

building of their communities (Kobe Machizukuri Centre 1999)[5]. The councils' contributions

to the recovery of communities (e.g. negotiation with the local government, implementation

of land use zoning or redevelopment projects, and stimulating community networks) are well

recognized today and the idea of creating safer communities is now an essential element of

Machizukuri (Ministry of Land, Infrastructure and Transportation 2006). The long-term role

of these councils over the last 10 years or so is difficult to evaluate as yet, as is their future

role. However, whether they continue to take active roles in community development at the

present and whether they will disband in the future and existing neighbourhood associations

will take over their roles in maintaining the existing community practices are questions that

need to be examined in order to identify the contributions and shortcomings of town-building

councils and neighbourhood associations in community development practice.

3.3. Negotiating the Context: Emerging Civil Society and Voluntary Sectors in Japan

3.3.1. Weak or Strong?—Civil Society in Japan

Sorensen (2002) suggests one of the unique features of Japanese post-war

development has been "Japan's extremely weak civil society" (ibid: 336). Johnson (1995)

shares with Sorensen (2002) the view of Japan as a successful capitalist society and argues

that a Japanese model of capitalism has been possible only because there is "a strong state

and a weak society" (Johnson 1995: 67). Masuda (1957), an urban historian, also notes this

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[5] According to Mr. Miyanishi, a Mano community planner, many of these councils discontinued their activities once major disaster reconstruction efforts were implemented (interview with Mr. Miyanishi: 10/10/2003).

weakness. Masuda suggests the historical processes and realities of social, cultural, political and economic development have left Japanese civil society somehow immature.

It would be a long interesting debate to determine if civil society in Japan is flourishing; whether it is promoting quality of life for everyone; whether it is advocating for equality and equity; and whether it is fostering collective actions to pursue democracy. Is it true that civil society is really about noble causes and well-intentioned actors, or can it have some negative consequences as well? Defining what civil society means requires diverse theories and ideas from a wide range of fields. It is not the objective of this research, but when the term is used here, it takes a broad meaning which has emerged in the modern era, of "a domain parallel to but separate from the state—a realm where citizens associate according to their own interests and wishes" (Carothers 1999: 18). Proceeding from this view, the idea of civil society has been broadened and described in a more tangible way. Civil society is "the organized, nonstate, nonmarket sector" (Pekkanen 2003: 118). It encompasses all the organizations and associations that exist outside of the state and the market. It includes various interest groups, which Carothers describes as;

> not just advocacy NGOs but also labor unions, professional associations (such as those of doctors and lawyers), chambers of commerce, ethnic associations, and others. It also incorporates the many other associations that exist for purposes other than advancing specific social or political agendas, such as religious organizations, student groups, cultural organizations (from choral societies to bird-watching clubs), sports clubs, and informal community groups (Carothers 1999: 19-20).

Can active, diverse associations and organizations play an important role in strengthening civil society? Can a strong civil society lead to the advancement of democracy and positively influence existing policies so as to improve the quality of life? It is tempting to

think that "a strong civil society ensures democracy." It is tempting to make correlations that "a weak civil society leads to a lack of 'civic engagement' and 'social trust'" (Carothers 1999: 21). However, some evidence in Japan and Germany suggests that civil society with a low profile can help establish better relationships between civil society and the state (Carothers 1999; Fukuyama 1992). Carothers concludes that "civil society groups can be much more effective in shaping state policy if the state has coherent powers for setting and enforcing policy. Good governmental advocacy work will actually tend to strengthen, not weaken state capacity" (Carothers 1999: 26). Civil society is therefore a critical component of democracy, but it is not the solution per se. no matter if it is strong or weak. Civil society must maintain a healthy relationship with the state as the state and civil society should work hand in hand to enhance each other, not to undermine each other. "Civil society cannot be understood in isolation, but it must be understood in relation to the state, not in opposition to it" (Schwartz and Pharr 2003: 28).

With this idea in mind, let us consider how Japanese community development has taken place, and whether it was a result of collaborative work between the state and civil society.

> . . . , whereas European and North American thinkers often wrote of "civil society" between 1750 and 1850, few Japanese promoted or even discussed the idea of civil society from the late nineteenth century to 1945. Indeed, its translation (*shimin shakai*) did not appear in common Japanese parlance until the postwar era. During the prewar era, most Japanese would have regarded "civil society" as inappropriate and illegitimate. The sticking point was the term "civil." While many Japanese embraced the Western word "society," the vision of a society governed by "citizens" (*shimin*) explicitly challenged the fundamental notion of imperial sovereignty. Put simply, there were no "citizens" in prewar Japan—only "subjects" of the emperor (Garon 2003: 43) (italics in the original).

The idea that there are no citizens in Japan, that there are only residents of specific

neighbourhoods, or there are just groups of people who are affiliated with their companies,

schools, clubs, and families is contested and is still a controversial issue (Smith 1983: 127;

Knight 1996: 225). It is not an established fact that Japan lacks every element of civil

society. Garon (2003) argues that there have been many signs of civil society emerging in

Japan in its history, however, civil society in Japan has been less vigorous, and the state often

retains the power and authority to oversee the activities of civil society. Many Japanese

scholars characterize "the strong state and weak civil society" (Masuda 1957; Johnson 1995;

Knight 1996; Sorensen 2002) as one of the unique features of Japanese postwar development.

Therefore, city planning in Japan is commonly understood as state interest enabling

activities. Planning from above has been so strong that the development of citizen's interests

and activities has been inhibited. As a consequence, people remain disempowered and

dependent on the government. Sorensen (2002) describes such unique features of Japanese

urban planning processes and systems:

> To an extraordinary degree, however, early planning developments in Japan
> were the work of a small group of elite bureaucrats in the Home Ministry,
> professors at the University of Tokyo, and a few others. A fully developed
> city planning system was created based on best practice in the West, and was
> then operated as a national system, carried out by local governments under
> the direct and close supervision of the national ministry. This imposition of
> city planning from above has continued to shape attitudes towards city
> planning to the present (ibid: 337).

To summarize Japan's urban planning in relation to the state and civil society: first,

the state has power to control its people; second, the government administration is rather

centralized and top-down; third, local government is relatively weak; fourth, larger

corporations and businesses are protected by the state; fifth, city planning has often served

state interests of economic development; and sixth, there is little history of social struggle for civil society. As many Japanese scholars argue, the Japanese central government has been effective in pursing economic development focused practices which undermine, to some degree, further enhancement of civil society, yet such approaches have certainly benefited the people in Japan greatly by providing standardized material wealth, infrastructure and transportation, education, health, and overall public services. It is important to note that even though the Japanese government's planning process is still highly top-down and bureaucratic, it has laid out the critical foundation to help enhance Japan's community capacity building.

3.3.2. Emerging Volunteerism in Japan

Although Japanese citizen activities may be relatively weak, they are not non-existent. So, what are some of these activities in Japan? Volunteerism, a citizen activity that has gained considerable attention, is fairly new in Japan. Preoccupied with post-war reconstruction, it was not until the early 1970s that Japanese citizens were able to have more time for themselves (Honda 1993) to participate in the public realm. In the 1980s, organized citizen groups grew gradually as the public witnessed the inadequacy of government services and recognized the need to supplement them. By the 1990s, discussions about citizen's public participation as an important part of citizen activities were given serious attention, which formed a foundation for the legitimate status of citizen activities. In response to growing numbers of individuals organizing as non-governmental, non-profit, and local issue

oriented groups, on December 1, 1998, the Law to Promote Specified Non-profit Activities—

commonly known as the NPO Law (*Tokutei Hi-eiri Katsudo Sokushin-ho*) was put into effect

(Mochizuki 2002). By February 28, 2003, over 10,000 groups had registered as NPOs. The

number continued to increase and as of February 28, 2007, 30,619 groups were recognized as

NPO groups by the Japanese Cabinet Office[6].

The voluntary activities conducted by these organizations have often been associated

with the fields of welfare, public health, and education, particularly in programs promoted by

the local governments. The nature of voluntarism in Japan seems to be more of a complement

to local government activities than a charitable contribution, or pursuit of purely individual

interests. Honda (1993) argues that voluntarism in Japan is therefore people's participation in

governmental programs as a part of their roles as citizens. Through volunteering in the

government's daily operations, people participate in community building and take

responsibility to assist in local problem solving. One of the reasons why it is difficult to

distinguish between citizens' participation and the local government service is because there

is little discussion of how well individuals and groups have developed their independence,

autonomy, and self-governance in relation to the state (Knight 1996).

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[6] http://www5.cao.go.jp/seikatsu/npo/data/pref.html (access date: 02/28/2003), http://www.npo-homepage.go.jp/data/pref.html (access date: 04/10/2007).

According to John Knight (1996), the distinction between private and public is blurred in Japan because people truly believe that the state represents them and they represent the state. He further argues that "the point is that there exists a chronic inability even in postwar Japan to imagine a public realm separate from, or independent of, the state. . . As a result of this absence of countervailing institutions, the state continues to dominate the public realm" (Knight 1996: 224). Instead of independence from the state, people in postwar Japan identify themselves in affiliation with various kinds of groups such as their companies, neighbourhoods, schools, clubs, and families. This "groupism" demands high group commitment among Japanese, and for them, "one's actions will reflect on one's group" (Smith 1983: 127). "In a 'group-oriented society' like Japan, therefore, order in public space is not a function of public norms strictly speaking, but of the power of particular group norms to regulate public space" (Knight 1996: 225). The low crime rate in Japan is one of the positive sides of this group-centeredness. On the other hand, according to Knight, a negative side is:

> This intensity of partial attachments (particularly those of company affiliations) in Japan is seen to preclude any significant commitment to the public domain beyond. Japanese society, as a consequence, is marked by a dearth of voluntary activity, low standards of public behaviour, and contracts which lack a binding quality (Knight 1996: 225).

Under these historical and cultural circumstances, it was difficult for anyone to predict that more than 1.3 million people in total would participate in volunteer emergency relief efforts after the Kobe earthquake. When the earthquake hit the Kobe region on January 17, 1995, massive numbers of volunteers were gathered and soon they were organized as groups and organizations to increase efficiency in providing disaster assistance. Many scholars agree that this emergence of non-governmental organizations has become a

triggering event for the re-birth of civil society in Japan (Sorensen 2002; Takayose 1999a; Tatsuki 1998, Edgington 2003). How these volunteer movements will influence the existing relationship between the state and civil society in the future is still unknown. However, these voluntary organizations have certainly contributed to supplementing the government's services, and reaching out to satisfy the survivors' diverse daily needs.

Since the Kobe earthquake, volunteerism has become very popular and commonly accepted. Whenever there is a disaster or tragic event around the world, volunteers do not hesitate to go and help. Being involved in volunteer activities like this—emergency response types of activities—has not traditionally been a common form of voluntary activity in Japan. However, people in Japan have spent a fair amount of their time doing non-paid/ voluntary activities for many years in other realms, such as neighbourhood associations, PTAs, baseball clubs, women's clubs, senior's clubs and so no.

Japan has a long tradition of local voluntary organizations such as neighbourhood associations with remarkably high participation by the residents, which leads some researchers to argue that "Japan has always had a strong civil society" (Curtis 1997: 141). Widely spread all over Japan, community-driven, and with high membership, neighbourhood associations are one of the unique community characteristics of Japan. Most Japanese scholars agree that neighbourhood associations (NHAs) represent high social capital (Fukuyama 1997; Pekkanen 2003; Tsujinaka 2003; Sorensen 2002 and 2007) and those who argue Japan's high social capital, often point to this as a sign of civil society. Pekkanen (2003) however argues that the roles of neighbourhood associations are dissimilar to those that Western societies have embraced as the roles of community organizations. He claims that the main function of civil society in Japan is not advocacy—effectively influencing

policy outcomes and shaping public opinions (ibid). Moreover, some scholars argue that

neighbourhood associations are often seen as the direct product of government and they may

not be active agents promoting civil society (Konno 2001). To further investigate these

issues, the historical development and current conditions of neighbourhood associations in

Japan are discussed in the next section.

3.3.3. The Historical Development of Neighbourhood Associations in Japan

The origins of neighbourhood associations can be traced back to different time

periods of Japan's history. According to Sato (2003), although their purposes were similar,

there were two different resident associations which evolved in Japan's history. One (often

called *Burakukai*) was created in the Muromachi era (1338-1573) in rural areas to enforce

feudal systems for farmers and fishermen. The other (often called *Chonaikai*) evolved after

the Onin war (1467-1477) in order to maintain law and order for merchants and other

dwellers in the urban areas. In the Edo era (Tokugawa Shogunate, 1603-1867), these resident

associations became more organized and recognized by the authorities as a means of

maintaining and controlling the lives of merchants, retailers, other urban dwellers, peasants

and villagers. One of those associations called a "five-family group (*Gonin Gumi*)," consisted

of five households in a neighbourhood which acted as a unit to take care of each other. The

feudal government used this association to create a system where residents would take care

of neighbourhood problems such as minor crimes, unpaid taxes, or moral issues, by

themselves. Each unit was responsible for their members' conduct and they collectively had

to take the consequences of an individual's action. If one of them was unable to pay taxes,

for instance, somebody in the group had to pay the taxes for them. It was an extremely

convenient system for the Shogunate to levy taxes, prevent crime, maintain sanitation, and mitigate fire or flood risks. Such neighbourhood associations were expected to maintain law and order, enforce rules, and provide moral and ethical support for their members (Sato 2003). "Although it was used principally as a political tool, it did nevertheless develop as an autonomous body of neighbourhood families for the handling of community problems" (Masland 1946: 356).

When the Meiji government reorganized local jurisdictional boundaries in 1940, they brought the idea of this Five-Family Group system into these newly united towns and villages in order to preserve the self-sufficiency of the people's daily activities and production processes (Nakanishi 1997). The system was called, *Chonai-kai*, *Buraku-kai*, or *Jichi-kai*[7], which are now commonly translated as Neighbourhood Associations (NHAs). There were only certain rural areas that recognized the NHAs prior to 1940, but the Meiji government gave legislative recognition to the NHAs and created them nation wide to be utilized under the city and ward level government systems in 1943 (Nakanishi 1997; Masland 1946). The NHAs were well established and played a key role in assisting the central government during the W.W.II period. Soon after Japan's defeat in the war, the system was viewed as a threat by the occupation authorities, and it was abolished in 1947. Although it was officially banned, in practice the system remained. It supported the Japanese post-war period of regional and local community development, and constituted a base for grass-roots movements (Nakanishi 1997).

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[7] Jich-ikai seems to consist of a larger geographical unit, such as a whole elementary school catchment area while *Chonai-kai* can be just one block (cho) of a neighbourhood.

Currently, neighbourhood associations play a central role in organizing social activities at the neighbourhood level. They also assist with the distribution of city government publications, post notices of waste collection schedules, maintain the cleanliness of public spaces, etc. Membership in NHAs is based on the household, not the individual. NHAs are not recognized by Law or even local government ordinances so that the membership is voluntary in principle, yet every household is expected to become a member. The board members, such as a head, deputy, secretary, accountant, and accounting auditor are typically changed every year and members take these roles when their turns come. It is almost compulsory for a household to take responsibility for the different positions in NHAs when their turn comes. Some scholars argue that NHAs tend to retain the traditional decision-making approach, top-down and bureaucratic, which has become unpopular with some residents who are not in positions of power (Tanaka 1990; Nakamura 1990).

The NHA is the most widespread type of group organized by residents. According to Akimoto (1990), the Japanese Ministry of Home Affairs conducted a survey in December 1980 and counted a total of 274,733 NHAs in Japan (ibid: 149). Roughly one third of them, were established before W.W.II. The number of NHAs increased as the population grew, but the growth has slowed down as overall population growth in Japan has declined. In 1992, the number of NHAs was 298,488, and the number actually decreased to 296,770 in 2002 (Hashimoto 2007). The level of participation and activities may not necessarily have declined parallel with the decrease in the number of NHAs, however. Whether every member is an active participant is debatable. Nevertheless, the general level of participation in NHAs has been remarkably high. It is still believed that roughly 90% of the population in Japan are members of NHAs, though the actual participation rates in various neighbourhood events are

not always high (Hashimoto 2007; Pekkanen 2004). As the Japanese population becomes older, a higher number of the members are becoming inactive participants. Moreover, it is almost mandatory to accept an appointment as board member, which requires intense time and energy commitment. Such high expectations have become a huge burden for many households as life styles and preferences in modern Japan have changed. Community life in many areas has consequently gone through major transitions[8] (Hashimoto 2007; Hendry 2003).

The NHAs take care of the full range of community events such as funerals, weddings, cleaning of rivers and streams, and even prevention of crime and disasters to some degree. Other local groups, whose membership overlaps with that of the NHAs, for instance, children's groups, women's groups, elderly or youth clubs, are established with different rules, duties and meetings in order to pursue their different interests and needs. In this regard, community life in Japan is quite busy with many activities and events to participate in, such as seasonal events (new year and summer festivals and sports events), monthly cleaning of community centers and parks, weeding grass and trimming trees in the parks, helping at funeral ceremonies, visiting public clinics for health check-ups, crime-prevention walks at night, lunch or tea services for the senior members in their neighbourhood, distribution of government notices, collection and payment of association fees, and some weekend trips for individuals to get to know each other.

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[8] In my old neighbourhood in Kyoto, the participation by the residents has become lower these days due to the high ratio of the elderly population to younger people. If you are over 70 years old, you are exempted from becoming a board member in most neighbourhood associations. There are also more people who have decided not to become members of NHAs or who have decided to leave their NHAs because they see community involvement as a burden or feel they have better things to do than cleaning parks and chatting with their neighbours.

Besides these activities, if the residents are members of other community organizations they also participate in activities such as baseball games, golf, tea parties, flower arrangement, bonsai arrangement, computer lessons, art classes, and so on (Table 3.1).

Table 3.1: Functions of Japanese Neighbourhood Associations

Activity (based on a survey conducted in a small city, Ueda in Nagano Prefecture)	NHAs that do it (%)	NHAs that consider it a priority (%)
Festivals	85.5	32.3
Athletic meets, sports events	79.0	21.7
Construction and maintenance of parks	39.5	6.5
Publishing newsletters	26.6	5.6
Building or maintaining a community center	83.9	13.7
Distribution of government notices	89.5	16.1
Cleaning of gutters, rivers and streams, roads	91.1	45.2
Preventing illegal dumping	81.5	28.2
Crime prevention, fire prevention	84.7	32.3
Traffic management, traffic safety	69.4	12.9
Travel	31.5	1.6
Funerals and weddings	54.0	3.2
Club activities	75.8	24.2
Study groups	39.5	0.8
Support for children's groups	89.5	26.6
Support for elderly people's groups	83.1	11.3
Support for women's groups	51.6	0.0
Support for youth groups	24.2	3.2
Cooperating with government collections	87.1	10.5
Presenting petitions from residents to local government	84.7	31.5
Support for politicians	25.0	2.4

(Source: Pekkanen 2004: 233)[9]

After the Kobe earthquake in 1995, CBOs have added a new function and activities—disaster management related programs. Kobe City launched projects to encourage communities to participate in disaster management. In 2002, 182 communities in Kobe city signed up for *Bosai Fukushi Komyuniti* (Disaster Prevention and Welfare Community) organized by local fire departments in order to enhance networks among local communities, to practice disaster drills, and to increase communication among residents (Choi et al. 2004).

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[9] The original data was published in 1985.

3.4. Conclusion—Community Development and Disaster Recovery in Japan

In this chapter, community development and Japanese historical and urban development were broadly introduced. A review of Japanese urban development was provided in this chapter to establish the specific context of the two cases, Mikura and Mano communities. To summarise this chapter, *Machizukuri* refers to community planning in Japan that has strong influence from local government. Major challenges for Japanese state planning assisting *Machizukuri* were how to implement policies that reflect and foster citizen participation and decentralization. Japan's widely extant neighbourhood associations and other community-based organizations (CBOs) are leading actors in strengthening the existing capacity of communities and enhancing the *Machizukuri* movement. Although the Kobe earthquake caused many communities to recognize the importance of developing community disaster plans and practice emergency preparedness activities, more studies are needed to identify CBOs' different roles and activities with regards to *Machizukuri* including disaster planning, especially after the Kobe earthquake.

Although many studies have suggested that Japan's state of civil society is not mature enough for the citizens to become active agents for social change, the Kobe earthquake experiences of some communities helped increase public awareness of the importance of residents' participation in community activities which may further enhance Japan's civil society. The unique combination of Japan's circumstances discussed in this chapter, such as economy-driven development, a top-down urban planning approach, weak civil society, government led (heavily involved) community-based organizations, inner-city problems, a long history of NHAs and the recent *Machizukuri* movement have all had a strong influence

on community development practices for communities in Japan including the two case communities studied in this thesis. Although the two case studies—Mano and Mikura communities—have very different community development histories and practices, they share a similar economic, social and political environment. The process of how each community was developed is discussed in detail in each case study in Chapters 6 and 7. However, it is important to note here that this chapter introduced the overall circumstances of current Japanese community development that the Mano and Mikura communities have been influenced by and which result in many similarities. The discussions of the case studies focus on examining specific areas of community development practices that were introduced in Chapter 2 in order to identify their differences (e.g. regarding existing CBOs' conditions and practices, levels of residents' participation, the prevalence of community problem-solving approaches, and the extent and nature of networking practice with local government as well as with others outside of the community). Before exploring the two case studies, in the next chapter the event of the Kobe earthquake is examined and issues revealed in the recovery processes are introduced in order to provide the specific context of the research.

CHAPTER 4 Overview of the Great Hanshin-Awaji Earthquake

4.1. Introduction

The purpose of this chapter is to present an overview of what has happened over the ten years following the 1995 Great Hanshin-Awaji earthquake (thereafter the Kobe earthquake) in order to identify some of the issues that are critical for the research. The impacts of and recovery from the quake are introduced in order to provide "the fact[s]" (Tierney et al. 2001: 22) of the event, such as the damage and losses; the short-term relief efforts; the disruption of the economy and of urban life and recovery planning. This chapter also discusses other issues relating to "societal process" (Tierney et al. 2001: 22) that influenced the production of or reduction of vulnerability in Kobe, such as local land-use zoning, emergency policy, the condition of the housing, the population density and distribution, and the development of voluntary sectors, including CBOs. Through such discussion, some gaps in the existing literature and empirical data are identified in order to further clarify the research questions with respect to the case studies in the latter part of this thesis.

Some Japanese scholars claim that the reason why this earthquake was so destructive is related to the way Japan was quickly reconstructed after World War II (Ishida 1996; Takayose 1999a). Rapid reconstruction led to poor development, especially the neglect of inner-city revitalization (e.g. revitalization of housing, public services and facilities, and updating of building codes and land use planning for the purpose of improving local community living conditions) in order to focus on public infrastructure, such as highways, transportation, and large scale projects for the purpose of economic development (Miyamoto

1996c). Some of these neglected inner-city areas had not been affected by World War II and were left as they were, becoming extremely vulnerable (Miyamoto 1996b; Wisner et al. 2004).

Critics argue that the Japanese political systems—seen as top-down, centralized, and bureaucratic—impeded emergency services and personnel from responding effectively (Miyamoto 1998; Tierney and Goltz 1997). The government's decision-making process has often been inflexible and centralized. For instance, after any disaster the local government has to request emergency rescue assistance from the central government. The emergency rescue assistance would only be granted if local government could report the extent of the damage to prove the state of emergency. This process caused a critical delay in efforts to save scores of people trapped under crushed houses in Kobe in January 1995 (Yasui 1997). A government study suggested that 4,461 people (69% of the total death toll) died within the morning of the earthquake (Hyogo Prefecture 2002). The remaining deaths occurred in the next couple of days or so and could have been avoided if there had been faster emergency response systems (Nihon Jutaku Kaigi 1996).

While trying to find who and what to blame for the massive losses from the earthquake, researchers, practitioners, volunteers and survivors all still agree that local governments as well as neighbours, community-based organizations (CBOs) and volunteers played a crucial role in recovery efforts (Miyamoto 1998; Sazanami 1998b; Tatsuki 2002; Choi et al. 2004). Overall recovery efforts and accomplishments by the government have been remarkable. The national and local governments were able to restore most lifelines within six months, and took charge of debris management and other reconstruction projects at the public expense. This could be a prototype for developing future disaster plans (Niino

2006). However, some recovery issues still remained to be dealt with, especially at a

community level in order for the affected communities to achieve further recovery from the

earthquake.

4.2. The Impacts of the Earthquake

4.2.1. General Background

The Great Hanshin Earthquake, measuring 7.3 on the Richter scale, hit the Hanshin

area, a major industrial district in Japan, at 5:46 am on January 17, 1995 (see Figures 4.1 and

4.2).

Figure 4.1: Area of Magnitude and Epicentre
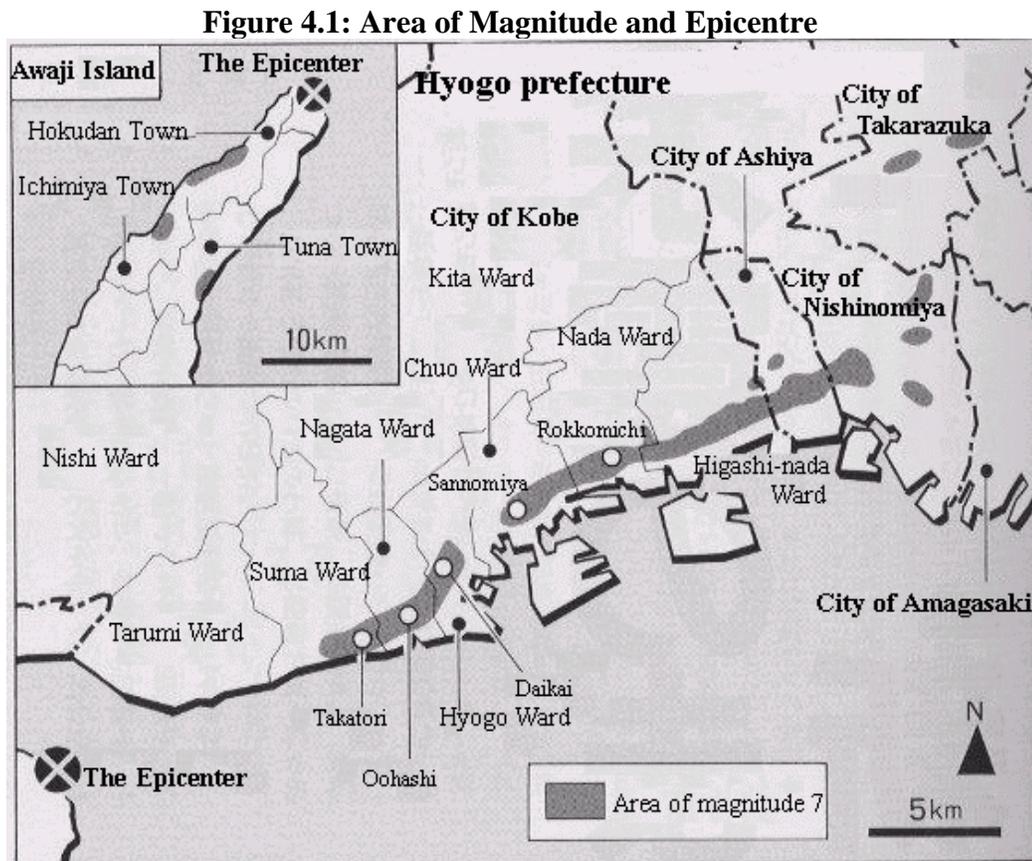
(Source: Kyodo News: 02/08/1995[10])

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[10] http://www.city.kobe.jp/cityoffice/15/020/quake/saiken/uk/sub1-1.html

Figure 4.2: Map of Japan

N

Epicentre of
Earthquake

Kyoto

Hyogo Prefecture
(Kobe City)

Tokyo

Osaka

Awaji Island

0   100   200   300km
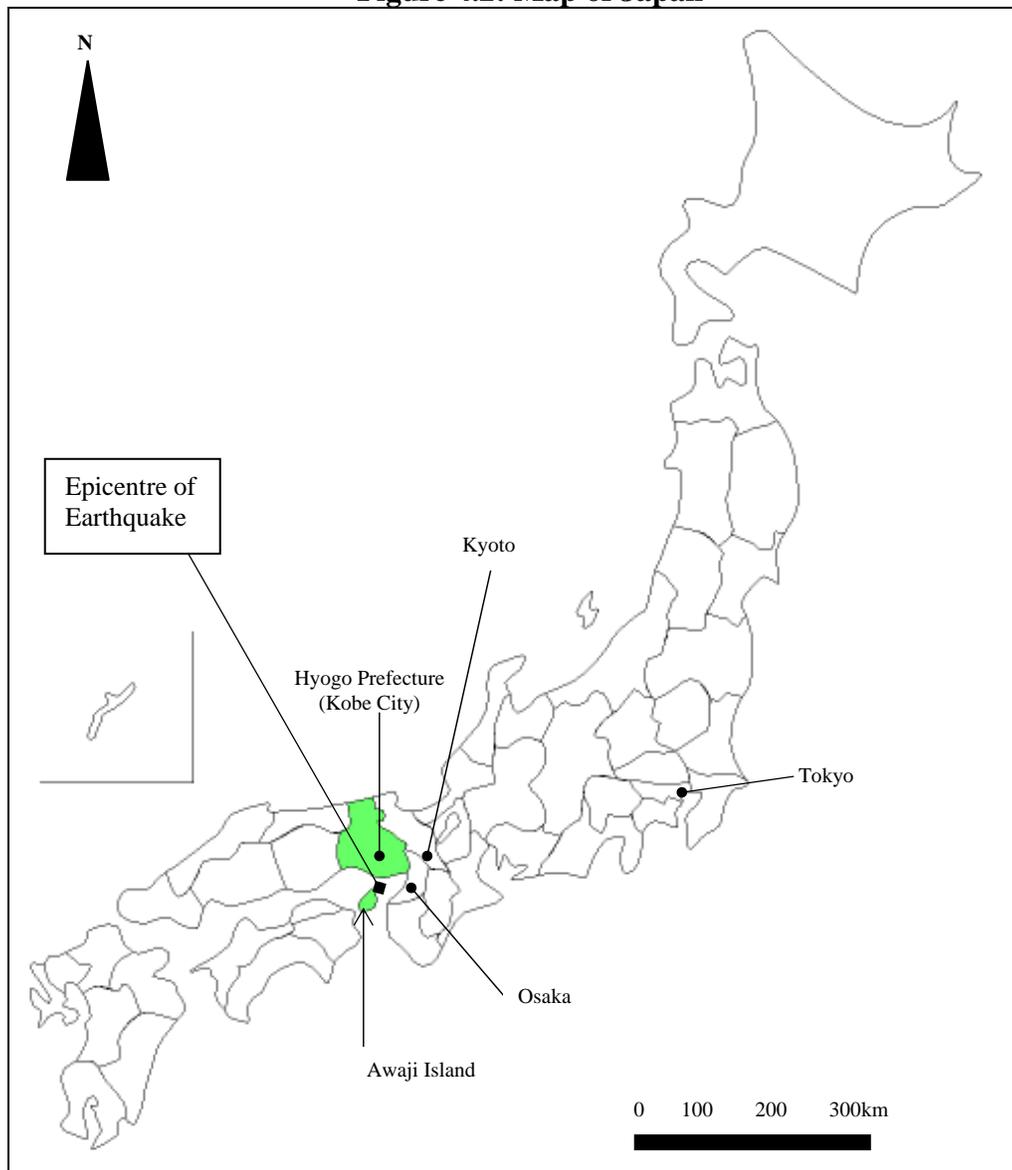
As a result of the earthquake, 6,434 people were killed, three people were reported

missing, and 43,792 people were injured (as of 05/19/2006) (Fire and Disaster Management

Agency 2007). As many as 320,000 people were left homeless. More than 245,000 houses

were either completely or partly destroyed. Material damage was estimated at around 10

trillion Yen (roughly 83.4 billion US dollars)[11] (Miyamoto 1996b: 7-8)[12]. The Kobe

Earthquake is considered to be the worst natural disaster in Japan since the 1923 Great Kanto

Earthquake (mag. 7.9), which killed 140,000 people in Tokyo and Yokohama. At the same

time, the Kobe earthquake was "one of the most expensive natural disasters in history" in the

world (New York Times 1/22/95: S1-1).

This great earthquake mainly affected the Hanshin area, which consists of Hyogo-

ken, Osaka-fu, and Kyoto-fu[13] (see Figure 4.2). As one of the major urban centers of Japan, it

has a total population of 14 million people (Statistics Bureau 1995: 40). Hyogo prefecture is

located about 450 km southwest of Tokyo and had a population of 5,520,397 (as of

10/01/1994) at the time of disaster. This prefecture consists of Kobe, a major urban center in

Japan with a population of 1.48 million, Nishinomiya, Ashiya, Amagasaki and 17 other cities,

and 70 towns and villages. It was in Hyogo that 99% of the fatalities occurred (National Land

Agency 1996: 5). The analysis of this earthquake for this thesis therefore focuses on Hyogo

Prefecture, particularly on Kobe City (see Table 4.1 and Figure 4.1). Table 4.1 shows the

scale and damage of the earthquake.

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[11] US$1 = 118.62 Yen (as of 07/30/2007)

[12] Hyogo Prefecture estimated the damage in Hyogo prefecture at 9,926,800,000,000Yen (Hyogo Prefecture 2002).

[13] *-Ken* and *-fu* refer to prefectures similar to provinces or states in other countries.

Table 4.1: Scale and Damage of the Great Hanshin Earthquake

Occurrence time	5:46:52.0 17 January 1995 (local time) 20:46:52.0 16 January 1995 (GMT)
Magnitude	7.3 (Richter scale). VII (Japan Meteorological Agency [JMA] scale)
Epicentre	34º 36.4' N, 135º 2.6' E (about 15 km to the southwest of Kobe City)
Focal Depth	14.3 kilometres
Stricken Areas	Cities of Kobe, Amagasaki, Akashi, Nishinomiya, Sumoto, Ashiya, Itami, Takarazuka, Miki, Kawanishi and towns of Tsuna, Awaji, Hokutan, Ichinomiya, Goshiki, Higashiura, Midori, Nishitan, Mihara and Nantan in Hyogo Prefecture, and other areas of Hanshin region (Osaka city, Kyoto city, and Hikone city).
Deaths [*]	6,336, with 83.3% from crushing, suffocation, and sudden shock; 12.8% from fire. 3.9% died of other related illness. Eight were confirmed quake-related suicides (as of the end of 1995). On May 19, 2006, Fire and Disaster Management Agency updated the death toll to 6,434.
Injured	43,177
Missing	3 (as of May 19, 2006) (Fire and Disaster Management Agency)
Homeless	300,000 (at the peak)
Total Damage	About 10 trillion Yen (US$ 83.4 billion) (as of 1996 estimate)
Buildings	215,000 homes and other buildings destroyed or badly damaged; 4,700 less severely damaged.
Highways	Hanshin Expressway, the major artery between Osaka and Kobe, collapsed in five places. Bay Coast Highway in Osaka collapsed for 600 meters of its length.
Railroads	Lines for high-speed bullet trains damaged in 36 places in 90-kilometer stretch.
Port	Quake threw cargo containers into sea and toppled giant cranes.
Utilities	1.3 million households lost water, 860,000 lost gas, 2.6 million lost electricity. Quake cut 300,000 telephone lines.

[*] The number of deaths has changed over time. It has become more and more difficult to determine the direct cause of death. Although it depends on the source, most sources consider 5,502 deaths to have been directly caused by the great earthquake. About 800 deaths are considered to have been "related deaths."
(Source: UNCRD 1995: 15; Miyamoto 1996c; Fire and Disaster Management Agency 2001 and 2006; Hyogo Prefecture 2007: 1)

4.2.2. Economic Impact

"The present concentration of business, housing and economic functions in Kobe is the main reason that damage was so enormous" (UNCRD 1995: 193). The cost of damage in the Great Hanshin Earthquake was estimated at about 10 trillion Yen (as of 1996) (US$83.4 billion)[14] (Table 4.2).

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[14] US$1 = 118.62 Yen (as of 07/30/2007)

Table 4.2: Assessment of Earthquake Damage and Distribution

(100 million Yen)	Hyogo Prefecture	Outside Hyogo Prefecture	Total	%
1. Life System	57,149	1,114	58,311	58.3
Houses	20,056	988	21,044	21.0
Household Effects	2,552	126	2,678	2.7
Public Educational Facilities	2,612		2,612	2.6
Public Works Facilities	2,165		2,165	2.2
Matters Related to Agriculture, Forestry & Fisheries	975		975	1.0
Life Line	4,796		4,796	4.8
Sewage Treatment Facilities	41		41	0.0
Matters Related to Commerce & Industry	24,000		24,000	24.0
2. Industrial System	41,668	86	41,754	41.7
Non-Housing Buildings	20,244		20,244	20.2
Harbour Facilities	10,400		10,400	10.4
Freeways	6,000		6,000	6.0
Railroads	3,444	86	3,530	3.5
Communication Facilities	440		440	0.4
Reclaimed Land	64		64	0.1
Public Works Facilities (Road)	1,076		1,076	1.1
Total (100 million Yen)	98,865	1,200	100,065	100.0

(Source: Miyamoto 1996c: 32)

Financial losses were actually greater than this 10 trillion Yen (US$83.4 billion) estimate because the "indirect impact of an economically paralyzed Hanshin region through disruption of distribution and the like would further add countless billions to the damage bill" (UNCRD 1995: 194). The estimated cost of the ten-year reconstruction plan was calculated at approximately 17 trillion Yen (Miyamoto 1996c: 32). Most of this cost was covered through national and local debts and loans from the banking agencies which no doubt tightened Kobe's financial situation (Hyogo Prefecture 2006b).

The Port of Kobe was one of the major port towns in Japan until the earthquake severely damaged the port facilities. Chang (2000) argues that even though the physical damage to the port was repaired relatively quickly, the Port of Kobe lost much of its global market share as well as domestic competitiveness to other ports in Japan. This market share and competitiveness has been very difficult to regain. The long-term consequences for the

Port of Kobe could be very serious and it may never be able to regain its pre-disaster level of activity. Chang asserts that "Kobe demonstrated that pre-disaster mitigation or preventive action provides the best option for dealing with seismic risk" (2000: 63).

Large corporations and businesses have enough stock to recover by themselves in a relatively short time frame; however, damaged local small businesses have been threatened with bankruptcy. Prior to the earthquake, Kobe city was one of the major production sites for rubber shoes. This industry consisted of more than 500 small factories in Kobe city. After the earthquake, 90% of these factories were partially or completely destroyed, and 80% of the small factories in Kobe could not continue in business after the quake (Fukui 1996: 283). The estimated damage for the Kobe rubber industry amounted to about 300 billion Yen. The total number of employees from this shoe industry was estimated at about 50,000, which means most of them lost their jobs from this disaster. Sake brewing, which is another major local industry in Kobe, also suffered severe damage, estimated at over 100 billion Yen. Many of these shoe and sake factories had to go out of business because of the severe damage. The number of business owners in Hyogo prefecture who decided to close their businesses in 1996 was twice as high as the number for the rest of the nation (Hyogo Prefecture 2006b). The Japan Ministry of Labour reported employment conditions one month after the earthquake. In total, 12,371 people in Kobe received unemployment allowance, which was twice as high as the previous year (Statistics Bureau 1996). Those people who lost their jobs were often part-time employees because for most companies, keeping on full-time workers was all they could afford. Wage-workers, who worked for companies that were too small to afford to make payments into the national welfare system, experienced the toughest situation since they could not even receive unemployment allowances (Fukui 1996). Overall, the

economic impact of this earthquake on the disaster affected regions was severe, and most

affected areas of the economy have not yet returned to their pre-disaster levels as of 2005

(Hyogo Prefecture 2006b).

4.2.3. Damage: Fragile Urban Infrastructure

After the quake, 104,004 homes were completely destroyed (182,751 households),

and 136,952 were partially destroyed (256,857 households). About 7,035 of these homes

were completely burnt down and 89 of these homes were partially burnt (Hyogo Prefecture

2007: 1). As many as 13 major public and private transportation lines were interrupted. Most

of them took more than two months to be restored. Roads and highways were in rubble

(Figure 4.3), and their reconstruction has still not been completed. About 1,230,000

households had to live without water until the end of February, 1995.

Figure 4 3: Hanshin Highway
(600 meters of highway collapsed)

(Photo by Asahi Shinbun)

Eight sewage treatment facilities, which serviced more than 1 million people per day, were unable to function. It was not until the beginning of June, 1996, 19 months after the quake that most of the facilities were operational again (Hyogo Prefecture 2007).

Following the quake, the electric power system was interrupted. The black-out affected around 2,600,000 households. On the sixth day after the quake, electricity was finally restored. Another serious consequence was broken gas lines. About 850,000 households could not use gas for heating and cooking until the beginning of April, 1996. Also, almost 290,000 phone lines were cut off on the day of the earthquake (National Land Agency 1996: 8-27). These lifelines—water, sewage, electricity, gas and phone facilities, public and private transportation, roads, and highways—are basic necessities of urban life. In the immediate aftermath of the quake, due to the destruction of lifelines, many survivors had to evacuate from their homes even though their homes were intact and safe to live in. It was a lesson for most people that without these urban systems they could not sustain their daily activities, and once these systems collapsed, they were helpless. After this earthquake, the word "lifeline" became a very familiar one for most people in Japan.

Because the earthquake struck in the early morning, most people were still in bed or at least at home. It can be said that more than 90% of the people who died were at home. Ironically, "home," where people were supposed to be surrounded by a secure and peaceful environment, turned out to be the place where most of the people died (Hayakawa 1996: 14-15). One of the reasons was that many of the homes were prone to collapse. This was in part due to the fact that since the Hanshin area has been more often exposed to typhoons or *tsunamis,* the disaster prevention plan had focused more on water-related disasters. The

structural design for housing therefore, was meant to "withstand not earthquakes but

typhoons" (The Economist 4/22/95: 7).

> Both the Northridge and the Kobe earthquakes happened in the early hours of
> the morning when most people were asleep. In California, where houses have
> stiff wooden frames braced with sheets of plywood and topped with light
> wooden roofs, the safest place for people during the earthquake was in bed. In
> Kobe, that was just about the most dangerous place to be. (The Economist
> 4/22/95: 7)

Figure 4.4: Massive Destruction of Kobe Urban Area

(Photo by Kobe City)

The death rate was correlated not only with distance from the epicentre, but also with

potential risks and vulnerability of existing infrastructure, buildings and specific locations

which became dangerous over time. Table 4.3 shows the numbers of old houses (built before

W.W.II) that existed in the pre-disaster period in Kobe city.

Table 4.3: Number of Wooden Housing Units Built in Pre-W.W.II in Kobe City as of 1993

	Kobe City	Kobe City Wards								
		Higashi Nada	Nada	Hyogo	Nagata	Suma	Tarumi	Kita	Chuo	Nishi
Total Housing	540,200	74,110	52,100	49,350	50,660	61,370	83,840	63,320	49,910	55,550
% of Kobe Total	100%	13.7%	9.6%	9.1%	9.4%	11.4%	15.5%	11.7%	9.2%	10.3%
Wooden Structure Built Pre-W.W.II	18,110	1,160	2,640	3,780	5,000	1,040	1,150	1,280	1,000	1,050
% of Kobe Total	100%	6.4%	14.6%	20.9%	27.6%	5.7%	6.4%	7.1%	5.5%	5.8%
% of Total Wooden Structure Housing to City and Wards	3.4%	1.6%	5.1%	7.7%	9.9%	1.7%	1.4%	2.0%	2.0%	1.9%

(Source: Statistics Bureau 1993: 198-199)

Although Kobe City as a whole was not necessarily considered an area of high concentration of old dwellings (3.4%) compared to Hyogo Prefecture (5.6% of the housing was built pre-W.W.II period) (Statistics Bureau 1993), a number of old wooden housing units existed there and were at potential risks in earthquakes. Some studies after the Kobe earthquake concluded that the older the wooden structured houses were, the higher the chance of severe damage or complete destruction (Nihon Jutaku Kaigi 1996; Hirohara 1996). Also these old buildings were distributed unevenly. 5,000 housing in Nagata ward housing was built before W.W.II. Almost 10% of the existing Nagata housing was considered as old and fragile which was much higher than the average ratio of Kobe city (3.4%). This uneven distribution of older wooden structures versus more modern well-designed houses was one of factors that caused specific areas and communities to become more vulnerable to this large physical event.

4.2.4. Vulnerable People and Communities

This earthquake clearly showed that disaster risks were disproportionally distributed. Elderly and low-income populations were most adversely affected by the earthquake. 53% of those who died in the earthquake were over 60 years old (Miyamoto 1998). Among the elderly population killed in the quake, 65% of the people who died were female. People who were on welfare had a death rate five times greater than people who were not (Mugikura 1996). The disabled, the poor, foreigners, children, and other marginalized groups were particularly vulnerable during and in the aftermath of the disaster. Approximately 70% of households that lived in the temporary housing after the earthquake were low-income households (annual income less than 3,000,000 Yen/yr)[15] (Miyamoto 1998: 46).

Because the earthquake hit the region in the early morning, people were at home. Survival was determined by how well homes withstood the quake since 80% of deaths were caused by crushing or suffocation (UNCRD 1995: 15). Those living in poorly structured wooden houses had little chance of surviving the earthquake. Most of the structurally weak, poorly maintained, old wooden houses predated World War II and were located in the inner-city of Kobe. Consequently, the damage was more severe than other areas and the death toll was higher (Nihon Jutaku Kaigi 1996; Hirohara 1996).

The characteristics of the most severely damaged areas (see Figure 4.1) were: overcrowding, high density of fragile old wooden houses, and concentration of low-income households and the elderly. In those areas, 3,892 people died (70% of the total deaths from

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[15] The average annual income for worker's households in 1995 was 6,849,000 Yen (source: Statistics Bureau & Statistics Center/ http://www.stat.go.jp/english/data/handbook/c12cont.htm. June 3, 2002).

the disaster) (Sazanami 1998a; Miyamoto 1996a). Disparities in recovery among communities have become clearer and greater as time has gone by since the earthquake. In some inner-city areas such as Nagata Ward, only 60% of the population returned (Kobe City 2000a).

4.2.5. The Poor Practices of Disaster Management

In the Hanshin region, regional emergency policy was not adequately designed for large scale earthquakes. The western side of Japan has traditionally been considered an earthquake-free area by most people. In 1596, an earthquake did hit near the same area. Since then, there have been other earthquake reports, but the area has never been seriously damaged (Arakawa 1964). Rather than being prepared for earthquakes, most houses in the Hanshin area were built to withstand typhoons as mentioned in the previous section. Local disaster prevention was designed for water-related disasters. Disaster relief systems were not designed for this type and scale of disaster. There were no emergency shelters which could take care of the 150,000 residents in Kobe. When Kobe developed its local disaster prevention plan in 1986, it proposed to establish special emergency shelters which were supposed to be more than 100,000 m² and have water tanks with a capacity of 100 tons. The city had planned to prepare seven such places, but this plan never became a reality. Instead, Kobe merely assigned 364 public schools as places for disaster shelters (UNCRD 1995: 166).

This lack of preparation contrasts with other major cities in Japan, such as Yokohama city, which created 112 special emergency shelters (Kumano 1996: 45). Kobe, one of the model cities in the country in terms of its economic success, was actually one of the poorer cities in terms of disaster prevention. The failure to build specifically assigned emergency shelters in Kobe had tragic results in the aftermath of the earthquake. After the earthquake,

more than 320,000 people were left homeless, and 1,274 places had to be used as emergency shelters. Over 500 public schools were used by the dislocated. Others without homes stayed at temporarily constructed camps in parks, stayed in their half-collapsed houses, or moved in with their relatives and friends. Others even stayed in the aisles of city halls. "Officially, there are 12 square meters of park area per person in Kobe. But in the center of Kobe, there are only two square meters per person" (Miyamoto 1996b: 11-12). When unexpected events occur, public parks are supposed to function as emergency shelters. But two square meters is only enough space for an adult to lie down in. If the person has any belongings, or needs other facilities (such as a kitchen, bathroom, and so on), two square meters is far too little. But that was the allotted living space for individuals in the temporary shelters after the great earthquake.

Furthermore, the Self-Defence Forces needed a request from the Hyogo Prefectural Governor to dispatch rescue crews. Due to congested telephone lines and the interruption of emergency radio systems, the Hyogo Prefecture Governor could not contact them until 10 a.m. on January 17, 1995—more than four hours after the earthquake. The Self-Defence Forces first officially arrived at around 1 p.m., more than seven hours after the quake[16].

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[16] Some of the Self-Defence Forces had been sent to rescue people a couple of hours after the earthquake. They were sent without the request from the Hyogo Prefectural Governor because there was an exception to the general rule; when the situation is considered to be critical, the Self-Defence Forces can make an independent decision to dispatch as soon as possible (Furumori 1996: 318-319).

The worst disaster in postwar Japanese history caused every urban function to be disabled. Hyogo Prefecture was in crisis and key people there could not make quick decisions. Their requests for help were delayed; their requests for help were inadequate. Not only the relief goods, but also rescue troops took a long time to get to the location of the crisis as a result of the traffic jams caused by the quake. The Self-Defence Forces arrived at the most devastated area almost a half day after the earthquake due to this disruption of traffic flow (Fukumori 1996; Nakamura 2000)

4.2.6. A Key to Survival—Neighbours and Communities

The town nearest the epicentre of the earthquake, Hokudan in Awaji Island, did not suffer as much from the earthquake compared to other cities. Only 38 people died from the earthquake there, and only one third of the homes were destroyed, relatively minor damage considering the town was so close to the epicentre. Only three people per 10,000 people were killed by the quake in Hokudan town (population of 11,248), while 97 people per 10,000 people died in Kobe (population of 1,456,780) (Nishibori 1996).

Hokudan is located on a small island, Awaji Island, in Hyogo Prefecture. Because most islanders were familiar with each other, they knew who lived in which house, and even knew who slept in which room and where. It was therefore not as difficult for neighbours to locate people who were buried under the houses. Also, Hokudan was a rural area where most of the residents were associated with farming which required them to have some tools and equipment. Because most houses were wooden in Hokudan, people could use saws, chain saws and other farming machinery and equipment to remove rubble to rescue the people from their houses. Additionally, most households had wells. Residents were able to get water right

after the quake. Furthermore, only 30% of the households had flush toilets, so most of them did not suffer as greatly as in other areas from the problems and risks associated with the damaged sewage system. Recovery from the quake on Awaji Island could proceed relatively quickly and smoothly because life in such a rural area did not depend on public facilities as much as that of people in urban areas (Miyamoto 1996a and 1996b; Nishibori 1996). Strong community solidarity also contributed to the comparative lack of negative impact of the quake on the island.

In the midst of a harsh and chaotic situation, more than 280 elderly people died in the first two years after the quake in the area affected by the quake (Cabinet Office of Japan 2003b). People call it *Kodoku-shi* or lonely death, because those people died alone (Sato, Yamada, and Ishikawa 1996: 64-65). Relocated disaster survivors had to live in a new environment where they did not have relatives, friends, and previous neighbours to visit them. Nobody knows what really happened to those who died alone. However, Nukata Isao (1999), a doctor who worked at a medical clinic for disaster survivors, suggests that loss of hope was the major cause of death. The absence of community also contributed to "lonely deaths." Moreover, some studies suggest that many of the people who died alone were over 65 years old. These vulnerable people, who lost homes in the quake, were relocated to emergency shelters constructed in remote areas where they had no one to look after them (Nihon Jutaku Kaigi 1996; Sazanami 1998a).

In 2001, the Kobe earthquake survivor, Mr. Nakazono Shoichi, whose restaurant and home were destroyed in the earthquake, submitted 1,942 pages of survey results to Hyogo Prefecture and the City of Kobe. For two years, he visited over 10,000 households in public housing units built for survivors (most of them were low-income elderly people) to ask about

their recovery situations. With his survey results, he requested that the government continue

to support the victims since there was still a great need for socially disadvantaged

populations to receive support to restore their lives after the disaster. Participants told Mr.

Nakazono that they wanted public phones, bus stops, police patrol services, clinics, and small

stores in their housing complexes or near their homes (Mainichi Newspaper 01/17/2001: 27).

These demands are considered basic necessities in any community yet the survivors living in

emergency housing units that government built had to cope without such basic community

infrastructure for years. Housing reconstruction plans were completed with remarkable speed

and efficiency. However, there seems to have been a lack of understanding of the importance

of providing basic facilities at a community level.

4.3. Recovery Activities in the Affected Areas

4.3.1. Overview of the Ten Years since the Quake

Table 4.4 below shows a summary of events and government activities over the last

ten years following the earthquake in 1995.

Table 4.4: Seven Years of the Great Hanshin-Awaji Earthquake

Y	M	D	Events	Government Activities
1995	Jan	17	5:46 a.m. a large-scale earthquake hit the Hanshin-Awaji region, 7.2 on the Richter scale.	At 7 am, the emergency response center was set up in Hyogo prefecture. At 10:04 a.m. the central government declared an emergency.
				Around 10 a.m. Hyogo prefectural governor Kaibara requested aid from the Self-Defence Force.
			Water (1,270,000 households), gas (845,000 households), electricity (2,600,000 households), telephone (193,000 households), major public transportation, roads, highways, and hospitals and clinics were out of service.	
		18		The emergency response headquarters was established in Hyogo prefecture (effective until March 31, 2005).

Y	M	D	Events	Government Activities
		23	Electricity service was restored.	
		24	307,000 people were living in emergency shelters (the peak).	
		31	Telephone lines were restored.	
	Feb	14	The name was changed from the Great Hanshin Earthquake to the Great Hanshin-Awaji Earthquake.	
		15		The Hanshin Awaji Reconstruction Committee was established in the central government (effective until February 14, 1996).
			2,103 households moved into the temporary housing in Kobe city.	
	Mar	15		The Hanshin Awaji Reconstruction Headquarters was established in Hyogo prefecture (effective until March 31, 2005).
		16		Hyogo Prefecture announced a new urban development plan.
		31	The emergency response headquarters was closed.	
	Apr	11	Gas service was restored.	
		17	Water service was restored.	
	Jul			Hyogo Prefecture announced the Hanshin Awaji Earthquake Reconstruction Plan, the so called "Hyogo Phoenix Plan."
	Aug			Hyogo Prefecture announced the "3 Year Emergency Reconstruction Plan" specifically focused on housing and industries (until the end of March 1999).
	Aug	20		Kobe City announced the closure of emergency shelters (public schools, city halls, community centers, and parks) where 6,672 people had been living in 194 sites.
			All railroads were repaired.	
	Sept		Most roads and highways had been repaired (except Hanshin Highway, Kobe line: September 1996 completed).	
	Nov			Hyogo Prefecture announced the "3 Year Emergency Reconstruction Plan" specifically focused on infrastructure (until the end of March 1999).
1996	Mar	31	Most programs for survivors discontinued (*tokureisochi uchikiri*).	
1997	Mar	26	The Port of Kobe was reopened.	
	Aug	1		The Cabinet Office of Japan announced a new policy to assist disaster survivors. "Life support reconstruction funds" started providing assistance to the people who need financial support (*seikatsufukkoushikin*).
1998	May	15		The "Victim Self-Help Fund" Law was established (*hisaishasaikenshienhou*) to assist individuals who were in special need.

Y	M	D	Events	Government Activities
1999	Mar	31	The end of the term for using temporary shelters and housing (*Kasetsu*) constructed at numerous locations in Kobe city (2,700 households remained).	
	Jun	30	The end of the transition periods for people to move out of the temporary housing (*Kasetsu*) (700 households remained).	
	Jul	21	The earthquake fund committee was closed.	
2000	Jan	11	The death toll was calculated at 6,432.	
		14	The last household left the temporary housing.	
	Mar	29	All the temporary housing (*Kasetsu*) was closed and dismantled.	
	Nov			Hyogo Prefecture developed "the Next 5 years Reconstruction Promotion Program" (until the end of March 2005).
	Dec	11	The first case of Disaster Restoration Land Readjustment project was completed. *Kitaku-Fukkou Kukakuseiri Jigyou* (*Shinzen-cho Block 2 North, Nada-ku, Kobe*). (Table 4.5)	
2001	Apr	23	The Metrological Agency revised the size of the earthquake from M 7.2 to M 7.3.	
	Nov		The population of Hyogo Prefecture finally increased above the pre-earthquake level.	
2004	Nov		The population of Kobe City increased above the pre-earthquake level.	
2005	Mar	31		The emergency response headquarters and Hanshin Awaji Reconstruction Headquarters in Hyogo prefecture were closed.
	Apr	1		The Hanshin Awaji Earthquake Reconstruction Promotion Council was established in Hyogo prefecture in order to take over the remaining projects of Hanshin Awaji Reconstruction Headquarters, including completion of a 10 year disaster recovery report (*Fukkou 10 nen Sokatsu Kensho/ Teigen Hokoku*).

(Source: Hyogo Prefecture 2006a and 2007).

4.3.2. The Great Hanshin-Awaji Earthquake Reconstruction Plans

In the post disaster period, Hyogo Prefecture developed a "Hanshin-Awaji Earthquake Reconstruction Plan" (Hyogo Phoenix Plan) in July 1995. Soon after this plan, Hyogo Prefecture announced a "3 Year Emergency Reconstruction Plan" for housing, industry and infrastructure, in order to repair the physical damage from the quake. The

Hanshin-Awaji Earthquake Reconstruction Committee had a 10 year reconstruction period in mind which they divided into roughly three phases.

1. The recovery and reconstruction starting phase (1995 to 03/31/1998): For the first three years of creating and development reconstruction plans and implementing housing, industry and infrastructure reconstruction plans.
2. The early restoration phase (04/01/1998 to 03/31/2000): For implementing the 3 Year Emergency Reconstruction Plan and completing the first five years of reconstruction efforts after the earthquake.
3. The reconstruction phase (04/01/2000 to 03/31/2006): For completing the last five years of the Hanshin-Awaji Earthquake Reconstruction Plan.

(Hyogo Prefecture 2006a: 155)

At the end of the 2006 fiscal year (March 31), the Hanshin Awaji Earthquake Reconstruction Promotion Council was established in Hyogo prefecture in order to continue assisting with the recovery process, including such activities as creating a system to help the disaster survivors, especially the elderly, to develop their independence; promoting re-building of communities; supporting small businesses and industries; and providing further financial support (Hyogo Prefecture 2006a: 5).

4.3.3. Hyogo Phoenix Plan

Six months after the disaster, Hyogo Prefecture announced a restoration plan (the Hyogo Phoenix Plan). It created 660 projects that would need a budget of 17 trillion Yen (US$143 billion)[17] (see table 4.5) by 2005, including symbol projects by the City of Kobe to boost Kobe's declining economy.

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[17] US$1 = 118.62 Yen (as of 07/30/2007).

Table 4.5: The Hanshin-Awaji Earthquake Reconstruction Plan Budgets

Basic Plan	Budget (100 million Yen)
1. 21st century welfare based *Machizukuri*	27,300
2. Building globally and culturally rich communities	4,200
3. Enhancing existing small industries for future sustainability	29,800
4. Creating disaster resistant cities	3,900
5. Developing a multi- metropolitan network system	104,800
Total	170,000

(Hyogo Prefecture 2006a: 158)

A large portion of the budget was spent completing some of the following symbol projects. The Shanghai-Yangtze Valley Trade Promotion Project (China-Asia Exchange Zone/Port Island Second Stage, and New China Town);

1) The Kobe International Airport;
2) The Health Care Park Project;
3) The Hyogo Prefectural Emergency Medical Center;
4) The WHO Kobe Centre;
5) The Volunteer Activities Support Center;
6) Hanshin-Awaji Earthquake Memorial Projects including the Super Convention Center, the Earthquake Disaster Mitigation Research Center of the Institute of Physical and Chemical Research (Miki City), the Asia Disaster Reduction Center (Kobe City), and the United Nations Center for Regional Development Disaster Mitigation Planning Hyogo Office; and
7) The New Industrial Structure Formation Project including the World Pearl Center Project, the Kobe International Communication Hub Development Project, She Town Nagata, the Kobe Enterprise Zone, and the Kobe Medical Industry Development Project

(Hyogo Prefecture 1999; Kobe City 2000a).

These large projects are essentially long term projects, typically requiring a minimum of ten years for completion. Takayose (1999b) argues these large projects would not contribute to local industry and small business recovery from the disaster (ibid: 164). For the reconstruction plan, Takayose continues, Kobe should have developed medium sized projects that could have directly involved local businesses in order to stimulate the local economy. Miyamoto (1996c) and Takayose (1999b) both claim that Japan had adequate financial resources to cover the cost of dealing with the disaster damage, since the direct cost of the

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damage was estimated at 10 trillion Yen, which is only 2% of the nation's GDP. They

question whether creating these large projects would really contribute to recovery of the

affected regions. An evaluation study conducted by Hyogo Prefecture in 2006 shows some

correlation between project completion and the contributions to some areas, such as overall

economy and jobs in the affected region. According to this report, international and

multilateral institutions (e.g. JICA, UNCRD, OCHA[18], and Asian Disaster Reduction Center)

located their offices in Hyogo prefecture. Ten years since the earthquake, 65 foreign business

enterprises moved into Kobe city to participate in the Kobe International Communication

Hub Development Project. The New Industrial Structure Formation Project created a total of

793 jobs (as of 2002). Two hundred and thirty businesses started in various locations in

Hyogo prefecture (Hyogo Prefecture 2004).

4.3.4. The Disaster Restoration Land Readjustment Plan (*Fukkou Tochi Kukaku Seiri Jigyo*)

In March 1995, two months after the earthquake, Hyogo Prefecture and Kobe City

announced the Disaster Restoration Land Readjustment Plan to designate the most severely

affected communities and to re-develop and renew the areas for the purpose of achieving

disaster recovery. In total, 19 projects were created. Among these 19 projects, 13 projects

(total area of 255.9ha) were land re-zoning projects and 6 projects (total area of 33.4ha) were

urban renewal projects (Hyogo Prefecture 2007). Please refer to the details of the projects

listed in the Appendix A.

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[18] Japan International Cooperation Agency (JICA); United Nations Centre for Regional Development (UNCRD); UN Office for the Coordination of Humanitarian Affairs (OCHA).

In March 2007 there were 5 areas for land re-zoning projects which remained uncompleted at time of writing and there were 7 areas for urban renewal projects which remained uncompleted. The Mano community, one of the case studies of this thesis, was not designated for the land readjustment project, while the Mikura community, the other case study community, was designated as a part of Misuga Nishi District Disaster Restoration Land Re-Zoning Project. The Misuga Nishi District project was completed in March 2005 (ibid).

4.3.5. Population Recovery

According to a Hyogo Prefecture study, 146,000 people left the stricken area as of October, 1995 (Hyogo Prefecture 2002: 5). In November 2001, Hyogo Prefecture announced that the population had recovered to the pre-disaster level. Kobe City government also announced that Kobe city's population had reached its pre-disaster level in November 2004. Although the overall population increased to levels higher than those of the pre-disaster period, disparities in population recovery between wards in Kobe city soon became evident and these disparities still persist to this day (see Table 4.6). In Nagata ward, the population had recovered to only 79.4% of its pre-quake population as of February 2007 (Table 4.6). The two case studies in this research are both in Nagata ward where communities have suffered slow population recovery.

	Kobe City	Wards in Kobe City (9 wards)								
		Higashi Nada	Nada	Chuo	Hyogo	Kita	Nagata	Suma	Tarumi	Nishi
Pre-disaster Population (01/01/1995)	1,520,365	191,716	124,538	111,195	117,558	217,166	129,978	188,949	237,735	201,530
Population (10/01/1995)	1,423,792	157,599	97,473	103,711	98,856	230,473	96,807	176,507	240,203	222,163
% of pre disaster population	94%	82.2%	78%	93.3%	84%	106.1%	74%	93.4%	101%	110.2%
Population (10/01/2000)	1,493,398	191,309	120,518	107,982	106,897	225,184	105,464	174,056	226,230	235,758
% of pre disaster population	98%	99.8%	97%	97.1%	91%	103.7%	81%	92.1%	95%	117.0%
Population (as of 10/01/2003)	1,516,155	201,045	125,994	113,087	107,957	224,847	104,490	173,164	224,873	240,698
% of pre disaster population	99.7%	104.9%	101.2 %	101.7%	91.8%	103.5%	80.4%	91.6%	94.6%	119.4%
Population (as of 11/01/2004)*	1,520,581	203,550	127,039	114,736	107,414	225,644	104,077	172,115	223,584	242,422
% of pre disaster population	100.0%	106.2%	102.0%	103.2%	91.4%	103.9%	80.1%	91.1%	94.0%	120.3%
Population (10/01/2005)	1,525,393	206,037	128,050	116,591	106,985	225,945	103,791	171,628	222,729	243,637
% of pre disaster population	100.3%	107.5%	102.8%	104.9%	91.0%	104.0%	79.9%	90.8%	93.7%	120.9%
Population (01/01/2007)	1,529,867	207,378	128,830	119,171	107,258	226,541	103,215	169,730	221,096	246,648
% of pre disaster population	100.6%	108.2%	103.4%	107.2%	91.2%	104.3%	79.4%	89.8%	93.0%	122.4%

* Kobe City announced that Kobe city population reached to its pre-disaster period in November 2004.
(Source: Kobe City 1997, 2003, 2004a, and 2007b)

The Great Hanshin-Awaji Earthquake struck the region when the economy had already begun to stagnate. The earthquake caused 134,000 people (about 56,000 households) to move out of the Kobe area, contributing to a substantial loss in consumer spending for Hyogo Prefecture. According to Inada (1999: 10-11), 50,000 households represents an annual consumer spending of 200 billion Yen. Loss of population means a loss of customers. Inada argues that the decline in consumer spending directly lowered demand for local production

such as foods and garments. Moreover, falling population meant not only a diminishing amount of production, but also fewer job opportunities, and decreased income for individual households (Inada 1999: 11). If the population had rebounded to pre-disaster levels within the first two or three years, it could have made a significant difference in individual household incomes (ibid).

More importantly, rapid population restoration could have helped many small and locally owned businesses to recover from disaster damage (Takayose 1999b: 164). In actual fact, it took six and half years for the population to recover in the stricken area. Small businesses and industries have lost profits since the earthquake and are still suffering or have already gone bankrupt. Hyogo Prefecture did offer financial support for small businesses. Unfortunately, however, many business owners have taken on more loans than they can repay (Takayose 1999b).

In 1997, Hyogo Prefecture analyzed its population loss by comparing the national census of 1994 (October 1) and 1995 (October 1). The analysis revealed that the younger generations (aged 15 to 24) left the stricken areas at a greater rate than other age groups, and accounted for half of the population loss. Furthermore, many of the individuals who had not returned to their homes since the event were tenants of apartments or rental houses. Some of these renters could not return because their landlords did not rebuild the housing whereas others did not return because they could not afford the increased rent of the newly constructed rental units. Many of those were elderly people who lived on their pension income. Additionally, some people left because their work places had relocated outside the stricken areas (Hyogo Prefecture 2001). The two case study communities of Mano and Mikura are representative of these sorts of demographic conditions. Not only have the

populations in the two communities not recovered to pre-disaster levels, but these populations are composed of a high proportion of elderly and low-income residents.

4.3.6. Housing Problems

Over 250,000 houses were completely or partially destroyed. As a result, roughly 170,000 houses became uninhabitable (Takada 1998: 157). Survivors who lost their homes had to find safe places to live. The biggest task for the government was to provide them with new or safer homes as soon as possible. The Kobe earthquake experience illustrates that there are a number of housing issues that need to be dealt with in order to improve the existing housing situation and to better prepare for the future disaster recovery (Hirayama 1996; Comerio 1998; Takada 2006).

Quarantelli (1982) investigated the housing issues in emergency situations and concluded that there were roughly four housing phases: 1) emergency sheltering, 2) temporary sheltering, 3) temporary housing, and 4) permanent housing. As with many categorizations, there is some overlap between phases, and one phase can be longer than another depending on individual household conditions. Regardless, it is clear that emergency survivors eventually need to find permanent housing to settle down in. In past disaster situations this has not always happened. In fact, temporary housing simply became permanent housing for some survivors (ibid.). Housing recovery in the case of the Kobe earthquake was also divided into three or four phases (emergency and temporary sheltering, temporary housing, and permanent housing). The housing recovery plan was designed to provide adequate houses through mass construction of public housing (Takada 2006). Because the government viewed these phases as sequential and expected every survivor to

eventually move into permanent housing, some survivors were forced to leave temporary housing contrary to their readiness to move.

Hyogo Prefecture had to provide temporary shelter or housing for the survivors within the first 3 or 4 months. It was very difficult for the government to calculate how many homes were needed soon after the earthquake. At its peak the number of evacuees was about 300,000 (roughly 100,000 households). City officers asked individual evacuees if they required temporary housing. Through this process, the government estimated it needed to provide 60,000 homes. About 30,000 public homes, including some outside of Hyogo Prefecture, were vacant at that time. The government projected an additional 30,000 newly constructed homes would sufficiently fill demands for safe homes. Later, the government realized the demands for housing significantly exceeded this estimate. Eventually, a total of 48,000 temporary homes were constructed (Sazanami 1996b: 139-141).

Due to time and space limitations, the government had to build some housing in the suburbs. Some of this suburban housing involved large scale housing complexes (400 housing units at 16 locations and 1,000 housing units at two locations—Nishi and Kita Wards, for example) (ibid). These unfamiliar environments were very difficult for the elderly or disabled. In such new sites, stores and other basic services were not located within walking distance. It was also difficult for survivors to develop a sense of community when the housing complexes were so massive. Most of all, the government prioritized people who had special needs (elderly, disabled, or single parents), so that housing complexes filled up with vulnerable populations. Some studies suggest that 62.5% of people who lived in the temporary housing in the suburbs were over 60 years of age (Sazanami 1998b: 148). Moreover inconveniences and unfamiliar locations discouraged survivors from moving in,

and as a result, there were actually 2,300 empty units in these housing complexes (Sazanami 1998b: 141). Three years after the earthquake, about half of the households (23,000) were still living in temporary housing, even though the government provided housing for them to live in for a maximum of two years. Essentially, these people had nowhere else to go. They did not leave voluntarily, but were forced to leave temporary housing.

Kobe City planned to build about 72,000 housing units within three years, and the city was actually able to build more units than they had originally planned. The city built 139,279 housing unit by May 1999 (Kobe City 2000b). These houses were for people who were in temporary housing as well as those who had left the area temporarily (about 140,000 people, three years after the event) (Takada 1998: 157). Because this permanent housing was built where lands were available, most of it was located in the suburbs (see Figure 4.8 and Table 4.7), typically in high-rise buildings. People who used to live in an inner-city area had to relocate, due to the lack of housing in the inner city areas, while people who used to live in a suburb could find new housing close to where they used to live. In the inner-city ward of Nagata, 20,280 houses and apartments were destroyed and only 12,359 were rebuilt. In this ward, 1,393 publicly owned apartments were offered for which 15,103 households applied (Takayose 1999a: 128-129). On the other hand, in the suburban Kita Ward, 714 houses and apartments were destroyed and as many as 21,916 were rebuilt (Takayose 1999a: 128). In some areas, there were adequate amounts of housing available for disaster survivors, while there was a lack of housing in other areas. Such disparities influenced survivors' abilities to return to their pre-disaster location and are reflected in the recovery of population and overall community reconstruction which will be discussed in the two case studies.

4.3.7. Different Impacts and Different Levels of Recovery of Wards in Kobe City

Table 4.7 shows ward levels of impacts from the earthquake and changes after the event. This table illustrates how the different ranges of impacts (deaths, housing collapse, and fire damage) affected the nine wards in Kobe city. The wards such as Higashinada, Nada, Hyogo, Chuo, Nagata, and Suma ward, where the death tolls were relatively high, were the areas with magnitude 7.0 closer to the epicentre which felt the full effect of an earthquake with magnitude 7.3 (Figure 4.1). The total population of Kobe city has increased since the earthquake; however there are still some wards, such as Nagata and Suma for which population recovery has been lower than other wards.

Higashinada, Nada and Nagata wards were severely affected by the earthquake; however, in most cases, Higashinada has been able to return to or exceed pre-disaster levels better than Kobe City and the rest of the wards. This is surprising considering the massive scale of the damage experienced in this ward. Overall, the post disaster number of housing units has now exceeded the pre-disaster level everywhere except in Nagata ward. Although some wards , such as Kita and Nishi wards, made a large increase in their value of manufactured goods shipped in the post-disaster period many other wards are struggling to achieve pre-disaster levels in this respect. According to Kobe City, the large increases in Kita and Nishi wards were due to the fact that many industries moved to the suburbs of Kobe city where Kita and Nishi wards were located (Kobe City 2007a). In Kobe city in general, retail sales have been in decline.

Table 4.7: Comparisons in Kobe City and Wards Pre- and Post-Disaster Period

		Kobe City	Wards in Kobe City								
			Higashi nada	Nada	Chuo	Hyogo	Kita	Nagata	Suma	Tarumi	Nishi
Area (km2)		550.53	30.36	32.4	26.31	14.52	240.71	11.48	28.91	28.02	137.82
Population (01/01/1995)		1,520,365	191,716	124,538	111,195	117,558	217,166	129,978	188,949	237,735	201,530
Impacts	Deaths in the Quake	4,571	1,471	933	244	555	12	919	401	25	11
	Completely Destroyed Housing	74,386	14,014	13,222	6,409	10,473	272	20,280	8,103	1,177	436
	Partially Destroyed Housing	55,225	2,577	5,677	6,658	8,124	3,140	8,295	5,617	8,892	3,262
	Housing Destroyed by Fires	6,965	327	465	65	940	1	4,759	407	1	0
Changes[19]	Population Change[20]	99.7	104.8	100.9	101.7	91.8	103.6	80.4	91.6	94.6	119.5
	Number of Housing Change[21]	116.2	113.1	115.8	120.8	101.3	125.5	91.0	114.9	112.2	153.4
	Manufacture Goods Shipment Value Change[22]	75.2	85.2	40.7	52.4	65.9	283.2	47.6	34.2	38.9	112.7
	Retail Sales Change[23]	85.8	104.7	85.3	74.4	79.4	95.3	62.8	85.8	112.5	99.9
	Number of Establishments Change[24]	82.1	93.1	73.1	86.1	70.2	101.4	61.9	75.6	91.8	110.1
	Number of Employees Change[25]	82.2	97.2	70.8	76.7	71.8	112.0	58.1	74.6	99.2	119.1
	Number of Welfare Recipients Change[26]	165.7	173.1	132.1	159.2	160.1	205.6	111.6	199.6	233.2	308.7
	No of Welfare Recipients in 1994	22,560	1,150	1,695	3,341	3,854	1,817	5,735	2,039	1,908	954
	No of Welfare Recipients in 2003	37,389	1,991	2,239	5,320	6,172	3,735	6,398	4,070	4,450	2,945

(Source: Statistics Bureau 1996; Kobe City 1997, 2003, 2004a, 2005, and 2007b, Hyogo Prefecture 2004; Ministry of International Trade and Industry 1995 and 1998; Ministry of Economy, Trade and Industry 2004)

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[19] Comparing pre-disaster level with post disaster level. Pre-disaster level=100.

[20] Population change between 01/01/1995 and 10/01/2003.

[21] Number of housing change between 10/01/1993 and 10/01/2003. Housing includes existing buildings for housing.

[22] Value of manufacture goods shipment change between 1993 and 2003.

[23] Retail sale change between 1994 and 2004.

[24] Number of establishments change between 1991 and 2004.

[25] Number of employees change between 1991 and 2004.

[26] Number of employees change between 1994 and 2003.

Figure 4.5: Map of Hyogo Prefecture, Kobe City and Wards
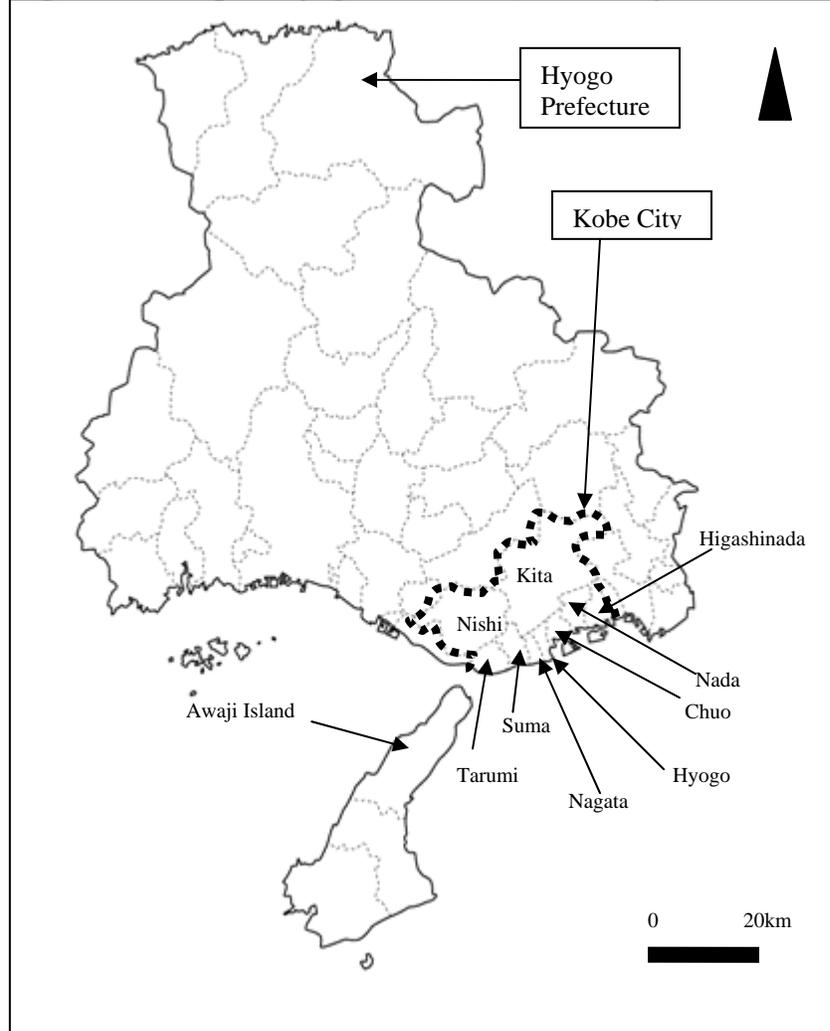
Hyogo Prefecture explained that due to the 1998 completion of the *Akashi Kaikyo Bridge*[27] connecting Kobe and Awaji Island, Tarumi ward benefited from an increase in tourists and business related activities. As mentioned, Kita and Nishi wards—suburbs of Kobe city (Figure 4.5)—experienced an increase in the number of businesses and industries in the post-disaster period, which led to an increase in the number of establishments and

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[27] The *Akashi Kaikyo* Bridge connecting Kobe and Awaji Island was completed in April 1998. It is the world's longest suspension bridge (http://www.jb-honshi.co.jp/english/information/akashi.html) (access date: 05/28/2007).

employees. While most wards saw the return of some of these indicators to pre-disaster levels or higher, Nagata ward's recovery levels in these indicators were lower than pre-disaster levels in that ward as well as lower than the rest of Kobe City. Nagata ward, where the two case studies were located, had a high number of welfare recipients in both the pre- and post-disaster periods (Table 4.7). In Nagata ward, there was a high proportion of low-income households both before and after the quake and this has been a factor leading to a high level of social vulnerability.

4.3.8. Volunteers and NPOs and CBOs—Filling the Gaps between Government Services and People's Needs

The Great Hanshin-Awaji Earthquake awakened a spirit of volunteerism in Kobe and Japan as a whole, creating a renaissance of volunteerism in Japan (Tatsuki 1998). Although people had voluntarily helped victims of previous natural disasters, volunteer efforts were not systematically organized. Moreover, there are some differences in the way these volunteers participate in certain activities. As Arnstein (1969) claims, some people participate in an activity to serve their own interest, while others do so to have some impact on society for change. However, the nature of voluntarism in Japan seems to be more of a complement to local government activities than a charitable contribution, pursuit of purely individual interests, or collective action to gain autonomy (Honda 1993). Although there was some emerging citizen-led approaches to participate in volunteer activities in Japan, traditional participation—complement to local government—was more apparent in the pre-disaster period.

Many scholars recognize the potential of volunteer roles and at the same time argue that it is critical to create organizations (NGOs or NPOs) that can link or close the gaps between government and citizens (Sazanami 1998a; Takayose 1999a; Tatsuki 2002). These scholars were slowly developing ideas on how to better organize emerging voluntary organizations to enhance Japan's civil society even before the Kobe earthquake (Osborne 2003). A committee to create a better environment for non-profit organizations was just about to issue a law for NPOs, when the earthquake hit the Kobe areas. The committee was further convinced by the contributions of volunteers in the stricken areas of Kobe, and in 1998 the NPO Law was issued (Hayashi and Imada 2000; Osborne 2003).

Before the Kobe earthquake, many people went to stricken areas to help the victims without being asked. When Kobe was hit by the earthquake, the city of Kobe quickly sent out a message requesting volunteers through newspapers and T.V. This widespread call for volunteers and the overwhelming response to it challenged the local government who lacked experience in coordinating volunteer relief efforts. The local government and many NGOs attempted to coordinate massive numbers of volunteers coming from all over Japan and the world (Takayose 1999a; Hashimoto 2000).

In the Great Hanshin-Awaji Earthquake, over 1.2 million volunteers conducted a variety of relief activities within the first three months (Sazanami 1998a: 337). After the Kobe earthquake, the committee responsible for developing the law to organize the voluntary sector tried to provide a better environment to enable volunteers to play a constructive role in society (Yamashita and Suga 2002). For instance, the government passed a law that individuals who wanted to voluntarily participate in public service, could take a paid holiday in order to contribute. Yet, volunteerism at this scale is still in the embryonic stage, and

Sazanami argues that the next challenge is to better organize these volunteer groups (Sazanami 1998a: 337). Takayose suggests that it is important to establish organizations that can coordinate people's different needs and volunteers' capabilities to serve these needs (1999b).

Several NGOs and community-based-organizations (CBOs) established before the Kobe earthquake contributed to the local community's recovery, and supported victims' life-recoveries. These organizations played an important role in facilitating individuals' specific needs, particularly for senior residents, such as helping seniors to take a bath, going with them to doctor's appointments, doing grocery shopping for them, visiting them, and providing them with information. Only a few groups became politically active, advocating for the survivors and lobbying the government. These groups have claimed rights for the victims in an effort to procure fair and adequate government funding for the victims.

4.3.9. Roles of CBOs in Another Context

In the case of the Northridge Earthquake (CA., January 17, 1994), many non-profit agencies became very active in assisting low income households and marginalized populations who were not eligible for the Federal Emergency Management Agency (FEMA) assistance or not adequately provided for (Bolin and Stanford 1998). As shortcomings in assistance programs became apparent in the first few months of the federal operation, the Unmet Needs Committee began regular meetings to review cases and match people with alternative resources. While some unmet needs cases were referred back into the federal system, more commonly, cases would be referred to one of the participating CBOs that had available resources in the area of need (Bolin and Stanford 1998: 150). Although these two

earthquakes are quite different in terms of the scale of damage, there are similarities in that there were populations that needed special assistance to meet their needs that had not been provided for by government assistance. In the Kobe case, such kinds of services and organizations are not yet well developed; therefore the actual demand for the services is still unknown. But in the Northridge case, Bolin and Stanford (1998) estimated that roughly 2,000 cases in one year were reviewed by the Unmet Needs Committee (ibid: 150). This suggests that a huge demand may have existed if such services had been available in Kobe. A massive number of volunteers were spread out all over the stricken communities after the Kobe earthquake, and the Mano and Mikura communities both received help from those volunteers. For the Mikura community, a CBO was even established as a result of the volunteer efforts, while the Mano community was able to manage themselves using their existing resources. The different community settings and different impacts from disasters are important factors for disaster recovery.

4.4 Conclusion—Lessons Learnt from the Kobe Earthquake

This chapter outlined the impacts of the Kobe earthquake and introduced the reconstruction efforts taken by local government, such as land-use planning projects and housing. The Disaster Preparedness White Paper in 2000 suggested that the limits of government response were due to its lack of awareness of the complexity of today's disasters. In addition, for the first time in disaster management practices in Japan, rehabilitation of individuals or communities has become an essential issue in truly achieving successful recovery along with effective infrastructure reconstruction. The challenges that the government faces need to be dealt with through understanding the affected communities'

current situations of housing, population, community planning, and socioeconomic development.

Although criticized heavily at the beginning, the central government contributed a tremendous amount to achieve recovery. *Machizukuri* (Japanese community planning) became a popular activity in Japan which benefited both local government and communities by enabling them to increase disaster resistance as well as to create community disaster plans for future disasters. Since the Kobe earthquake, *Machizukuri* (community planning) has become one of the key words in disaster mitigation approaches. Suddenly *Bosai-Machizukuri* (literally, disaster prevention-community planning) became a familiar word for local governments and community organizers who strove to encourage active participation from the residents. In Kobe City, 28 *Machizukuri Kyogikai* (Town-Building Councils) existed before the disaster and 70 new ones were established following the quake in recognition of how important community involvement had become. In total, nearly 400 community professionals and experts were asked to assist in community development between July 1995 and September 1996 (Takayose 1999a: 138). Through reconstruction efforts, both local governments and communities work together to complement their strengths and weaknesses in order to achieve recovery.

The Kobe earthquake showed the importance of preparing disaster management for future disasters, and more specifically, developing a community recovery plan for the purpose of meeting the diverse interests and needs of each community in the affected regions to achieve effective community recovery. To implement such tasks, communities' pre-disaster period conditions, such as community development practices—community organizing and community capacity building—become crucial elements to be integrated

within the disaster planning and practices. As discussed in Chapter 2, successful disaster recovery involves vulnerability reduction; communities need to be aware of their vulnerability as well as identify ways to influence existing vulnerability in order to minimize its impact. Community vulnerability in the case of the Kobe earthquake was identified in this chapter as unevenly distributed and for some communities, both physical and social vulnerability were high due to the presence of old wooden housing, low-income households, an aging population, and inner-city development issues creating high building density, narrow streets, and mixed land use zoning which were discussed as issues in Japan's urban development in Chapter 3. To develop a context for these case studies, Chapter 4 provided the empirical analysis of how Japanese governments and communities responded to the earthquake. It also identified the important roles of local government, *Machizukuri* practices, volunteers, and community involvement. To further improve current approaches to local development at the community level, the two case studies in this thesis provide an increasingly detailed understanding of community recovery from disasters.

CHAPTER 5 Research Framework and Methods

5.1. Introduction

In this chapter, I discuss how to address the research questions that were proposed in Chapter 1. In doing so, I develop a theoretical framework to locate my study. This theoretical framework draws on relevant theories and empirical studies, specifically vulnerability, capacity, disaster recovery, and community development theories, and the studies of Japan and the Kobe earthquake. The literature relating to these topics provides the basis for approaching the case studies that come in the following two chapters. After explaining my conceptual framework, I outline the research methods that I employ in addressing my research questions. I then explain why I chose the case study approach and justify the selection of the cases in question. I also discuss ethical issues involved in my research as well as issues of validity. At the end of the chapter, I briefly discuss how my research data are analyzed.

From reviewing the literature, it is clear that vulnerability reduction is considered one of the important goals of community recovery from disasters. However, reducing vulnerability is a complex task as the nature of vulnerability is inherently difficult to grasp and takes many different forms. In order to achieve a better understanding of the nature of vulnerability, I limit my study in three ways. First, the study focuses on local community vulnerability. Second, the idea of "capacity" is introduced as an alternative way of understanding vulnerability. Third, the term "community capacity" is used to refer to collective efforts to deal with community recovery from disasters. Thus, in these and other ways, this study is exploratory in nature.

Before developing the research framework, the research questions proposed in Chapter 1 are restated.

This research explores the following overarching question: <u>How do community vulnerability and capacity interact in influencing post-disaster recovery at the small scale local level?</u>

The interaction between community vulnerability and capacity and recovery can be explored by examining a series of more specific sub-questions:

1. Within a particular community, what were the conditions of community vulnerability and capacity before and after the disaster? (How can vulnerability and capacity be measured? What are appropriate indicators of vulnerability and capacity? How were the conditions of vulnerability and capacity changed or improved?)

2. If vulnerability was reduced through the recovery process, what were the influential factors that resulted in this reduction during the recovery period? (Who were the key actors and what were the key activities influencing the reduction of vulnerability? Why were the factors influential in reducing vulnerability through the recovery activities?)

3. If the capacity was enhanced, what were the influential factors that resulted in this enhancement through the recovery activities? (Who were the key actors and what were the key activities influencing the enhancement of capacity? Why were the factors influential in enhancing capacity?)

4. If community development was well implemented in a community before the disaster, did the community have a better chance of an effective recovery? (Can good community development practices contribute to long term recovery processes? How

and why did a long-standing history of community development contribute to achieving recovery? How did community development influence the outcomes of disaster recovery? How did a community with poor community development practices achieve recovery?)

5.2. The Theoretical Context

5.2.1. Vulnerability in the Context of Japan—Adaptation and Application of Blaikie et al.'s Vulnerability Analysis Model

As discussed in Chapter 2, Blaikie et al.'s Pressure and Release Model (1994 and 2004) is one way of understanding a community's existing vulnerability to disasters. To develop the specific context in relation to vulnerability to disasters, their model is adopted and adapted here to examine pre- and post-disaster vulnerability conditions in the Mano and Mikura communities. Blaikie et al.'s model was designed to analyze the processes whereby vulnerability is generated. They defined three major factors, root causes, dynamic pressures, and unsafe conditions as basically the processes leading to vulnerability (Wisner et al. 2004: 51-54). According to them, the model serves to illustrate "the ways in which these 'dynamic pressures' operate to channel 'root causes' into 'unsafe conditions'" (Wisner et al. 2004: 54). In other words, in their analysis, vulnerability is generated from 'root causes,' results in 'dynamic pressures,' which in turn create 'unsafe conditions.'

In their second edition of the book "At Risk," Wisner et al. (2004) selected the Kobe earthquake as one of their earthquake case studies. In their analysis, although it was brief, they discussed the social vulnerability of a minority group, *Burakumin* (untouchables), fragile wooden dwellings creating physical vulnerability in the region, the failure of disaster

preparedness measures, community resilience, and volunteer contributions (ibid 2004: 293-300). Their analysis was sound, however, because Wisner et al. had to introduce an overview of the Kobe earthquake, their vulnerability analysis tended to be rather broad, and difficult to apply for a specific small scale community such as a neighbourhood.

To apply Blaikie et al.'s model for my study, the model is used in a slightly different manner in order to focus on identifying the characteristics of small scale community level vulnerability. I use these three large categories (root causes, dynamic pressures, and unsafe conditions) characterized in Blaikie et al.'s model differently to examine a set of factors influencing three different levels and dimensions of vulnerability (state/political level of vulnerability; local/community level of vulnerability; physical/technical level of vulnerability) in my adapted model. Figure 5.1 illustrates how I adopt and adapt Blaikie et al.'s model. "Root Causes" represent factors at the macro level of state and political vulnerability conditions in Japan. The relationship between state and civil society can have a critical influence on creating root causes of vulnerability as discussed in Chapter 3, for the Japanese government often holds most of the power to make decisions regarding national policies, and the capitalist economy orientation tends to undermine local and small scale economic activities (Miyamoto 1998; Takayose 1999a). As a consequence, a power imbalance between central and local governments and local communities can occur throughout development practices. The conditions of "strong state and weak civil society" have been favourable to the Japanese government in regards to achieving its goals in general and it is one effective way to accomplish some aspects of disaster recovery, in particular with regard to reconstruction of infrastructure and lifelines (Drabek and McEntire 2003). However, in terms of achieving community autonomy and independence, conditions of

"strong state and weak civil society" (Johnson 1995) are factors that might negatively affect

the recovery outcomes required to meet community needs and concerns. In other words,

reducing community vulnerability may be difficult if the government uses its authority to

make all decisions because vulnerability reduction is often better considered as a community

issue to be implemented by the community.

Figure 5.1: Japan's Vulnerability Pressure and Release Model

JAPAN'S PROGRESSION OF VULNERABILITY IN PRE-DISASTER PERIOD

1	**2**	**3**		
ROOT CAUSES	**DYNAMIC PRESSURES**	**UNSAFE CONDITIONS**	**DISASTER**	**HAZARDS**
State/Political/ Levels of Vulnerability • Highly centralized government systems and top-down, bureaucratic approaches limiting decision making process and problem-solving practices, • Democracy is ideologically appreciated, but a hierarchical approach still remains • Strong focus on economic development, overriding social and community development • Local economy suffers due to a collapse of bubble economy.	Local/Community Levels of Vulnerability • Land use planning often involves government led activities and little public involvement, limit to community resources, • Insufficient of human asset for emergency event (volunteer activities were not popular before 1995), • Inactive neighbour-hood associations in some areas. • Rapid demographic change, • Special groups at risk (elderly, women, children, foreigners, outcasts, low income house-holds, disabled, etc.) in inner-city areas.	Physical/Technical Levels of Vulnerability • Unprotected buildings and infrastructure (old wooden houses) • High concentration of low income households in inner-cities. • Lack of disaster preparedness especially for an earthquake in Hanshin region. • Inner-city of Kobe city creating physical risks (high density, narrow streets, few open spaces, complex tenancy). • Lack of recovery plans prior to disasters	**RISK = Hazard × Vulnerability** **R = H × V**	Future Potential Hazards Earthquake High winds (cyclone/ hurricane/ typhoon) Flooding Volcanic eruption Landslides

(Adapted from Blaikie et al. 1994: 23 and Wisner et al. 2004: 51)

In my framework, "Dynamic Pressures" are viewed as more directly connected to the processes of the local and community development practices and are therefore considered to be factors influencing local/community vulnerability. Recent demographic trends and existing prejudices towards ethnic minorities and social groups further intensify the vulnerability of special groups at higher risk in communities (Kadooka 1996; Women's Net Kobe 1996; Yano 1996; Ishikawa 2001; Chan-Tiberghen 2004). In these situations there may have been insufficient human capital for emergency events (emergency volunteer activities were not popular in the pre-disaster period, for instance) and some neighbourhoods were becoming fragmented and disorganized.

"Unsafe Conditions" are defined here as Japan's physical and geological conditions or technical and management issues that result in increased physical vulnerability in Japan. Poorly maintained buildings and houses are a good example of unsafe conditions. A lack of disaster management or planning can intensify physical vulnerability as well. Poor building construction practices and evaluation which result in fragile infrastructure are also considered as part of these unsafe conditions. Because I am interested in identifying vulnerable conditions of a community and how they can be reduced, instead of finding the causes and ways in which vulnerability is created, I focus on factors that can help identify community vulnerability and its reduction. In my version of this model, these three factors (state/political; local/community; and physical/technical levels of vulnerability) are considered as acting in an accumulative process to influence conditions of community vulnerability.

Table 5.1 below shows examples of vulnerability indicators that can be used in examining factors and conditions of community vulnerability. Table 5.1 is created in order to

provide a tangible sense of how community vulnerability is assessed in this study. The factors and examples of indicators for each of the factors are drawn from the literatures cited in the previous chapters.

By applying this table, I identify the vulnerability conditions in my two case studies. For example, the demographic trend is one of the vulnerability factors and if there is any population composition change after the disaster, or if there is a change that is making particular groups more vulnerable, then this is an indicator that needs to be included in a refined list in the box titled "Local/Community Levels of Vulnerability" in Figure 5.1 when produced to illustrate the result of the case studies.

Table 5.1: Factors and Potential Indicators of Community Vulnerability

Vulnerability Factors	Community Vulnerability Indicators
Demographic Trend	Presence of high ratio of vulnerable groups (elderly, children, disabled, women, ethnic minorities, foreigners, etc.); negative population growth; rapid population change; etc.
Resource Accessibility	Poor relationship with government or power imbalance limiting community access to resources; community plans not reflecting community needs and interests; lack of skills and knowledge; etc.
Community Autonomy and Social Integration	Ineffectiveness of community development practices (Machizukuri); lack of community services; fragmented and fewer CBOs; lack of awareness of minority groups; etc.
Socioeconomic Conditions	high rate of welfare programs accessed; high tenancy rate; decline in retail sales and manufacture output; etc.
Physical Conditions and Management or Planning to Improve Infrastructure	Narrow streets; high density of population; fewer open spaces; high level of environmental degradation; old and fragile buildings and houses; failure to upgrade building standards and codes; lack of community land use planning and disaster recovery plans; etc.

These lists of indicators are not exclusive to any particular community. They are some basic examples drawn from varied studies in the literature to apply to any community setting and in this study. I apply this table specifically to the two communities in Kobe city to understand in detail the conditions of community vulnerability.

5.2.2. Building Community Capacity—An Alternative Approach

The application and adaptation of Blaikie et al.'s model to the Japanese context is

valuable and meaningful as it helps in understanding what factors are influencing

vulnerability and how those factors have accumulated in Kobe prior to 1995. A problem

arises when vulnerability is addressed at an operational level, however. Thus, Wisner *et al*.

(2004) argue that coping strategies for vulnerability reduction are "people's agency,

ingenuity and abilities to help themselves individually and collectively" (ibid: 120). They

develop a framework to conceptualize people's abilities to cope with their vulnerability.

They call it the "access model" (Blaikie et al. 1994: 46-72; Wisner et al. 2004: 95-123). It is,

in effect, a research framework to explain vulnerable conditions as a lack of accessibility to

resources and it posits that gaining this access is "the means of securing their livelihoods and

maintaining their expectations in life" (Wisner et al. 2004: 112). This "access model" is one

way to understand how households are embedded in a socioeconomic system that may or

may not obstruct a families' ability to access resources. However, their main concern for the

development of the access model is to identify possible accessibility to resources in order to

regain and obtain available resources and their focus is not on vulnerability reduction through

the communities collective actions.

It is very important to recognize that vulnerable people are, to a degree, capable of

taking care of their own vulnerability and such vulnerability needs to be managed by the

vulnerable people themselves using their own capacity as much as possible. At the same

time, it is also critical to acknowledge the fact that the vulnerable are not all capable of and

also not responsible for solving every cause of their own vulnerability from a community

recovery point of view. Collective approaches, therefore, are needed to supplement

individual people's ability to deal with their vulnerability. Other factors (i.e. economic trends, political conditions, previous experiences of disasters) and key actors (i.e. central and local government, CBOs, businesses) play critical roles in vulnerability reduction and that has to be taken into account in order to fully understand how to deal with vulnerability.

Community capacity, therefore, is considered as the collective efforts of the community, and, in this study, capacity is considered to play a critical role in minimizing existing vulnerability. The focus of this study is to understand how communities recover from disaster. Because recovery activities involve vulnerability reduction, in the two case studies I identify how communities have attempted to reduce vulnerability. Instead of identifying causes of vulnerability and finding ways to eradicate the causes, I apply a capacity approach to understand the conditions of vulnerability and how communities deal with vulnerability to further develop my theoretical framework.

In this thesis, capacity is defined as a community's ability and resources that help its members deal with their common problems. Building capacity therefore includes building up a community's skills and knowledge. These skills and knowledge can enhance the community's resources, further increasing its capacity. Resources include natural, financial, organizational, and human assets that can contribute to helping solve problems. Different types of capital, such as social, cultural, human, financial and physical are also considered as capacity when they are used to positively influence community building (Putnam 1995; Buckland and Rahman 1999). Building capacity therefore, includes improving the local ability to assess availability of resources, to utilize existing resources, and to seek potential resources. Table 5.2 below shows an illustrative list of indicators of community capacity based on the studies that have been discussed above and in preceding chapters.

Table 5.2: Factors and Potential Indicators of Building Community Capacity

Community Capacity Factors	Building Community Capacity Indicators
Presence of CBOs	Long-standing efforts of CBOs; high numbers of CBOs in the community; a great diversity of CBOs, etc.
Residents' Participation	Involvement of the residents in diverse types of CBOs; a high level of skills and knowledge they have; any other volunteer activities; strong and effective leadership; etc.
Community Planning Approach and Accomplishment (*Machizukuri*)	Relationships with governments and other influential institutions; activities of Town-Building Council; ways of problem-solving; community organizing processes; outcomes and accomplishment of planning, such as new streets, housing, and parks.
Strategies for Community Planning	Strong and effective ability to recognize problems; ability to enhance awareness; bottom-up approach to community problem-solving; ability to recognize and utilize existing resources and seek potential resources, etc.
Government Involvement	High levels of government involvement; overall good relationship with government; availability of assistance from government; presence of community plans, ordinances or policies; etc.

The list in Table 5.2 will be used to help identify community capacity parameters for the two case studies and to develop my theoretical framework.

5.2.3. Community Development

Chapter 2 suggests that community development practices are an important factor for effective and successful community recovery because good community development in the pre-disaster period can contribute to better disaster recovery. During the recovery period, community-based disaster planning can help meet diverse and complex community needs and interests. Activities of disaster recovery and community planning closely interact with each other. Long-term disaster recovery often emerges from everyday community planning practices over time. Moreover, as discussed in the vulnerability analysis and capacity building sections in Chapter 2, community development practices are critical factors influencing vulnerability reduction and capacity building. To incorporate these ideas and

develop a framework, community development factors and indicators drawn from the

literature above and in preceding chapters are identified in the table below (Table 5.3).

Table 5.3: Factors and Potential Indicators of Community Development

Community Development Factors	Community Development Indicators
Community Functions	Sociability; sharing views and values; mutual aid; organizational base; reflection of individual achievement and status.
Planned Efforts	Community planning (*Machizukuri*); involvement of CBOs and local government; and various activities and events enhancing community resources and assets.
Community Organizing Efforts	Decision making process and problem solving approaches; community activities that can bring people together; mobilize people; solve shared problems; and increase people's opportunities to participate in decision-making processes.
Community Types and Themes of Community Development	Self-help, technical assistance, and conflict resolution approaches; roles of CBOs as facilitator, advisor, consultant, organizer, and advocate; types of objective as process oriented, task oriented and both; and types of groups CBOs are assisting are middle-class, leaders, administrators, the poor and minorities.

Table 5.3 is used in the two case studies in order to understand pre- and post-disaster

community daily activities and planning as factors influencing community vulnerability and

capacity.

5.2.4. Community Recovery

To understand how communities recover from disasters, characteristics of recovery at

the small scale of the local communities are drawn from the literature previously discussed.

Community recovery involves numerous aspects of community activities and their qualities,

such as economic activities generating business and job opportunities as well as physical

improvement involving the health and sustainability of the natural and built environment as

well as community infrastructure. This thesis focuses on recovery with respect to a

community's improved safety and quality of community lives. Community recovery

therefore involves effective emergency response, establishment of appropriate shelters and

housing, fast and smooth population recovery, community recovery planning as well as everyday planning, and a high level of CBO and resident participation and commitments. A list of recovery factors and indicators is identified below to guide the examination of community recovery (Table 5.4).

Table 5.4: Factors and Potential Indicators of Community Recovery

Community Recovery Factors	Community Recovery Indicators
Effective Emergency Response	Effectiveness of community emergency response, evacuation process, government disaster restoration projects, etc.
Emergency Shelter and Housing Reconstruction	A sufficient amount of available house in local communities, available shelters, newly built shelters and permanent houses, etc.
Population Restoration	A balance between the number of people moved out of the community and the number of people move into the community; positive or negative population growth; appropriate demographic trend and gender composition, etc.
Community Recovery Planning	High ability and opportunity for improving existing land use zoning, building standard, and mitigation for disasters for local communities, etc.
Engagement of CBOs	A sufficient presence and involvement of CBOs in disaster recovery activities and in providing leadership and encouraging residents participation, etc.

Like the other three tables (Tables 5.1 to 5.3), Table 5.4 is not a complete set of indicators, representing every dimension of community recovery. These indicators and factors are some examples of community recovery activities. After identifying community recovery factors and indicators (Table 5.4), all four tables (Tables 5.1 to 5.4) are incorporated into a conceptual map developed below (Figure 5.2) as a framework for this study.

5.2.5. Research Framework—Conceptual Map to Organize Key Elements of the Research

To organize data from the case studies, I elaborate the Japan's vulnerability pressure and release model (Figure 5.1) by incorporating four tables developed in previous sections.

- Factors and Potential Indicators of Community Vulnerability (Table 5.1),

- Factors and Potential Indicators of Building Community Capacity (Table 5.2)

- Factors and Potential Indicators of Community Development (Table 5.3)

- Factors and Potential Indicators of Community Recovery (Table 5.4)

Figure 5.1 and Tables 5.1 to 5.4 are drawn from existing literature and empirical data discussed in previous chapters. Based on Figure 5.1, which shows my adaptation of Blaikie et al.'s (1994 and 2004) vulnerability model to examine the vulnerable conditions of Japan, with these key elements (community vulnerability, community capacity, community development, and disaster recovery), I develop a conceptual map (Figure 5.2) to provide a theoretical framework that can help in addressing my research questions.

Figure 5.2: Community Vulnerability and Capacity Model

Community Development
- Community Function (e.g. sociability, sharing, and mutual aid) - Planned Efforts (e.g. community planning/ *Machizukuri*, CBOs and local government, community activities and events); - Community Organizing (e.g. decision-making process and problem-solving approach); - Types of community, CBOs and approaches (e.g. self-help, technical assistance, conflict); etc.

(from Table 5.3)

State/ Political Levels of Vulner-ability

- Top-down decision making processes,
- Narrow develop-ment focus,
- Inflexible policy and practices, etc.

Local/ Community Levels of Vulnerability

- Lack of or inactive CBOs,
- Aging population,
- Low birth rate,
- Local economy in decline,
- Power imbalance with local government, and within the people, etc.

Physical/ Technical Levels of Vulnerability

- Number of fragile buildings,
- Density,
- Narrow streets,
- Fewer public parks and open spaces,
- Poor disaster management, etc.

Building Community Capacity

- Enhanced response capability,
- Human capital to influence policy,
- Disaster planning,
- Utilization of existing resources,
- Involvement of local government and business,
- Improvement of natural environment and housing,
- Insurance, etc.

Disaster & Recovery

Future Potential Hazards

Earthquake,

High winds (cyclone/ hurricane/ typhoon),

Flooding,

Volcanic eruption,

Landslide

(from Table 5.1)   (from Table 5.2)   (from Table 5.4)

As highlighted in Figure 5.2, in order to address my research questions, the following key elements of the pre- and post-disaster periods for disaster recovery—community development, local/community levels of vulnerability, physical/technical levels of vulnerability, community capacity, and recovery—are the focus of my two case studies. In the pre-disaster period, how the two case study communities developed in relation to their vulnerability and capacity is examined (in Chapter 6 and 7), while in the post-disaster period,

how communities dealt with disaster recovery over the years 1995 to 2005 in relation to their vulnerability and capacity is also examined. Figure 5.2 is a schematic diagram representing the framework of my research.

As discussed, community capacity is considered an influential factor in vulnerability reduction. Community capacity (Table 5.2) is placed in the model (Figure 5.2) as a sort of "filter" or "buffer" to influence existing vulnerability. Community development practice (Table 5.3) is a way of building community capacity, and influencing existing community vulnerability (Table 5.1) as well so that community development is placed in the model to suggest its influence. Community development is defined as "a planned effort" that involves community organizing, community planning, and evaluation and monitoring (Green and Haines 2002). It is important to note that all community development practices can contribute to reduction of vulnerability at the same time; they can, however, sometimes create more vulnerable conditions for communities (Hewitt 1983; Burton et al. 1993; Varley 1994, Blaikie et al. 1994). Immediately after a disaster, various recovery efforts take place. How a community manages recovery processes is examined by identifying conditions and levels of various recovery factors and indicators listed in Table 5.4.

Although vulnerability is generated through complex and diverse processes, this study focuses on community levels of vulnerability and therefore, state/political/socioeconomic levels of vulnerability (e.g. issues of economic development focus, and top-down decision making process) are not fully included in the examination of the interaction between community vulnerability and capacity. It must be acknowledged that state levels of vulnerability are factors in overall vulnerability, however, that is not the focus of the present study. The important roles of state and local governments are discussed in the context of

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local community—how they interacted with each other, or what kinds of resources were available to the local communities. Moreover, while natural hazards as the other end of the "Pressure and Release Model" are a critical element of how disasters actually occur, different types of natural hazards or geological issues are not discussed in this study.

5.2.6 Anticipated Results

Based on the literature review, some potential results of application of the framework developed above can be anticipated. In order to highlight these results, four theoretical arguments are restated here. First, the less vulnerable a community is, the less disastrous a hazardous event becomes for the community (O'Keefe et al. 1976; Blaikie et al. 1994). Second, community capacity can reduce or minimize vulnerability (Anderson and Woodrow 1989; Blaikie et al. 1994; Moser 1998). Third, the more a community can resolve or address existing community problems (higher community capacity), the more successful the community recovery will likely be, and the safer and better the community becomes after the disaster (Haas et al. 1977; Mileti 1999; Wisner et al. 2004). Fourth, the better the community development practices prior to the disaster, the better the chance for a community to achieve smooth and fast recovery (Haas et al. 1977; Schwab et al. 1998; Murosaki 2004).

Based on these statements, the following results can be anticipated when the research framework is applied to analyze the two case studies: Well-established community development and active capacity building practices are important conditions for a community to minimize vulnerability. If such development and capacity building activities are achieved before a disaster, the community can mitigate its existing vulnerability in advance. If they are achieved after a disaster, the community can successfully achieve disaster recovery and

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become a safer and better community than it was before. If a community has created a

disaster recovery plan in advance, the community can achieve a faster and smoother

recovery.

In summary, the research results are anticipated as follows; high community

vulnerability, poor community development and low community capacity will likely result in

poor disaster recovery. On the other hand, low community vulnerability, good community

development, and high community capacity, will likely result in effective community

recovery (Table 5.5).

Table 5.5: Relationship between Vulnerability, Capacity, Community Development and Recovery

Community Vulnerability	Community Development	Community Capacity		Community Recovery
High	Poor	Low	=	Poor
Low	Good	High	=	Effective

These are hypothetical results representing very simple outcomes, which are the

potential extremes and may not reflect the real world situation. In the data analysis section

(5.3.5) below I discuss how the framework is used to analyze the data and how the analysis is

conducted in such a manner as to produce results that are well supported by both qualitative

and quantitative data from the various empirical studies and research findings.

5.3. Research Methods

5.3.1. Case Studies

In order to address my research question: "How do community vulnerability and

capacity interact in influencing post-disaster recovery?" I need to examine the specific

community vulnerability and capacity conditions before and after the disaster. The nature of

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my study is exploratory. My goal is to investigate the conditions of vulnerability and capacity, to determine if there is indeed a relationship, and to establish how this relationship could be further explored in future studies. Moreover, while vulnerable conditions can be identified quantitatively and qualitatively, to achieve a more specific focus and to allow a more nuanced approach, in particular because there are some non-quantifiable conditions of community vulnerability, I chose predominately qualitative approaches to the case studies. The benefit of the case study approach is that it allows for detailed examination of social phenomena. The case study method is also particularly appropriate for exploratory studies or the hypothetical developmental stage of research (Neuman 2000).

Two case studies have been chosen to address my research question. One case, the Mikura community, was chosen because the community was considered to be one of the most severely damaged communities and there were very few resources for recovery (e.g. CBOs, leaderships, funding, and skills and knowledge for emergency policies) available at the time of the emergency (Suga 2002; Olshansky et al. 2006). Furthermore, the community was not equipped with any emergency plans and facilities prior to 1995. The Mikura community would help to address my hypothetical question: "If a community was poorly organized and developed in the past, is it difficult for it to achieve recovery from a disaster?" The Mikura community itself is unique and its experience may not be considered sufficiently representative to serve as the basis for a generally applicable model. To increase the insights from this study, another case community has been chosen to compare with the Mikura community case. A comparison of the two serves to increase the confidence in the data and analysis, as well as to identify the limitations of the research. The Mano community, chosen as the other case, has been one of the most well-known communities in Japan in terms of its

long-standing successful community development history. The Mano community is able to

make an excellent second case study and comparison for the Mikura community, not only for

the contrast it offers in its differently experienced *Machizukuri* process and CBO

establishment in the past, but also because of its similarity in terms of socioeconomic

conditions, and its experiences of inner-city decline in the past resulting in physical

vulnerability to disasters. The Mano community case study is presented first as an example

of relatively successful recovery from the earthquake to provide a view of how much a

community can accomplish during and after the Kobe earthquake. Then the Mikura

community case is presented and discussed as a case study of a community that experienced

a number of challenges in recovering from the disaster. Mikura illustrates the detrimental

consequences of a history of relatively poor community development, as well as the

consequent vulnerabilities that might be remedied through capacity building and community

development, in particular through the creation of Machi-Communication, a CBO established

right after the quake. The two case communities, even if they are both unique and distinctive

and not representative of many communities in Japan, can at least help in identifying some

specific community characteristics or community development approaches that are

potentially helpful to build up in order to cope better with community vulnerability to future

disasters.

5.3.2. Field Work

The field work took place between May and October 2003 (six consecutive months)

and during a short visit (ten days) in January 2005 on the tenth anniversary of the Kobe

earthquake. During the initial field work of six months, the office of the community-based

organization (CBO), Machi-Communication (MC), the CBO established right after the earthquake, was the location used to conduct the study (interviewing the study participants, observing the activities of MC, and participating in the events held in the community). Staff members of MC were always open and generous towards me in terms of being available for interviews and I was able to participate in any activities they were planning for the day, such as staff meetings or visits to elementary schools to give presentations on the disaster recovery experience. I spent most of the time in the MC's office where many of the community events such as tea gatherings, lunch services, computer and internet classes, and various other meetings took place. I was able to meet the members of MC, temporary or long-term volunteers, the residents of Mikura community, supporters from academia and NGOs, and visitors from all over Japan, who came to learn about Mikura community's experiences during and after the Kobe earthquake. I was also invited to attend the staff meetings and a "town meeting" (I attended only once due to time conflicts). After returning from field work in Japan at the end of October 2003, I continuously checked MC's subsequent activities up to spring 2005 through their web site, staff e-mail correspondence, and through monthly publications sent to me. I also visited Mikura community again in January 2005 when they commemorated the 10th anniversary of the Kobe earthquake.

While visiting Mikura community every day in 2003, I was able to learn about Mano community (about 1km south of Mikura community), a community famous as a good example of community development in Japan. The official planner of Mano, Mr. Yuji Miyanishi, was involved in several projects in Mikura community (e.g. organizing a cooperative housing complex and the community center construction) and therefore he visited Mikura community periodically, at which time(s) I was able to interview him. He was

generous enough to agree to be interviewed for a number of hours and he offered me a substantial amount of information (published materials) regarding the history of community building activities at Mano and their recovery from the quake. I was able to walk around Mano with Mr. Miyanishi and talk to one of the leaders of the Mano Town-Building Council (*Machizukuri Kyogikai*). I attended the Town-Building Council meeting once. While I am still in touch with people in the Mikura community, I do not have personal contact with anyone in Mano and so my understanding of how Mano has developed since 1995 is very limited. However, because of its high profile, general information on the Mano community is abundantly available.

5.3.3. Data Collection

Data were collected mainly from the following sources: interviews, community newsletters, and government documents, most of which were gathered while I was there for the period of May to October 2003.

Interviews: Both semi-structured and open-ended approaches were used to conduct interviews. The purpose of interviews was to explore community recovery activities, such as the land readjustment project, housing reconstruction, population, and so on that contributed to effective recovery, which involves vulnerability reduction. The framework developed for this study is to identify community capacity as a key factor in relation to community vulnerability. Therefore, interviews were focused on understanding community capacity building rather than vulnerability. In other words, I endeavoured to discuss community activities and interviewees' involvement instead of asking about their individual struggles and difficulties going through the recovery process. However, open-ended interviews

occurred in many cases. As the research is exploratory in nature, much of the data that I gathered from the interviews was the result of spontaneous questions and answers. It was beneficial for me to let the interview participants talk freely without interruption.

Interview Participants: In total, 22 people were interviewed as key informants for the Mikura community case study. Among them, seven individuals were staff members of Machi-Communication (MC); six individuals were Mikura community residents; two individuals were the advisory committee members of MC; two individuals were independent volunteers; two individuals were local government officers; one individual was the private consultant for Mikura community; one individual was a Hyogo prefecture government officer; and one individual was a researcher who had conducted a study of Kobe earthquake volunteers. I also conducted follow-up interviews with key informants, the president of Machi-Communication, and one of the founders of Machi-Communication. Since I was with MC every day during my field work, I was able to ask follow-up questions about matters that were not clear to me after the initial interviews.

Two individuals from Mano community whom I was able to meet were Mr. Miyanishi Yuji, and Mr. Shimizu Mitsumasa, Secretary General of Mano Town-Building Council. I was one of the participants when MC staff interviewed Mr. Shimizu for an article published in the Machi-Commi Newsletter July 2003. Because the Mano community recovery activities were well-documented as well as previous community activities before the disaster, there was sufficient material about Mano in Japanese that I could review for this study (Mouri 1980, 1981, 1989; Makisato 1981; Miyanishi 1986, 1989, 1995, 1998; Inui 1998; Konno 2001; Kamo 1988; Hirohara 1996 and 2002; Hayashi 1995). Furthermore, researchers were not very popular visitors around that time (2003) in Kobe as they triggered

memories of the quake that survivors had tried to forget. Thus I was cautious about conducting interviews in Mano community and I was hampered by not having the personal contacts who could acquaint me with individuals in Mano community. As a result, I did not interview residents of Mano directly.

I have been given permission by three individuals to use their names. These individuals are Mr. Miyasada Akira, the president of Machi Communication, Mr. Tanaka Yasuzo, the chair of Mikura 5 and 6 Blocks Town-Building Council, and Mr. Miyanishi Yuji, the Mano community planner. Although I met Mr. Shimizu Mitsuhisa, Secretary General of Mano Town-Building Council, I quoted his words from Monthly Machi-Commi published in July 2003, therefore his name was not coded in my thesis. Other interview participants agreed to be interviewed on the condition that their names not be mentioned in my thesis. Therefore they are numerically coded in the following manner (Table 5.6).

Table 5.6: List of Interviewees and Interview Dates

Coding	Female/Male	Name	Organization (as of October 2003)	Interview Date (mm/dd/yyyy)
	M	Tanaka Yasuzo	Machi-Communication (Advisor), Mikura 5 and 6 Town-Building Council Chair, a retail company owner.	08/07/2003
	M	Miyasada Akira	Machi-Communication (President) and university student.	08/09/2003
	M	Miyanishi Yuji	Mano community planner.	09/17/2003 09/25/2003 10/10/2003
	M	Shimizu Mitsuhisa	Secretary General of Mano Town-Building Council	Monthly Machi-Commi 07/2003
MC-S1	M	Machi-Communication (Staff vice president) and university student.		08/20/2003
MC-S2	F	Machi-Communication (Staff) and Monthly Machi-Commi Editor.		08/01/2003
MC-S3	M	Machi-Communication (Staff) and Architect.		09/24/2003
MC-S4	M	Plaza Five (Chair).		07/30/2003
MC-S5	M	Machi-Communication (Staff) and factory worker.		09/28/2003
MC-A1	M	Machi-Communication (Advisory Committee) and a college professor.		08/19/2003
MC-A2	M	Machi-Communication (Advisory Committee) and private consultant.		09/10/2003
MC-V1	F	Machi-Communication (Volunteer) and university student.		07/14/2003
MC-V2	M	Machi-Communication (Volunteer) and Buddhist monk.		09/19/2003
RM-1	F	Mikura Resident (mid 50's, housewife).		10/03/2003
RM-2	F	Mikura Resident (mid 50's, a wife of a factory owner).		09/29/2003
RM-3	F	Mikura Resident (early 60's, former children's clothing shop owner).		10/03/2003
RM-4	F	Mikura Resident (late 30's, housewife).		08/21/2003
RM-5	M	Mikura Resident (early 50's, a public servant).		09/18/2003
RM-6	F	Mikura Resident (mid 50's, housewife).		10/06/2003
LG-1	M	Local government officer.		10/15/2003
LG-2	M	Local government officer.		10/16/2003
PPC-1	M	Private planning consultant.		10/18/2003
HPG-1	M	Prefecture government officer.		10/18/2003
AS-1	F	Researcher.		09/11/2003
N-1	M	NGO staff		10/21/2003

All interviews were conducted in Kobe city. All interviews were conducted in Japanese and the translation was carried out by myself.

Participant observation: During my field work between May and October 2003, I took notes to keep a record of activities of the Mikura community. At the office of Machi Communication, there were always a couple of staff members working. I encountered a number of local residents (at least two or three individuals per day) who visited the MC's

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office. On occasion I had very informal conversations with them. I also overheard people's conversations at the lunch service every Tuesday, or while doing some volunteer work for the lunch or participating in community center construction. While most of those conversations are not concrete data that I could use, they certainly provided "avenues" for clarification and rich detail.

Other sources of information used in this thesis:

- The Monthly "Mach-Commi", a newsletter published by Machi Communication (First edition was published in June 1997).

- The Machi-Communication web site (http://park15.wakwak.com/~m-comi/).

- The "*Manokko Ganbare*" (Mano community newsletter published during the recovery period) which was bounded in 1997 by Mano Chiku Fukkou Machizukuri Jimusho.

- Kobe City, Hyogo Prefecture and central Government documents (census and statistical reports, the Disaster Prevention White Paper, Kobe earthquake reconstruction related documents, etc). It is important to note that the population census has been conducted on October 1st of every five year since 1920[28]. The population is counted based on the number of people who have lived in the location for over 3 months or who claim that they intend to live there for over 3 months. The census data were taken on October 1, 1995, over 8 months after the earthquake.

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[28] Since 1920, the national census has been conducted almost every five years except during the period of W.W.II. The 18th population census was conducted on October 1, 2005.

During the course of the Kobe earthquake recovery phase, the population in Kobe city changed drastically and it was very difficult to produce accurate data due to the fact that residency records and the actual addresses people lived at did not exactly match for some disaster survivors.

- Internet web sites (government sites including statistical information, the Disaster Prevention White Paper; sites from disaster related institutions; disaster research centers; universities; etc.).

- Newspapers (Kobe, Asahi, Mainichi, Yomiuri, Nikkei Shimbun, etc).

- Published studies on the two communities of Mano and Mikura (Mouri 1980, 1981, 1989; Makisato 1981; Miyanishi 1986, 1989, 1995, 1998; Inui 1998; Konno 2001; Kamo 1988; Hirohara 1996 and 2002; Hayashi 1995; Imada 2003; Suga 2002).

Most of the above sources were written in Japanese and my translation is used in the thesis.

5.3.4. Ethical Issues

Ethical issues are critical in conducting research. Depending on the types of research that a researcher is planning to conduct, ethical issues can play a major role in the development and design of the research itself. For me, going out to do fieldwork has been an exciting part of the research. However, there were certain considerations and a degree of caution was required in the collection of data through my field work.

Personal Dilemma: In the communities affected by the Kobe earthquake, the earthquake event has become a major part of their daily lives. People would start telling you about the day (January 17, 1995) as if it was yesterday. Then they usually asked how I was at the time of the disaster as if that was the proper way of introducing themselves to strangers,

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assuming that I had also gone through this tragedy. It was difficult to say, "I was not here when the earthquake hit," and to see their disappointment. As soon as the disaster survivors learned that I had not experienced any of the Kobe earthquake recovery processes, most of them were reluctant to talk about their experiences any further. Occasionally, some of them became more talkative as if it was easier for them to talk to strangers. I tried not to bring up any questions that might trigger memories of their personal hardships because my research is not about individual recovery or psychological trauma, and moreover, I am not trained to deal with people's experience of trauma. Although I did ask what they did and where they went on the day of the earthquake, I avoided asking about their losses or how they dealt with their traumatic experiences.

Dilemma for Collecting Data: As mentioned earlier, understanding and talking about vulnerability, especially when it is at an individual level, is very difficult as it may make some people uncomfortable and even upset. This problem may be a practical limit for researchers to identify further details of individual vulnerability. In addition, certain vulnerability is not often experienced on a daily basis by the vulnerable people; it is difficult for them to describe what it is. The purpose of this research was not to identify individual vulnerability, but to understand how a community recovers from disasters and how recovery activities involve community vulnerability reduction; my focus is to learn how people reduce community vulnerability instead of examining detailed individual conditions of vulnerability. I was interested in addressing questions about their skills and knowledge that contributed to community recovery activities.

Power dynamics: Researcher-participant relations are sensitive issues in any qualitative research situation. Many survivors in the Kobe area had experienced being

interviewed, photographed, and surveyed. Most felt it was meaningless to participate in these studies and decided not to participate. They put up a note on their doors "No researchers please" just as people hang a sign in a window saying "No solicitation." People were very sceptical towards researchers who came one day, asked a number of questions, and left[29]. They never come back again. So-called "parachute researchers" were not welcomed in the region. Additionally, my being middle-class, Western educated, and seemingly free from Japanese traditional and social expectations as a Japanese woman could be very disturbing to some men and women depending on their backgrounds. In order for me to conduct the fieldwork and collect data, I needed to spend a good amount of time in the community so that I was not a total stranger to them. I believe that honesty is the best strategy to minimize misunderstanding and stereotyping, therefore, I spent some time telling "my story"—how I became interested in this disaster—with the participants during my fieldwork and interviews, to overcome such barriers. Except for the interviews with professionals, such as government officers, planners, academics, and CBO or volunteer organization leaders, I conducted interviews with people whom I was able to get to know personally. Interview participants were able to know who I was and why I was there. I hoped, in this way, to reduce any barriers between "researcher" and "researched" and to practice fair and effective ways of collecting data.

Benefits to participants: The benefits of this research for the participants hopefully derived in part from helping them to realize the importance of their experiences, and the meaningfulness of their roles in the communities. I emphasized the fact that it is crucial for

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[29] To my knowledge, researchers in Japan are not required to apply ethical reviews before conducting research and participants are not often informed well enough to know the types of research they are participating in as "subjects."

them to share their experiences with the public so that society can learn about more stories and more details of recovery activities in order to make further improvement in the mitigation of future disasters. Unfortunately, because English materials are not commonly accessible for most people in Japan to read, and because university libraries are not fully open to the local communities, there is a very limited opportunity for the research participants to read this thesis. However, "*Shinsai Bunko*" (The Disaster Library) at Kobe University accepts any written documents regarding the Kobe earthquake, and I will send a copy of this thesis in the hopes of disseminating the research findings.

5.3.5. Analysis of Data

Once the data were collected, the research framework (Figure 5.2) developed in this chapter was used in analyzing the data. In order to employ the framework to present the two case studies, four tables (Tables 5.1 to 5.4) developed in the previous sections are used to organize the data. These tables identify the characteristics and conditions of community vulnerability (Table 5.1), community capacity (Table 5.2), community development (Table 5.3) and community recovery (Table 5.4). As discussed, the indicators in the tables are examples of the factors, intended to guide the case study. Although the status or levels of indicators (e.g. high vulnerability, enhanced capacity, good community development, and successful recovery, etc.) are measured elsewhere in the thesis, these broad scaling classifications (high and low, poor and effective, etc.) are to provide a more tangible sense of the findings and to grasp the changes over time between the pre- and post-disaster periods, as well as to provide comparisons between the two case communities, and examinations in relation to larger regions, such as Nagata ward or Kobe city.

As indicated in section 5.2.6, anticipated results of the research are expected to be presented in terms of two broad scales (high or low, poor or good). Some data would be presented with this simple scaling (high or low, good or poor) and other data would be described in a relative sense (e.g. comparisons, and more nuanced relationships). This research predominantly involves qualitative case studies but various quantitative data sources are used to enhance the study. The two chapters introducing the Mano and Mikura communities are organized in a narrative way to provide eventful stories, historical milestones, and pivotal activities so as to develop "thick descriptions" of the experiences of the communities of Mano or Mikura. Varied sources are used to obtain possible data in order to triangulate the analysis (e.g. multiple interviewees, written reports and published accounts, etc.). In the analysis chapter, the findings of the research and the anticipated results are compared and the differences between the hypothetical results and actual findings are discussed in order to improve further understanding and future predictions.

5.4. Conclusions

In this chapter, I summarized and developed a theoretical framework for addressing my research questions. Blaikie et al.'s "Pressure and Release Model" (Figure 2.1) was adapted for the purpose of contextualizing the conditions of vulnerability in Japan, modified to create my own version of vulnerability analysis that shows the interactions between community vulnerability and capacity before and after the disaster (Figure 5.2). Qualitative case study methods were chosen for this study and two case studies were identified. In the following two chapters, these two case studies are introduced and discussed. The data from the two cases are presented with focuses on community development and recovery from the

Kobe earthquake. The Mano and Mikura community case studies are now introduced to

provide a basis for understanding the community development approach in Japan in general,

as well as community recovery activities following the Kobe earthquake.

CHAPTER 6 Case Study 1—Mano Community

6.1. Introduction

The purpose of undertaking the Mano and Mikura community case studies is to understand how community vulnerability and capacity interact in influencing post-disaster recovery. By applying the research framework (Figure 5.2) developed in the previous chapter, the two cases are presented in such a way as to identify community vulnerability and capacity as they are created through processes and activities that are part of community development. Four tables (Tables 5.1 to 5.4) developed in Chapter 5 are employed to examine the data. Each table is used to examine for the pre- and post-disaster period.

Factors and Potential Indicators of Community Vulnerability (Table 5.1),

Factors and Potential Indicators of Building Community Capacity (Table 5.2),

Factors and Potential Indicators of Community Development (Table 5.3), and

Factors and Potential Indicators of Community Recovery (Table 5.4).

Based of these tables, data are sought through an examination of the literature, and through interviews and field work. Although the analysis will be made in Chapter 8, key factors and conditions related to the framework are identified in this chapter. First the Mano community development practices are introduced and discussed to examine factors that contributed to Mano's vulnerability and capacity in the pre- and post-disaster period.

6.2. Mano Community Development

6.2.1. Overview

Mano (40ha) is located in Nagata ward, Kobe city and lies about 5 km to the west of Kobe's city center (Sannomiya Station area) (Figure 6.1). The population of Mano community in the 2005 population census was 4,725 persons, comprising 1,877 households (Statistics Bureau 2005). The highest population recorded in the recent past was about 13,000 people, comprising 3,000 households during the early 1970s (Mouri 1989).

Figure 6.1: Map of Kobe City, Nagata Ward and Mano Community
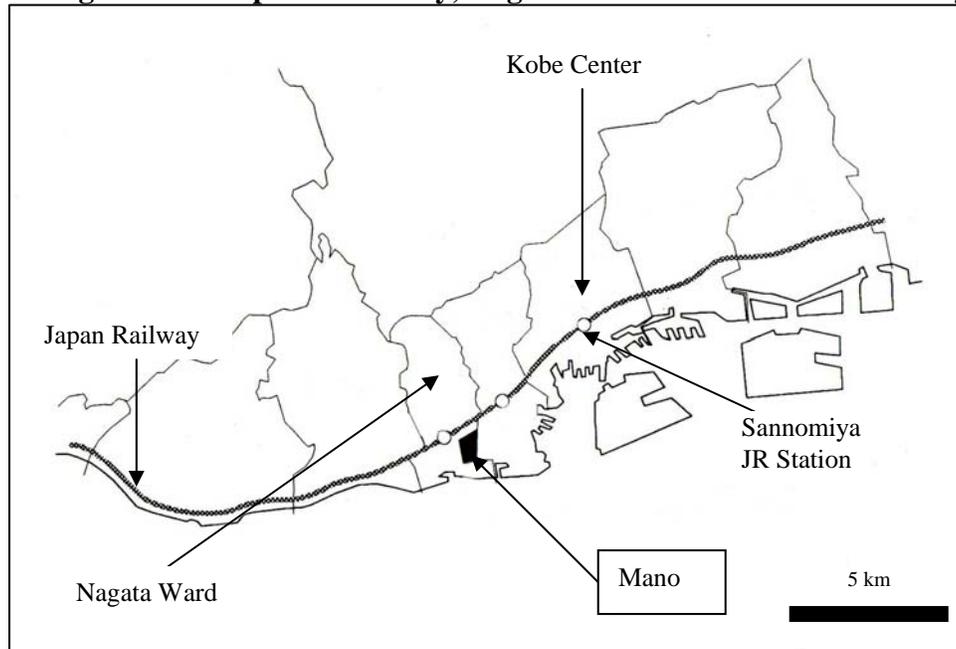
The Mano district was originally farmland surrounded by the Shin Minato River and the Hyogo Canal (Figure 6.2). The district was later developed as a residential area in the late 1950s by large corporations, such as Mitsubishi, Kawasaki, and Kanebo to provide better housing for their employees (Konno 2001). As Japan's economy rapidly grew during the 1960s, numerous factories moved into Mano and in the late 1960s, the 40 ha of this

community changed drastically to become the home of 260 small factories mixed with

residential areas (ibid) (Figures 6.3 and 6.4).

Figure 6.2: Map of Mano Community
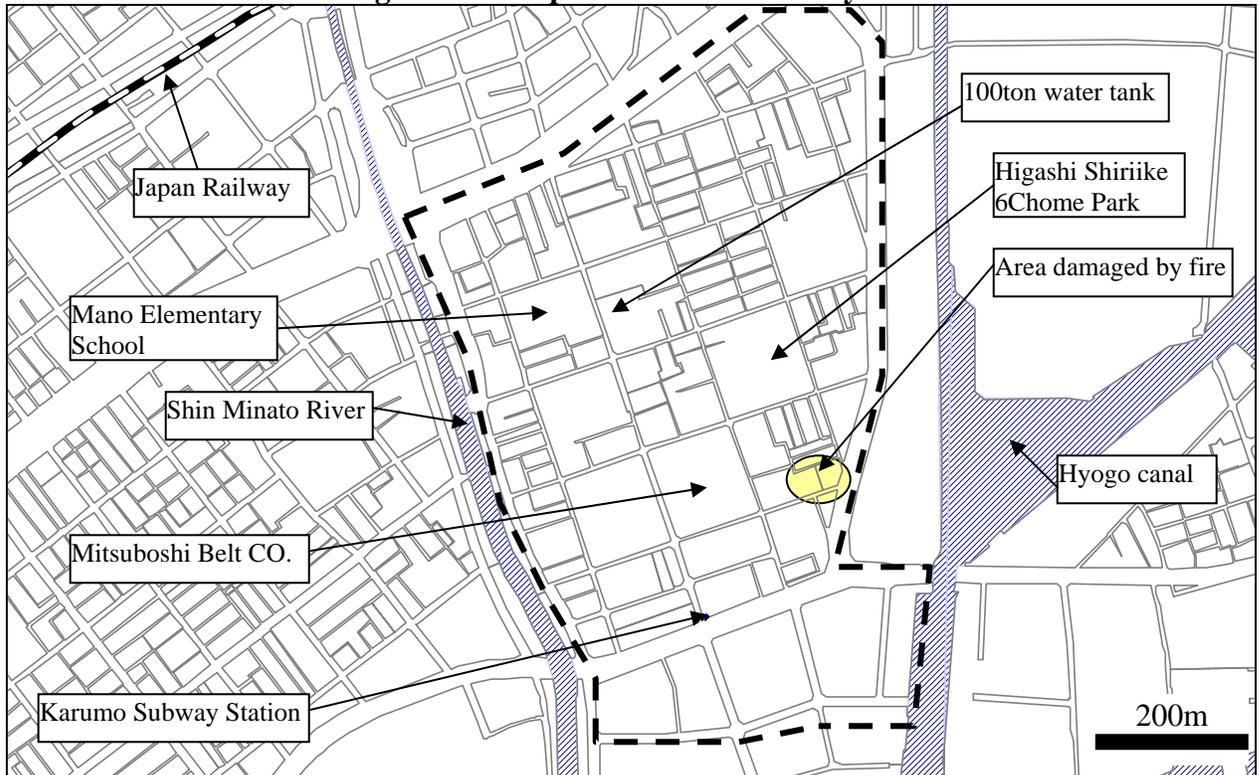
(Source: Mano Chiku Fukkou Machizukuri Jimusho 1997)

Figure 6.3: High Density of Buildings in Mano

(10/03/2003. Photo by Yasui Etsuko)

Figure 6.4: Narrow Isles in Mano
Isles are used to park their bikes, hang their laundry, grow plants, etc.

(10/03/2003. Photo by Yasui Etsuko)

This community is considered one of the most established in post-war Japan as it started to form community development practices in the mid 1960s (Konno 2001). Because of substantial and successful leadership and support from various experts, including a community planner, Mr. Yuji Miyanishi, Mano has maintained a high standard of community development practice that has lasted almost 40 years since the period of the anti-pollution movement in the 1960s—one of the longest-standing community development histories in Japan. Indeed, ever since Mano community was able to solve its pollution problems in the 1960s, it has been famous for its active community development (Konno 2001).

The Kobe earthquake gave a lesson in how effective community organization could assist in a safer, faster recovery, through the example that the Mano community provided. It was widely acknowledged that pre-disaster community development practices made positive

contributions to speedier recovery compared to other communities with poor community development efforts. Mano has been praised even more so for its ongoing community activities by academics, governments, and community professionals since the disaster (Hirohara 2002; Inui 1998; Konno 2001).

The local community planner, Mr. Miyanishi was awarded the Ishikawa Award on May 16, 2003, which is the highest prize given to individuals for their contributions to the field of urban planning. Most of his energy has been devoted to the community building of Mano in the last 30 years. Mr. Miyanishi is the first individual to be acknowledged by the planning profession for his series of *Machizukuri* (community planning) efforts in Japan (Endo 2003). With the recent growing interest in *Machizukuri*, Mano's long-standing *Machizukuri* has been widely recognized. Such accomplishments by the community as a whole, and recognition by the general public in Japan enhanced the Mano residents' satisfaction and sense of belongingness which can be considered as factors increasing community capacity.

6.2.2. Mano—Community of Blue-Collar Workers

Like most neighbourhoods in Nagata ward[30], the community of Mano has been a community of blue-collar workers and their factories. More than 40% of these blue-color workers were employed in manufacturing factories. This compares with Kobe city where

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[30] In the 1990 national census, the percentage of the population who were employees of secondary industry (mining, construction and manufacturing) was 36.6% for Nagata ward, and 27.8% for Kobe city.

only 25% of the population worked in factories as of 1975[31]. Mano is one of the low income-household areas in Kobe city (Konno 2001: 93, 113). It is also characterized by a higher level of women's (wives') contribution to the household income (36.1%) compared to Kobe city (32.8%). In addition, it has a higher ratio of family members' participation in their own business (mostly manufacturing) compared to Kobe city (Konno 2001: 93). 74.2% of the factories in Mano had less than 10 workers in 1980 and some of the factories were run by only the owner and his/her family members (Konno 2001: 95).

The following section chronicles the commencement of community development activities in Mano.

6.2.3. Emergence of Mano Community Development Activities—the 1960s Anti Pollution Movement

Mano community building efforts began as part of the pollution protest movement in Japan during the late 1960s, when Mano experienced rapid economic growth accompanied by industrialization. Around 260 small factories, varying from metal, lumber and chemical production facilities, to machinery production facilities, existed in Mano at the time and were mixed in with the residential areas. There was no control over land use planning to protect the residential areas and the environment which resulted in increasing air and water deterioration, and a number of other forms of pollution. As many as 40% of the residents in 1967 were diagnosed with asthma (Makisato 1981).

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[31] Unfortunately, these data are not current. Most national censuses provide ward level data and it is hard to obtain community level data.

There were also poor public services that contributed to further unhealthy and unsafe environmental conditions. Garbage was not collected properly, which caused rats, flies and mosquitoes to increase in number. Rivers were degraded because of factories discharging polluted water directly into them. Stream water drainage systems were poor, creating puddles everywhere after rains (Mouri 1980 and 1981; Konno 2001). Moreover, most residents of Mano worked for factories either as owners, family members of the owners, or employees, and children were left home unsupervised due to the lack of daycare facilities. There were few play grounds and parks for children in this area. Children played in the streets, which were often busy with cars and dump trucks. The streets were less than 4m wide, and the intersections had poor visibility for the drivers, which caused large numbers of traffic accidents involving children. People suffered from not only asthma, sore throats, and headaches from factory pollution, but also injuries and death caused by these traffic accidents. Noise interrupted people's sleep, and there were high levels of dust in houses, as well as bad smells (Makisato 1981; Mouri 1980; Konno 2001; Shiraishi et al. 2002). These problems were constant in Mano during the 1960s. The district was almost unliveable and eventually turned into a slum (Mouri 1980; Makisato 1981).

Figure 6.5: Mano Community Meeting[32]

(Source: Kobe Chiiki Mondai Kenkyusho)

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[32] http://www.ashita.or.jp/kh/k28ma1/k28ma105.html

Mano was soon called "a department store of pollution" (Mouri 1980). Especially the younger generation could not tolerate such poor environmental and housing conditions, and sought better places to live (ibid). Families with young children left the community and the overall number of younger generation residents decreased. Soon, Mano community became a community with a high proportion of elderly people[33] (Makisato 1981).

Figure 6.6: Mano Residents Visiting a Factory[34]

(Source: Kobe Chiiki Mondai Kenkyusho)

While Mano once had a reputation as a "nice neighbourhood" in the late 1950s, by the 1960's this was no longer the case. The population of the 40 hectare community was recorded as 13,377 in 1960 (Konno 2001). This high density (3,344 persons/km²)[35] merely exasperated the problem of pollution and overall poor quality of life. Almost a half of the housing stock was built before W.W.II and most of the houses were fragile wooden

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[33] 9.0% of the Mano population was over 65, as of 1975 while the figure was 7.6% for Kobe city as a whole(Makisato 1981).
[34] http://www.ashita.or.jp/kh/k28ma1/k28ma103.html
[35] Kobe city population density in 2006 was 2,786/km² (Kobe Census 2006).

structures (Table 6.1). The vulnerability of old wooden homes was not recognized by

building owners, and little upgrading or maintenance was done (Hirohara 1996).

Table 6.1: Comparison of Housing Types and Conditions prior to the Disaster

Types of housing	Kobe City (as of 1983)	Nagata Ward (as of 1983)	Mano District (as of 1985)
% of houses built in pre-W.W.II	10%	25%	44%
% of houses built in the *Nagaya*[36] style	13%	30%	64%
% of houses that were built of wood	60%	81%	97% (there were almost no non-flammable structures in Mano)
% of houses that were less than 50m² in total floor area	45%	54%	51% (some of the units did not have bathrooms)
% of houses that were less than 100m² in total floor area	84%	88%	98%

(Source: Hirohara 1996: 65)

Even though most residents suffered severely from the worsening environment, there

were no organized activities where residents could share their problems with other residents

and there were no community organizations to help solve these on-going problems. The first

organized community activity was considered to have occurred when Kobe City designated

Mano community a "welfare promotion model community" in 1965 (Makisato 1981; Konno

2001) and when, in the subsequent year, the Mano community held a general meeting on a

"welfare promotion" project, at which the frustrated residents expressed their pressing

concerns, anger, disappointments, and suffering stemming from the degraded environment

and poor living condition in this area. Mouri Yoshizo (1910-1990), the head of *Mano Bohan*

Fukushi Jissenkai (the Mano Crime Prevention and Welfare Promotion Committee), one of

the well recognized leaders of Mano, recalled that this meeting was the first breakthrough for

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[36] Nagaya is a type of apartment building with a number of residential units connected under a single ridge-pole. It can be translated to long house or, row house that is wooden-framed house, often poorly maintained, and offered to low-income families.

the Mano community in organizing the community to work together to solve the pollution problems (Mouri 1981).

While most pollution protest movements in Japan at that time focused on requesting compensation for individual losses and damages, or simply expelling many pollution creating factories (Makisato 1981), the community of Mano was more interested in negotiating with industries and government to find solutions that would be favourable for everyone because they witnessed that their neighbours were leaving as the factories left. There were some cases where the community asked the city government to offer the factories alternative relocation sites. In other cases, the Mano Crime Prevention and Welfare Promotion Committee requested that the factories create a division to investigate their production lines in order to improve their facilities and to minimize the pollution they created (Mouri 1989).

In 1967, the national government issued the Basic Law for Pollution Control (Kogai Taisaku Kihon ho) which increased public awareness of pollution issues and pressured pollution-producing factories to leave the Mano community (Shiraishi et al. 2002: 57). When polluting factories left the Mano community, the Mano Crime Prevention and Welfare Promotion Committee asked the government to buy the land for the community to use. Mano asked the city government to build a park on one site, and within five years of 1971, 4 parks, one childcare facility, and one senior's home had been built (see Table 6.2).

Table 6.2: Facilities Built in the 1970s in Mano

1971	Shiriike Park
1973	Higashi Shiriike Park
1974	Karumo Daycare
1975	Hamazoe Park
1976	Higashi Shiriike Senior home
1977	Minami Shiriike Park
1976-1978	Planted 10,000 trees. 9 small scale parks and playgrounds (including Muddy Park, Graffiti Park, Firefly Park, Flower Park, Mini Baseball Park, Play Gym Park, etc…).

(Source: Shiraishi et al. 2002: 58).

Mano was hugely successful in solving its pollution problems, and while improving

the neighbourhood of Mano, the residents recognized the importance of greening the

community. The result was more parks, the planting of trees and flowers, the establishment

of green spaces on street sides, and the "every house plant at least one flower pot

movement." Once their greening efforts took hold and the overall environmental quality of

the community improved, the focus of the community of Mano shifted to issues of how to

organize the community, how to provide community services to the residents and how Mano

could become a better place to live. It was the beginning of Mano's community planning and

this was the context where Mr. Miyanishi, a community planner, became involved in Mano

community development in 1977.

Figure 6 7: Planting Greenery in Front of their Homes[37]

(Source: Kobe Chiiki Mondai Kenkyusho)

To apply the framework (Figure 5.2), the Mano anti-pollution movement contributed

to the foundation of Mano community development practices. Strategies to reduce

community vulnerability, such as reducing pollution, improving community sanitation and

aesthetics, and improving residents' health, were considered as part of community

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[37] http://www.ashita.or.jp/kh/k28ma1/k28ma103.html

development. The CBO, the Mano Crime Prevention and Welfare Promotion Committee played a central role in pressuring the factories and businesses, circulating a petition, and negotiating with local government. Through such activities, the Mano community gained better community networks, high resident participation, strong leadership, and well established CBOs that are important factors increasing community capacity.

Figure 6 8: Park Maintenance by Mano Residents[38]

(Source: Kobe Chiiki Mondai Kenkyusho)

6.2.4. The Involvement of Mr. Miyanishi as a Community Planner

In 1971 when Miyanishi Yuji[39] finished his Bachelor's Degree in Architecture at Tokyo Metropolitan University, he moved to Kobe city to take a position as a consultant for the planning section of the City of Kobe. While working for the City of Kobe, Mr. Miyanishi gradually became familiar with the community of Mano. The planning section of the City of Kobe asked Mr. Miyanishi to consult with the Mano community when Mano was designated

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[38] http://www.ashita.or.jp/kh/k28ma1/k28ma104.html
[39] Mr. Miyanishi Yuji, born in 1944, lives in Suma-ku, Kobe city.

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as a model community for the District Plan. In 1977, Mr. Miyanishi began working with

Mano community on the preparation of the "Mano Town Building Plan [*Mano Machizukuri*

Koso]" (Miyanishi 1986; Hayashi 1997; Konno 2001; Hirohara 2002). (for Mr. Miyanishi's

community planning approach, see Appendix C).

Mr. Miyanishi suggested (interview 10/10/2003) that it was very important for

communities to have various events throughout the year and to make sure that every

individual and group of people could participate in events created by the communities.

Community events, such as a summer festival, a New Years celebration, and a sports day

could stimulate communication among residents, enhance understanding of each other, and

allow people to share their experiences. He claims that there is a uniquely Mano approach

towards problem solving. He told me (interview 09/26/2003) an example of when (in the late

1960s) a group of residents started a mobile bath service for the bed ridden elderly.

> It happened very spontaneously. Someone told somebody, "My grandmother
> has been bedridden for a long time and has not taken a bath at least for two
> years." People felt so sorry for her and asked their neighbours for money to
> buy a mobile bath tub. They just wanted to give them a bath. They did not
> think of asking the government for help. But when they bought the mobile
> bath tub and visited the elderly people, the media came and took pictures and
> videos which became local news and soon everybody knew about it. And
> when that happened, the public wondered what the government was doing to
> help them. And the local government soon came to Mano and offered some
> financial assistance (interview with Mr. Miyanishi: 09/26/2003).

Mr. Miyanishi said that this became the typical "Mano approach" in the 1960s. The

residents recognized a need in the community and took actions first in such a way that the

local government had to step in and support their activities. The "Mano approach" starts with

the identification of what the residents want by the residents themselves. By defining the

community problems and acting on them, it clarifies the roles of the government as well

(Makisato 1981: 79). To relate this Mano approach to my framework (Figure 5.2), it is

identified as a part of the community problem solving process as well as a way of increasing community networks to share common concerns and interests of the residents. Mr. Miyanishi provided his community planning knowledge and skills for Mano *Machizukuri*, and his expertise assisted Mano to strengthen its community development approaches.

6.2.5. The Mano 20-Year Community Plan

The Mano *Machizukuri Koso* (Mano Community Plan Proposal) (1980) was proposed as a plan outlining the kind of community that local residents would like to build over a twenty year period (1980-2000). To develop a plan for Mano community, the first meeting was held in 1978 to discuss community issues, concerns and needs. It involved a small group of people (19 resident leaders of community organizations, and 8 business and retail owners) and planning experts (4 planners from Kobe City, 4 academic and professional planners). Spending almost two years on this issue, this sub-committee of the Mano *Machizukuri Kento Iinkai* (Mano Community Planning Committee) went through a number of meetings, workshops, and field trips; they developed the Mano Community Plan in 1980 and submitted it to Kobe City for approval. During the development process, the Community Planning Committee published five newsletters to provide updates on their community plan proposal to the Mano residents (Mano Machizukuri Committee, 1980). According to the proposal (1980), the goals of the community for the next twenty years were threefold:

- To stabilize the population at 9,000 people and to achieve a balance of ages.
- To maintain a mixed environment for housing and industry.
- To improve the quality of life of the residents.

(Source: Mano Community Planning Committee 1980)

The background conditions of Mano community that led them to come up with these goals were as follows. First the population of Mano in the 1970s was already in decline. The population was also becoming aged from 7.4% in 1970 to 17.8% in 1990 and the enrolment for the Mano elementary school was decreasing in an alarming manner from 1,560 in 1960 to 309 in 1990 (see Table 6.3).

Table 6.3: Census Population Composition Change (1960-2005)

	1960	1970	1980	1990	1995	2000	2005
Kobe Total	1,113,977	1,288,937	1,360,390	1,477,410	1,423,792	1,493,393	1,525,393
Percentage to 1960	100.0%	115.7%	122.1%	132.6%	127.8%	134.1%	136.9%
% of 65 and over	4.6%	8.0%	10.4%	11.5%	13.5%	16.9%	20.0%
Nagata Total	202,338	210,072	163,949	136,884	96,807	105,464	103,791
Percentage to 1960	100.0%	103.8%	81.0%	67.7%	47.8%	52.1%	51.3%
% of 65 and over	4.6%	7.0%	11.7%	16.4%	17.2%	22.4%	26.6%
Mano Total	13,377	10,479	7,164	5,731	4,534	4,278	3,972
Percentage to 1960	100.0%	78.3%	53.6%	42.9%	33.9%	32.0%	29,7%
% of 65 and over	---	7.4%	13.2%	17.8%	19.4%	26.1%	31.5%
Mano elementary school student number	1,560	860	641	309	204	171	N/A
Percentage to 1960	100.0%	55.1%	41.1%	19.8%	13.1%	11.0%	N/A

(Source: Shiraishi et al. 2002: 75; Kobe City 2000b and 2005)

The stable population numbers and well mixed generational composition were considered to be critical factors in keeping the local community dynamic, active, and an attractive place to live in (Shiraishi et al. 2002). Second, although Mano experienced serious environmental and health problems caused by pollution-creating factories in the 1960s and early 1970s, and the community encouraged these factories to leave, the Mano community also knew that proximity of work and home was an important factor in the quality of life of the residents. They wanted separate residential and industrial areas within Mano in order to increase the quality of life for the residential side and the efficiency for the industrial side. Third, much of the local housing stock was built even before the Second World War and

needed major repairs. The residents proposed the idea of demolishing these old wooden houses and building public housing that was designed for mixed-generation and mixed-family-sized co-living homes. In addition to building three or four story cooperative houses, the remaining lands could be used for public purposes such as widening public streets up to six meters or building a community centre (Mano Community Planning Committee 1980).

The Community Planning Committee recognized that the proposed community plan would need to be accomplished in gradual steps, and they considered 20 years to be an appropriate time line. While the Committee proposed this community plan to Kobe City, they also requested that the city recognize the Committee as the "Mano *Chiku Machizukuri Suishinkai* (Mano Town-Building Council)" which would make it a representing organization for the residents of Mano. Once Kobe City agreed to the Mano community plan proposal, this council became a community organization to be involved in implementing the Mano community plan. Under the District Plan Law created in 1980, The Mano Town-Building Council had the right to access any new development information relating to the Mano area in order to control new developments that did not follow their community plan. For instance, if a factory was planning to build in the Northern area of Mano, which according to the Mano 20-Year Community Plan was designated for residential purposes, the Mano Town-Building Council had the right to know such a plan had been created by the local developers, and if the Council thought the new development plan was not suitable to the community, it could veto the plan. Mr. Miyanishi said that

> Generally speaking, Kobe City does not need to let the residents know about new development in the area, but Mano has this District Plan which entitles Mano community to know who is going to build what, where and when. The Mano Town-Building Council discusses the development plan to see if it fits with their own District Plan (interview: 09/26/2003).

In October 1982, when the mayor of Kobe City met the leaders of the Mano

Community Planning Committee, the Mano 20-Year Community Plan was accepted. A

month later, in November 1980, Mano *Chiku Keikaku* (the Mano District Plan) was

developed to provide detailed rules for new construction and street standards in order to

comply with the Mano Community Plan. The Mano District Plan regulated building codes,

street rules, and land-use zoning in the local community at a block-by-block level. For

instance, every parking lot had to have an entrance and exit onto streets wider than 4 meters.

In the residential area, factories were not allowed to be built. Any new construction had to be

reported to Kobe City 30 days before the commencement of the project (Kobe City 1988).

This legal right had allowed the Mano Town-Building Council to control any development in

the area. Many industries have been refused the right to construct their facilities in the area.

Moreover, because of its legal rights regarding the use of the land in Mano, the Mano Town-

Building Council had become a legislative body (Kamo 1988). According to Mr. Miyanishi,

this is one of the reasons why Mano stood out from the rest of the communities in Japan

(interview: 09/26/2003)[40].

Coincidentally, the 1980s was a vital period in the recognition by the national

Japanese government of the important roles of the local communities in taking initiatives for

the furtherance of their own community plan (see also Chapter 3). The Mano anti-pollution

movement and other related community activism became well known by the government.

This led the government to acknowledge the need for a community-led planning approach

and therefore the national government was comfortable assigning Mano as a model

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[40] According to Mr. Miyanishi, because the process for complying with the building code has been changed
recently, Mano community is the only community that has the legal right to control any construction occurring
in the community (interview: 09/26/2003).

community (Shiraishi et al. 2002). Moreover, Mr. Miyanishi had a network that included

many bureaucrats in Kobe City and academics in Tokyo from whom he was able to learn

inside information about national and local government policy.

Mr. Miyanishi stated that

Because I heard about the national government creating a District Plan, I
knew that if Mano could prepare their District Plan and Community Plan, it
would be accepted. I expected that Mano would be assigned as a pilot model
for the district planning law and with that in mind I was confident about
working with the local leaders for preparation of its town building plans
(interview with Mr. Miyanishi: 09/26/2003).

Another distinctive characteristic of the Mano community is the way that local

government has been involved in its local planning. Mr. Miyanishi began his career as a

Kobe City consultant and so had established a good relationship with the City by the time he

left. Mr Miyanishi was one of the core individuals who created a "*Kobe Kankyo Karute*

(Kobe Projection Report)" in 1978 to overview a wide range of aspects of Kobe city

development such as population projection, land use, infrastructure, economy, education, and

quality of life in every district and ward of Kobe city. This helped Mr. Miyanishi to gain a

solid understanding of Kobe city's administration as well as the community of Mano

(interview 09/17/2003). Although Mr. Miyanishi and his admirers, when interviewed,

emphasised Mano's remarkable achievement, seeing it as a rare case in Japanese community

planning (Shiraishi et al. 2002; Miyanishi 1995, Konno 2001), without Mr. Miyanishi's

strong relationship with the government and, most importantly, the commitment of national

and local government support (financially and legally) (Shiraishi et al. 2002)[41], Mano may not have been able to finalize its own legal district plan (Machi-Communication 2003). The creation of Mano's 20-Year Community Plan was a milestone for the Mano community and provided impetus for the community to follow through and implement the plan in order to achieve a higher quality of community life. Such long-term community development efforts are identified as community capacity building in the framework (Figure 5.2).

6.2.6. Accomplishments of Mano Community Development

While struggling to improve the community environment during the 1970s, the Mano community was able to persuade Kobe City to create parks to increase the amount of green space, the level of amenities, and the quality of life for children and seniors in the community (see Tables 6.2 and 6.4). Many of the lands used to build these facilities were given to the community after the Kobe government purchased them from the pollution-creating factories who decided to leave the community.

Table 6.4: Chronological List of Mano Community Development Activities (1950s to 2003)

Year	Local & National Level	Community Level
Mid 1950s		Mano community began forming (re-establishing) neighbourhood associations (after W.W.II).
Early 1960s	Pollution problems became serious.	Pollution problems became serious.
1965	Kobe City designated Mano community as a welfare promoting model community.	Mano community created a number of projects as the welfare promoting model community, such as those aimed at improving health, the environment, sanitation, and the cleanness of the community.

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[41] According to Shiraishi et al., the government assisted in the implementation of a number of projects soon after the Mano Community Plan came into effect. For the first phase, (the first 10 years of the Mano 20-year-community plan started in 1980), 4,680,000,000 Yen (about US$ 45million) was used to support their community plan (2001: 64).

Year	Local & National Level	Community Level
1966	The first general meeting of the welfare promoting community projects was held.	The residents first expressed the pressing concerns about the pollution and deteriorating community well-being. Mouri Yoshizo, who runs a small delivery business, became the leader of an anti-pollution movement.
1970s		The movement contributed to protesting against pollution, testing resident's health conditions, negotiating with factories to get them to move out of the community or improve their facilities to stop polluting the area.
Early 1970s		Request for more and better playgrounds and parks (a movement to create environmentally safe and healthy places for children was born).
1971		*Shiriike Gaien* park was created.
1973		*Higashi Shiriike* park was created.
1974		*Karumo* child care center opened. Community building workshops were held to increase the understanding of issues of social welfare (request to Kobe city for permission to use the public land for daycare facility construction; finding practical solutions to help families of the frail elderly—mobile bath services, lunch services, and so on.).
1975		*Hamazoe* park was created.
1976		Mano park was created. *Higashi Shiriike* senior's home was built.
1977		Miyanishi Yuji, community planner, became the consultant for Mano Town-Building Council. Leaders of Mano area and Kobe City held a meeting to discuss how Mano could take the initiative to decide what kind of community Mano wanted to become.
1978		The Mano Community Planning Committee gathered to discuss the future of Mano community building.
1979	Kobe City created a law called "Kobe *Machizukuri Jorei* (the Kobe Community Planning Law)" in December, along with a new law, "*Chiku Keikaku* (the District Planning Law)" in order to regulate and allow local communities to take the initiative in their local planning issues.	
1980	Kobe Community Planning Law and District Plan became effective in February.	The Mano Community Planning Committee proposed the Mano Community Plan to Kobe City.

Year	Local & National Level	Community Level
1982		The city and Mano Town-Building Council (previously known as the Mano Community Planning Committee) made an agreement in October. In November, the Mano District Plan was made after the creation of the District Planning Law in Kobe City in 1980. An apartment was built for those residents who agreed to leave their old and unsafe homes. It was the first housing improvement project achieved through the efforts of the Mano Town-Building Council.
1984	Kobe City purchased land after a pollution-creating factory had left, in *Higashi Shiriike* 6 Block.	
1985	A widened and improved street was built in *Karumo* St. 5 Block.	
1986	A widened and improved street was built in *Karumo* St. 6 Block. Kobe City purchased the land after a pollution-causing factory had left the *Higashi Shiriike* 4 and 5 Blocks.	
1987		Mano received a prize called "Creating Your Home Town" Award.
1990	Kobe City purchased land after a pollution-creating factory had left, in *Hamazoe* St. 3 Block.	The Mano Town-Building Festival was held. A community center was built; a play gym space was built for children in one of the apartment complexes.
1991	Some parts of *Tozai* St. (a main street in Mano) were completed.	
1992		Certain residents, whose homes were fragile, gathered to build a condominium.
1994	A subway construction project started.	
1995	104 units of temporary housing were built in three locations. *Higashi Shiriike* public housing was built.	The Kobe Earthquake. NPO *Manokko* was established. A Town-Building hall was built.
1996	Mano elementary school was renovated.	*Shiriike* child care center opened.
1997	Mano District Welfare Center opened.	The first collective[42] housing project in Japan, *Higashi Shiriike* court, was completed. Public housing, *Nagata Karumo* St., was built.

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[42] According to Mr. Miyanishi, collective housing is very similar to cooperative housing but for them collective housing means that the complex has some common space such as kitchen or recreational spaces.

Year	Local & National Level	Community Level
1998	*Hamazoe* 3 Block street and pedestrian street were renewed.	A 100 ton water tank was installed in Mano park. Another collective housing project, Mano *Fureai* home, was completed.
2003	Mr. Miyanishi received the highest award from the City Planning Institute of Japan for his long standing efforts in community building in Mano.	

(Source: Shiraishi et al. 2002; Ashitano Nihon wo tsukuru Kyokai 1996; Konno 2001; Mano Chiku Fukkou Machizukuri Jimusho 1997; Makisato 1981; Kobe City 2004)

After the Mano Community Plan (1982) was agreed to by Kobe City, a series of projects was planned and implemented with remarkable speed. Since the early 1980s, Mano has completed a number of projects to provide healthier, safer, cleaner, and greener living conditions (e.g. through rezoning, street widening, creating parks, school renovation, and construction of affordable housing, child daycare centers, senior's homes, and community centers, etc.) (see Tables 6.2 and 6.4). The Mano Town-Building Council encouraged the residents to consider retrofitting their fragile homes, and offered them cooperative housing projects in which they had the opportunity to participate as stakeholders (see Table 6.4). The Council also requested that the government build affordable apartments in the Mano community (see Table 6.4). Moreover, the Council sought ways to improve the everyday lives of senior residents by providing facilities (senior's homes), services (mobile bath, lunch or Sunday breakfast), and community organization (senior's club). The Mano community made an effort to obtain a senior's home with adequate facilities that had wheel chair accessibility, emergency alarm system, and on site health check-ups by nurses and doctors. The community also offered workshops for the residents to provide care-giver lessons so that trained resident volunteers could provide appropriate services to the elderly (Konno 2001).

The Mano community project to assist elderly groups is a good example of how this Mano community capacity was used to deal with the most vulnerable elements in the population. Providing a mobile bath service to bed-ridden elderly by the volunteer Mano residents was very much appreciated by these frail elderly. But soon, their neighbours realized that it was also important for the elderly people to get out of their houses every once in a while. The Mano community started lunch services for the elderly at a community center so that the elderly population now has to go outside to have lunch and meet their neighbours. While they have lunch at a community center, a community nurse comes to conduct health checkups for the elderly. The Mano community development started from the anti-pollution movement, but the activities did not end when pollution causing factories left the Mano community. Rather the community was able to expand its activities to improve not only its physical environment, but also the residents' health, children's safety and assistance for the elderly (Makisato 1981; Konno 2001). Complex interactions among residents and CBOs, continuation of community activities, and efforts to expand and reinforce community development practices contributed to the Mano community's ability to continue to build community capacity.

Overall, the Mano Community Plan enabled the community to improve its environmental and housing situations, and assisted younger and older generations to increase their quality of life in Mano. It can be argued then that the vulnerability of the Mano community to further decline in population and deterioration was reduced by the efforts to increase safety and liveability. Through creating better living conditions, the Mano community increased its physical and social capacity, while reducing its vulnerability and increasing social cohesion.

6.2.7. A Community Group for Future Leaders

In addition to 16 neighbourhood associations and other community-based

organizations[43] such as a women's club, senior's clubs and so on, Mano has another

community organization called "*Mano Doshikai*" (the Mano Fan Club, or, as Neil Evans

translated it, Mano Comrades Society) (Evans 2001: 202). The *Mano Doshikai* was created

by the residents of Mano in 1980 in order to educate and train the next generation of leaders

of Mano (Konno 2001: 148). The eligibility requirements for *Doshikai* membership were that

they be between the ages of 30 and 49, and when they turn 49, they had to retire from the

society (see Table 6.5). Gender composition was not indicated in Konno's data.

Likewise when Mr. Shimizu, a former *Doshikai* member, talked about this

organization, he did not mention whether there were female *Doshikai* members or not.

However, it is highly likely that all the members were male.

Table 6.5: Age Distribution of *Doshikai* (as of November 1988)

Age	
30s	15
40s	59
Former members	24
Total	98

(Source: Konno 2001: 148)

In 1988, there were 40 to 50 regular members who participated in organizing and

preparing community activities and seasonal events in Mano. Besides such roles, members

also met at least twice a month and most often these meetings involved informal settings and

activities (eating and drinking on weekdays, some recreational activities on weekends) which

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[43] According to Makisato (1981), 16 organizations were neighborhood associations for small scale blocks in the
Mano community. These NHAs existed in the mid 1950s, however their activities were not organized and
coordinated with each other at that time.

were intended to enhance their networking and to create friendship. *Doshikai*'s rules were

not to bring in politics, religion, and business/work related topics and issues. With its rules,

Doshikai maintained equal and fair relationships among members. "It does not matter

whether you are the CEO of a big company, a business owner, a blue-collar worker or even

between jobs. In *Doshikai*, everybody is equal when we talk about Mano *Machizukuri*"

(Machi Communication 2003b). While participating in this association, members established

friendships with others whose backgrounds, beliefs, age, education, class and status were

very different from their own (see Table 6.6). This kind of groups was unusual in Japan

where most social groups have tended to value the similarity of the members (Konno 2001:

148-149).

Table 6.6: Attributes of *Doshikai* (Occupation) (as of November 1988)

Occupation	
White and blue-collar workers	35
Business owners	63
Total	98

(Source: Konno 2001: 148)

Mr. Shimizu, a former member of *Doshikai*, says,

> The members of *Doshikai* have to retire when they turn 50. And at the same
> time, they are asked to become executive members of their neighbourhood
> associations or Mano Town-Building Council. Twenty years since its
> establishment, a half of the leaders of neighbourhood associations are former
> members of *Doshikai*. They are also involved in other community
> organizations and many of them play dual, triple or even more roles in the
> community (Machi Communication 2003b).

When the 1995 Earthquake struck, *Doshikai* members contributed not only to

supporting the daily community development of Mano, but also to the earthquake recovery

efforts. Many *Doshikai* members played critical roles in Mano emergency headquarters and

during the early period of the disaster recovery phase, four (among 16) leaders of

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neighbourhood associations retired and their successors were members of *Doshikai*. Many

other *Doshikai* members have also been appointed to challenging positions to revitalize most

of Mano's community organizations (Inui 1998; Konno 2001). For the Mano community,

having this distinctive CBO enhanced the community enabling it to gain young new

community leaders. This is an important factor in the ability of communities to maintain

long-term successful community development and capacity building.

6.2.8. Community Organizations, Participation, and Networking

Many scholars have studied the dense and deep networking systems of Mano's

community activities and they have recognized that such a high level of social integration

and solidarity must be one of the keys to Mano's successful community development

(Makisato 1981; Kamo 1988; Hirohara 1996; Inui 1998; Nawata 1998; Evans 2001; Konno

2001; Nakagawa and Shaw 2004). Inui (1998) analyzed the details of individuals'

relationships with different community organizations and the multiple roles of these

individuals in Mano. Inui described Mano's community development practices as creating a

"web of networks" that enabled the community to have a rich diversity of events, to be thick

with networking connections, and to be spread widely with different interests. Inui

investigated 100 individuals in Mano, who had involvement in different community

organizations, to analyze the depth and breadth of their interactions. Inui argues that most

members were involved in more than two community organizations. Through these

community organizations, the Mano district carried out a series of community activities and

events. Although every organization had different objectives and maintained its autonomy,

many of the Mano population were able to exchange and share information and resources

with each other since the individual members of one organization were often also members of other organizations. Individuals had a number of opportunities to meet with other residents and increase communications which could enhance the trust between them.

Furthermore, Inui found that community organizations had excellent communication and networking with other organizations (Inui 1998; Konno 2001). In another study, Makisato pointed out that directly involving individuals and increasing opportunities for them to participate in different organizations and events could enhance individual's understanding of their community and stimulate their motivation to improve current conditions, and increase willingness to solve common problems (Makisato 1981: 85-86). During the course of the anti-pollution movement in the 1960s and 1970s, existing CBOs developed networks between themselves and *Mano Bohan Fukushi Jissenkai*, (the Mano Crime Prevention and Welfare Promotion Committee) led by Mr. Mori Yoshizo, took a role in organizing these CBOs, all of which resulted in enhanced community networking and integration. In the 1980s when the Mano community began to be involved in *Machizukuri* activities, the Mano Town-Building Council took over the principal role from the Mano Crime Prevention and Welfare Promotion Committee in organizing other community organizations for the purpose of creating and achieving community planning (Konno 2001). Mano's "web of networks" increased by individuals and CBOs was therefore one of the critical factors enhancing community capacity. Also, through the good networks in the community, the residents could increase their access to information and resources, which contributed to reducing overall community vulnerability.

It is important to note, however, that not every individual in Mano participated in community activities. Konno (2001) suggests that the residents who played central roles in

the accomplishment of these series of activities were roughly 2% of the Mano population.

Thus, there were about 100 people who became leaders of their neighbourhoods. Konno

studied the roughly 100 neighbourhood leaders (15 individuals in their 40s; 53 individuals in

their 50s; 18 individuals in their 60s and 14 individuals over 69) and identified 51 individuals

who played three leadership roles in at least three neighbourhood organizations, and among

them 32 individuals who played leadership roles in four organizations (Konno 2001: 175).

Furthermore, although the female residents played active roles in participating in a variety of

community activities and events, it was often the case that the male residents were the

representatives of the various CBOs. This is due to the fact that participations was on a

household unit basis rather than on an individual basis so that the head of the household, who

was often male, officially represented the household in these cases. However, when actual

activities and events took place, female members of the households showed up to take charge

of the implementation.

6.2.9. Building Community Capacity

Makisato (1981) argues that Mano district's pollution protest movements in the 1960s

and 1970s contributed to creating a foundation of community capacity building. It started

from the pressing needs to have clean water and air, a safe and clean (sanitary)

neighbourhood, basic services and support for children and the elderly, and a green and

healthy environment. While acquiring such essential living conditions, through pressuring

the city government, the Mano community gained the skills and knowledge required to solve

other community problems. Thus, in evaluating Mano's community activities, Makisato

(1981: 65-81) claims that Mano made a number of accomplishments (see Table 6.4). He

evaluated Mano district's activities in the 1970s in terms of their success in reaching the three following goals:

First, the Mano Town Building Council was able to fulfill new community needs: As mentioned above and also in the previous section on capacity to deal with their vulnerability, the Mano district was able to meet the residents' pressing needs in the 1960s and 1970s. The Town Building Council was also concerned about improving community security, and traffic safety, providing childcare centers and senior's homes, and even negotiating prices of household goods such as soaps, detergents and kerosene. It solved community problems one at a time and was able to provide direct results to the residents. The Council was also able to increase their community capacity by linking and relating every issue in the community (Makisato 1981).

Second, the Council successfully resolved power relationship problems and embraced democratic processes by adopting a bottom-up planning approach. Mano's pollution protest movements involved different stakeholders—the factory owners (some of whom were also residents of the Mano community), the Mano residents, and local government—which created complex power relationships. Local government first did not listen to the residents' claims of serious pollution problems and maintained a subservient position with respect to those factories. However, the factories and local residents established an equal and mutually dependant working relationship at the end. The local government had played a supportive and assisting role for the residents as opposed to its usual hierarchical and top-down role (ibid).

Third, the Council improved and enhanced community capacity to solve common problems. Mano's series of community activities (see Table 6.4) educated and nurtured the

residents to be able to devote themselves to improving their community and to see problems as being common to all, and for all to solve. While solving a number of problems, the residents gained confidence in community building and such confidence contributed to stimulating a sense of belongingness and attachment to their community (ibid).

Makisato (1981) further argues that the existence of an outstanding, creative, charismatic and unique leader (Mouri Yoshizo) was another crucial factor in enhancing community capacity. The views and beliefs of the leader were widely accepted and greatly appreciated by the residents. The leader, Mr. Mouri strongly believed in bottom-up, democratic and equal approaches towards community problem solving. When the former chairperson recommended him as his successor, he agreed to take the position only if he was elected by the residents' vote. After that, any selection of key members was made through voting. While the most common practice in selecting executive members in community organizations in Japan has been through the recommendation of the members or for members to simply take turns, Mano leaders were always elected by the residents. Mr. Mouri often divided the community into very small groups (five to ten households) and each group elected their leaders. In this way, they could get better participation and involvement from various groups of people in the community.

The leader also made sure to reach out to every resident in the community. Even so, it was not easy for some residents, especially housewives to articulate clearly what they were concerned about because it was considered culturally and socially inappropriate for women to attend public forums and especially to speak up in these situations (Uno 1993). Therefore, the leaders asked these housewives to gather informally and practice effective public speech among themselves so that they were not nervous and were able to express their problems and

needs at community meetings. Although most often, the female household members were key participants in community events, they were not in a position to influence community decisions. Mr. Mouri's approach at that time was progressive in the sense that women in Mano were asked to speak out in public.

In the 1960s, Mr. Mouri also distributed three opinion boxes in every neighbourhood to be placed on street corners to make sure every voice was heard (Makisato 1981: 56-83). Makisato (1981) concludes that Mano's community building involved a democratic approach which created a "learn and grow together" atmosphere in the community. The Mano Town-Council held meetings, workshops, lectures, and seminars for every occasion so that the residents can have opportunities to learn and gain skills and knowledge in order to understand their community problems (ibid). The Mano community therefore, created and developed a range of unique approaches to increase communication among residents, to understand pressing needs, and to make decisions through bottom-up democratic processes. To relate the efforts of the Mano community made over the years to the framework used in Figure 5.2, I argue that the Mano community development practices contributed significantly to increasing community capacity before the 1995 quake. As well, through creating and diversifying community activities and programs, community vulnerability was dealt with in a number of ways, which effectively resulted in an overall reduction of community vulnerability at the time of the quake, as shown in the following section.

6.3. Mano Community Recovery from the Kobe Earthquake

6.3.1. Overview

The physical vulnerability in the Mano community was very high just before January 1995 (e.g. a high density of buildings, fragile wooden buildings (see Table 6.1), narrow streets (Figure 6.3 and 6.4), and mixed use of land development with many factories co-existing closely with residential areas). The social vulnerability was also very high (e.g. an aging population and a relatively lower proportion of younger generation residents) (see Table 6.3). However, the overall impacts of the Kobe earthquake were not as severe as in the Mikura community or other districts in the inner areas of Kobe (see Table 4.7, 6.7, and 6.8). The following sections introduce the wide range of disaster recovery activities carried out by Mano community in order to illustrate the effectiveness of their recovery efforts.

Table 6.7: Summary of Damage in Mano Community

Disaster damage (Population before the disaster: 5,474 people, comprising 2,385 households as of December 1, 1994.)	19 died (2 died from fire). 680 (25%) housing units were destroyed out of 2,712 housing units at the time of disaster. There was minor damage from fire which burnt 43 houses. 0.35ha was burnt. 1,400 housing units were partially destroyed (assessment was conducted by over 300 volunteers of engineers and architects in February of 1995). About 1,400 people were evacuated to emergency shelters (16 locations) in Mano at peak. Estimated 1,000 people evacuated outside of Mano. 104 temporary housing units were built in Mano area (30% of the residents were the survivors from the Mano community).

(Source: Mano Chiku Fukkou Machizukuri Jimusho 1997; Hirohara 1996: 127; Kobe City 1997; Miyanishi 1998: 81; Konno 2001: 7)

Although Mano's physical vulnerability was high compared with Nagata ward and Kobe city, the damage from the quake in the Mano community was relatively lower (see Table 6.8). The total amount of destroyed housing in Mano was 25.1% of the total housing in the pre-disaster period while 40% of housing was destroyed in Nagata ward. Similarly, only 1.6% of the housing in Mano was burnt in the subsequent fires. This was much lower than

the 9.4% of housing destroyed by fires in Nagata ward. Considering the high proportion of old wooden housing in Mano, compared to that of Kobe city and Nagata ward (see Table 6.1), overall housing damage in the Mano community was relatively low.

Figure 6.9: Houses Completely Destroyed by the 1995 Earthquake in Mano
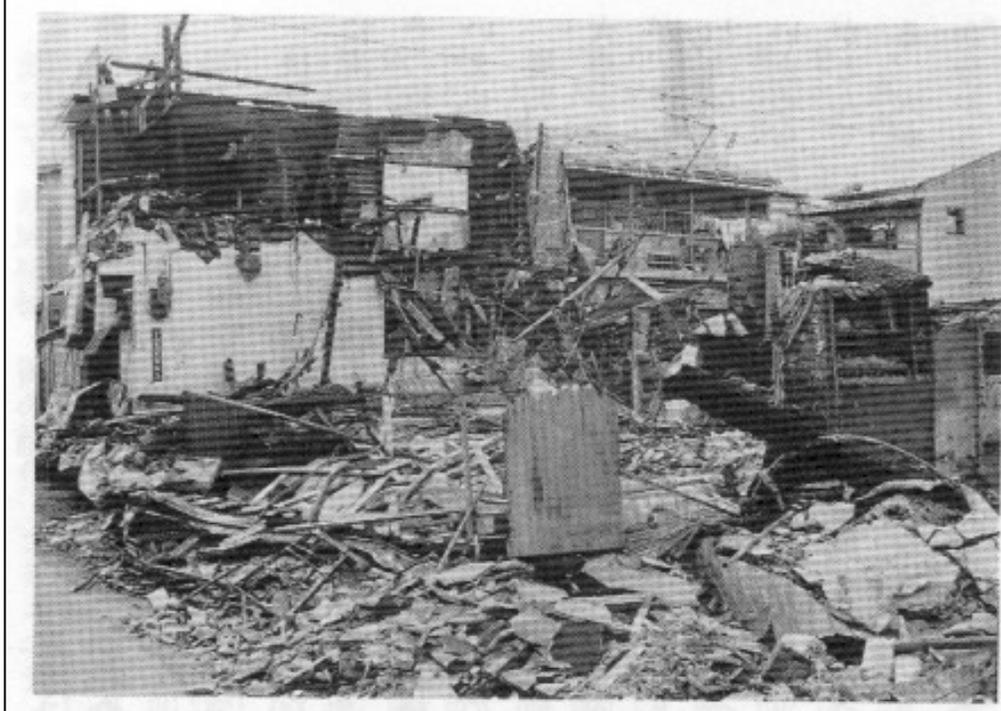
(Source: Hanshin Fukkou Shien NPO 1995: 19, Jichitai Kenkyusha)

Table 6.8: Disaster Damage Comparison for Mano, Nagata, and Kobe

	Kobe City	Nagata Ward	Mano
Area (km^2)	552.72	11.46	0.4
Population (pre-disaster)*	1,520,365	129,978	5,474
Population in 2005 census	1,525,393	103,791	3,972
% (2005 pop./pre-disaster)	100.3%	79.8%	73.0%
Deaths	4,571	921	19
% (Deaths/pre-disaster pop.)	0.30%	0.71%	0.35%
Housing in pre-disaster**	540,200	50,660	2,712
No. of housing units destroyed	74,386	20,280	680
% (destroyed/pre-disaster)	13.8%	40.0%	25.1%
No. of housing units burnt***	6,965	4,759	43
% (burnt housing/pre-disaster)	1.3%	9.4%	1.6%
No. of housing units partially destroyed	55,145	8,282	1,400
No. of people evacuated	236,899	55,641	1,400
No. of temporary shelters built (closed by Jan. 2000)	39,178	647	104

* Kobe and Nagata population was as of January 1, 1995. Mano population was as of December 1, 1994.
** The number of housing units in Kobe and Nagata was as of 1993. The number of housing units in Mano was as of December 1, 1994.
*** The number of housing units burnt by subsequent fires is included in the number of housing units destroyed.
(Source: Nagata Ward 2007; Kobe city 2007a; Mano Chiku Fukkou Machizukuri Jimusho 1997)

Efforts were made to provide possible emergency shelters within the community (Hanshin Fukkou Shien NPO 1995) in order to minimize the population loss; the Mano community was able to provide 104 emergency shelters. However, the population recovery has been slower than that of Nagata ward and Kobe city.

Figure 6.10: Mano Residents Sheltering in Higashi Shiriike 6 Chome Park
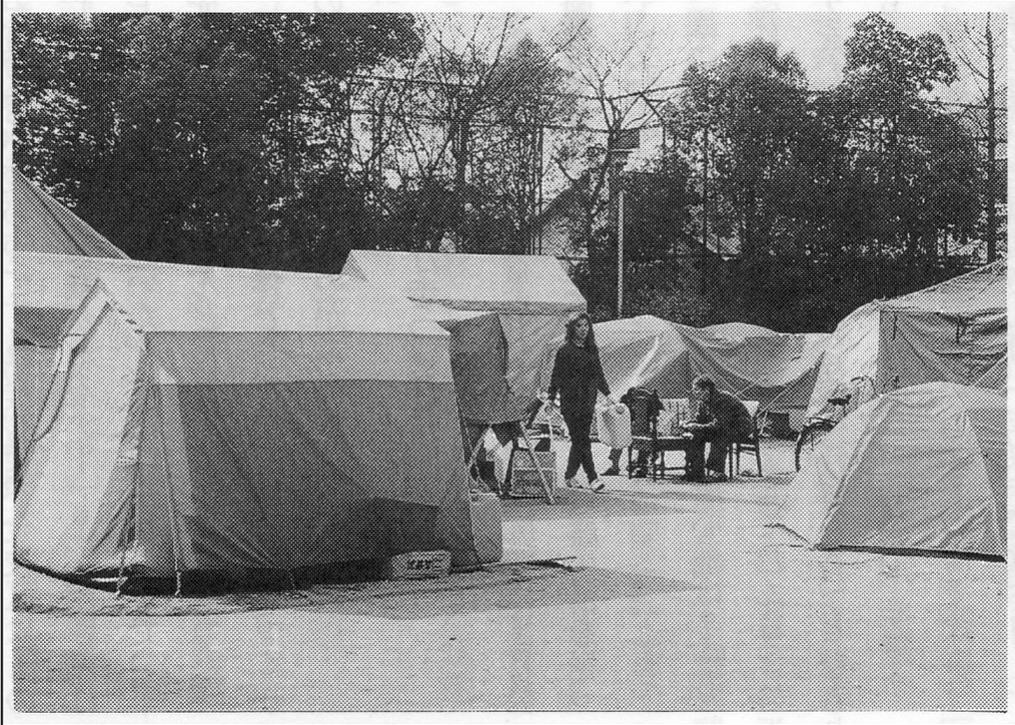
(estimated date between Jan 17th and June in 1995.)
(Source: Hanshin Fukkou Shien NPO 1995:14, Jichitai Kenkyusha)

6.3.2. A Bucket Relay to Put Out a Fire—An Example of Mano's Problem Solving Approach

One reason why fewer buildings were destroyed in Mano was because the residents of Mano responded right away when fire erupted in the area, even though they were not well prepared for any "emergency" per se. The Secretary General of Mano Town-Building Council, Mr. Shimizu Mitsuhisa recalled that when fire erupted after the earthquake, people started lining up and handing buckets full of water to the next person to put out the fire because the water pressure was too low to use the fire hydrant properly. They did not intend to wait for a fire truck to come. They did not question if this bucket relay could really put out the fire. They simply lined up and did not hesitate to hand buckets full of water one by one in order to fight the fire. Mr. Shimizu recalled;

We had practiced some sort of emergency response drills in the past, but something like this—putting out a fire by hand ("bucket relay")—was not something we had planned to do. It was really a spontaneous response that people just did it. I think that it was people's hidden capacity which had been cultivated in our community over time (Machi Communication 2003b).

Generally, when a fire erupts, most people helplessly watch the fire and wait for the fire engines to put out the fire. The unfortunate result was that many communities were destroyed by fires (Table 6.9). There were a number of cases where people ran away from a fire and the areas were burnt before the fire department arrived (Konno, 2001; Miyanishi 1995). A female resident in Mikura community recalled when the fire burnt her retail store.

When a fire erupted far away from where my shop was, I did not think that the fire could move so fast and I would lose my shop. It was the first time I saw the fierce power of fire. I could not believe that my shop was burnt to ashes just like that (RM-3: 08/07/2003).

Table 6.9: Fire Damage Comparison among Four Districts in Nagata Ward

	Area of the district (ha)	Numbers of households	Death toll due to fire	Ratio of death: household
Mano District	40.0	2,385	2	1:1,193
Chitose District	17.5	1,644	86	1:19
Noda District	13.0	1,031	41	1:25
Kunizuka 6 District	5.9	759	8	1:95

(Source: Konno 2001: 8; Hirohara 1996: 127; Mano Chiku Fukkou Machizukuri Jimusho 1997)

But the people in Mano reacted differently. They acted right away while thinking it through together and discussing with others to figure out ways to fight the fire. The fire hydrants were not powerful enough to put out the massive fire that started in Higashi Shiriike 7 Block (Figure 6.2) (Endo 1995). One of the residents said "At first, we thought that we could stop this fire before 10 houses were burnt. But the water pressure was not powerful enough and then we used up all the water very quickly" (Endo 1995: 9). Some resident suddenly remembered that there was a machine in a factory in Mano that could increase

water pressure. They borrowed the machine from the factory and they were almost able to put out the fire with the resulting high water pressure, but then they ran out of water (Miyanishi 1995: 19).

Next, someone knew that there were water tanks in a shoe manufacturing company and so they went there (Hamazoe St. 4 Block) to ask to use the water. The factory workers, who had worked their night shift, offered them the use of the factory's water and participated in putting out the fire (ibid.). The residents then also realized that they could use the water in a local river (the Shin Minato River). They borrowed water hoses from factories in Mano and connected them to reach the river water (Nishibori 1995: 82). While some residents were looking for water sources or equipment to put out the fire, other residents were handing buckets full of water one by one to the next person in the line to fight the fire.

One of the residents (a *Doshikai* member) with other members of *Doshikai* took on the role of controlling the traffic because every time when the vehicles passed through the neighbourhood, they run over the water hoses that the residents were using to fight fires. "We had to stop the traffic passing over the water hoses that we were using to put out the fire" (Mano Chiku Fukkou Machizukuri Jimusho 1997: 41). Some of the water was used to douse the buildings which were adjacent to the fire. The residents told each other "Leave the buildings that are already on fire for now! Water the houses that the fire has not reached yet!" (Endo 1995: 9). The fire started at around 7 am and by 11 am, the fire was extinguished (Nishibori 1995: 83). All together, 43 buildings were burnt and 2 people died in the fire (Hirohara 1996: 127). Mr. Shimizu stated that "We could show here that better communication and high integration of the community contributed to effective actions which were all coming from our efforts at long-term community development" (Machi-

Communication 2003b). This Mano "bucket relay" which successfully put out the fires became one of the legendary stories that has stuck in residents' minds. The incident enhanced the residents' sense of belonging, and individual as well as community achievement. Moreover, it contributed to increasing their community capacity in such a way as to reinforce good communication, problem-solving efforts with neighbours, and a trusting relationship with their leaders.

6.3.3. The First Three Days

Mano's bucket relay story was one good example of how the Mano community was able to join together to cope with their adversity. Table 6.10 below also illustrates how the residents were capable of taking spontaneous actions to respond to the disaster. A number of public and private places, such as schools, daycares, gyms, and neighbourhood meeting rooms were opened for the residents to evacuate to[44]. Three days after the earthquake, the Mano community established its own disaster relief headquarters in the Mano elementary school (Figure 6.2).

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[44] Unlike Mano, a resident of another community recalled that she took her elderly neighbours to a nearby public health clinic center to evacuate them but as soon as nurses in the center saw them coming, they locked the door and put out a sign that said "this facility is not available at this moment" (interview RM-1: 10/03/2003).

The Mano community leaders organized teams to distribute food and other relief

goods so that they could provide them equally to everyone (Hanshin Fukkou Shien NPO

1995; Mano Chiku Fukkou Machizukuri Jimusho 1997). They knew that the elderly and

disabled would have difficulties coming to receive these relief goods by themselves. Mr.

Miyanishi who had devoted himself to Mano community recovery since the second day of

the event, said, "We were determined to prioritize the weakest population in the community

when distributing any relief goods to the residents" (Miyanishi 1995: 24). Within the first

week, the Mano disaster relief headquarters was able to systematically coordinate the

distribution process which greatly reduced anxiety and stress for the survivors, particularly

for the elderly groups. They did not have to worry about long lines to receive food and water,

which often caused them to give up waiting due to the long waiting times outside in winter

(January 1995). For the first month after the quake, the conditions in the Mano community

became progressively less chaotic and more organized (see Table 6.10).

Table 6.10: The First Three Days—Summary of Mano Response Activities

Day 1	5:46, January 17	The Great Hanshin-Awaji Earthquake
	30 minutes later	Within 30 minutes of the quake, doors of the Mano elementary school and a privately owned gym were opened by the courtesy of the owners for the victims to evacuate to.
	In the morning	Survivors helped each other and rescued people who were under the rubble.
	In the morning	Soon, Mano daycare center, public housing meeting rooms, and community centers were also opened by the courtesy of the owners for the victims to evacuate to.
	In the morning	Parks and public and private open spaces were used as emergency evacuation spaces.
	Between 7 to 11am	The fire started and the residents put it out.
	In the afternoon	In 7 locations in Mano, neighbourhood associations started to prepare meals.
	In the afternoon	Executive members of neighbourhood associations gathered in the Nagata Ward Hall and discussed with the local government how to distribute the emergency relief goods. The Mano leaders told the local government that the Mano community would like to take charge of distributing the relief goods to the residents. The local government agreed with the idea.

Day 2	January 18, 1995	Mr. Yuji Miyanishi arrived and the first meeting of 16 neighbourhood associations and representatives of emergency shelters was held. These Mano leaders decided that they would set up a headquarters to take care of matters for Mano community. They also decided to hold a meeting everyday at 6 pm. They divided into smaller groups (*han*) from each neighbourhood association in order to reach out to each individual household.
Day 3	January 19, 1995	The Mano disaster relief headquarters negotiated with Nagata Ward emergency headquarters (local government) to recognize the Mano headquarters as the main center for the control and supervision of relief goods, information, problem-solving and decision-making processes regarding Mano community. After that, Mano headquarters was the officially recognized emergency center. 5,000 meals (twice a day) and other relief goods were distributed by the headquarters everyday for two months.

(Source: Hirohara, 1996: 127-128)

Figure 6.11: Mano Emergency Relief Headquarters Meeting in Mano Elementary School

(approximate date: between January and August 1995)
(Source: Hanshin Fukkou Shien NPO 1995: 42, Jichitai Kenkyusha)

Miyanishi and others witnessed how the vulnerable struggled at the time of crisis and therefore they wanted to make sure that those groups would receive priority for relief goods (Miyanishi 1995; Nishibori 1995; Konno 2001). An elderly couple, who received meals everyday from their neighbours, said "it is so great to feel that we are not forgotten" (Konno 2001: 9). At the beginning of March, 1995, the Mano Disaster Relief Headquarters discontinued distributing relief goods to the residents of Mano because most lifelines (water,

gas, electricity) necessary for the Mano neighbourhood to prepare warm meals at home had been restored.

The disaster recovery activities carried out by the Mano community were very fast and effective, and the community made good use of available resources (e.g. emergency shelters, skilled and knowledgeable residents, local government assistance, volunteers, and so on) and maintained the autonomy of the community to make decisions. This fast, efficient, and autonomous use of resources was an important factor in increasing the capacity of Mano.

6.3.4. Long-Term Recovery Activities

In April 1995, two and half months after the quake, no significant improvement had been made in various aspects of the situation in Mano community. About 1,350 evacuees (25% of the Mano population) were still residing in the elementary school, community centers, a privately owned gym, parks, and in parking lots. The leaders of the Mano community considered the reasons why the residents still remained in emergency shelters. They learned that many of the residents were not sure whether or not their homes were safe to return to. Accordingly, the Mano Disaster Relief Headquarters set up expert teams of civil engineers and architects to estimate the damage to their homes. A total of 330 experts volunteered to examine every house in the Mano community in order to determine if it was safe for owners to return to their homes. They completed the analysis in one weekend in February 1995. Most of the evacuees returned to their homes once the experts' had said that they were safe (Miyanishi 1995).

In some cases, houses were deemed safe, yet residents could not return because the inside of the houses was not liveable. The earthquake's massive destructive forces moved

beds, drawers, tables, TVs, fridges and bookshelves, and broke dishes, ornaments and windows[45]. Even when the houses withstood the earthquake they were not in a liveable condition unless residents could clean up all the mess. Many elderly and disabled people were incapable of cleaning this interior mess and removing the debris and therefore, had to stay in the emergency shelters. Volunteers were gathered to help make these homes liveable—moving furniture back, washing inside the refrigerator, cleaning all the shattered window glasses and plates from the floor, for example—so that the residents could return. According to Mano Emergency Relief Headquarters records, a total of 1,500 volunteers came to participate in the Mano community disaster reconstruction activities (Mano Chiku Fukkou Machizukuri Jimusho 1997)

Although the local government had begun providing temporary housing units in Mano area to the survivors, only 17 people from the Mano community received housing offers at first (Miyanishi 1995: 31-32). To build more temporary housing in the Mano community, one of the community leaders visited Tokyo with other delegates from the community to see the Minister of the Disaster Prevention Bureau to request that the central government build temporary housing in the Mano community. As a result, 104 units were built and the emergency shelters were closed at the end of October, 1995 (Yamahana 1999).

Overall, Mano's community recovery activities were focused on providing safe homes for the residents as the physical damage to the community was relatively minor. As long as the residents were able to return to their pre-disaster houses or move into new homes, most other relief efforts were not much needed by the residents. The Mano community

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[45] A friend of mine from Kobe told me that her friend's kitchen was so messy. Everywhere, from ceiling to floor and from wall to wall was covered in the left over soup from the day prior to the quake, which had been saved in a container in the fridge (my field note: 06/04/2003).

recovery activities were focused first on distributing relief goods and information until the residents returned to their homes, and later on they focused on encouraging the residents to retrofit their homes or participate in cooperative housing projects as stakeholders. Within a year and half after the quake, the Mano Town-Building Council encouraged the residents to participate in programs to reconstruct some of the lost homes which resulted in construction of a total of 222 housing units (see Table 6.11). They also built a 100 ton underground water tank to serve as an emergency water supply for future disasters (see Figure 6.2).

Table 6.11: Long-Term Recovery Activities in Mano Community

02/1995	Over 300 architects and civil engineers examined the liveability and safety of buildings in Mano. They provided their estimate of whether their homes were safe to live in or not.
03/1995	The Mano Disaster Relief Headquarter began publishing a weekly newsletter, "*Manokko Ganbare*" to provide disaster relief information (continued for the next five years).
03/1995	Most lifelines were restored. Most electricity had been restored on the day of the earthquake (01/17/1995). Water supply was restored (02/24/1995). Gas was restored (03/15/1995)
05/1995	Mano made a request to the Japanese government to build temporary housing in Mano and Kobe City had built 104 units in Mano by August 1995.
08/1995	Mano emergency shelters were closed.
09/1995	Mano recognized the initial relief period was over and the community reconstruction period began.
10/1995	Mano emergency headquarters was closed because all the evacuees had left the emergency shelters in Mano. This headquarters was transformed into Mano Reconstruction and *Machizukuri* Office to continue to support the recovery process for the residents and the community.
11/1995	The survivors who lost their houses got together to discuss building cooperative housing.
11/1995	Three surveys showed that 1000 people had left Mano. 80% of them wanted to return to Mano.
11/1995	Various events were held such as food festivals, music concerts, children's field trips, exchange trips, cultural exhibitions, sports fairs, and so on.
Early 1996	Existing associations (women's clubs, children's clubs, etc.) were already active and new interest groups for various purposes were established in early 1996.
03/1996	The City of Kobe announced it would build a community service center, senior's home, and disaster restoration housing in Mano
08/1996	Cooperative housing construction began (18 units; completed in August 1997) (Figure 6.13).
07/1996	One third (222) of the 680buildings destroyed in the quake had been newly rebuilt
02/1998	A 100 ton water tank was built for emergency water supply.

(Source: Mano Chiku Fukkou Machizukuri Jimusho 1997)

From their long-term community development practices, the Mano community was able to implement community recovery relatively quickly and effectively. They were able to use their existing resources and also explored possibilities for more resources from outside of the community. They soon established a working relationship with the local government in order to plan and carry out disaster recovery smoothly. The Mano Emergency Headquarters was established and organized quickly and effectively, and this organization played a key role in negotiating any issues with other emergency relief agencies, providing technical assistance for the local residents, and pressuring local government for building temporary and permanent homes. Under stressful and difficult circumstances, the Mano community was still able to increase their community capacity, which probably contributed to their not increasing community vulnerability.

6.3.5. Housing Recovery

The physical vulnerability of the Mano community was high before the quake since about 45% of houses in the community were built over 70 years before. About 680 homes were destroyed in the earthquake and the following fire. In total, 60% of the houses were inhabitable soon after the quake (Miyanishi 1995: 21). A home is an essential element of an individual's life and that is where disaster survivors must start their lives again. In disasters such as the Kobe earthquake, which occurred early in the morning when most people were at home, people's safety was determined by the building structure of the homes they lived in. Similarly, finding or re-building permanent homes to enable survivors to re-settle and re-start their daily activities can make a huge difference when it comes to the timeliness of their recovery.

In the case of Mano community, there were some instances before the quake where local government offered housing renovation projects. The local government acquired available lands to build apartments so that the residents whose homes were old and in poor condition could move into the apartments. Mr Miyanishi had recommended in the 15 years before the earthquake that the residents consider moving into this public housing provided by the local government. The very first apartment was built in 1982 providing 16 units. One of the public housing renovation projects built in 1985, with a total of 15 units, was comprised of 12 households who were the previous residents of the land that the new housing was built on (Miyanishi 1989). Although it was not an earthquake the residents were afraid of, they knew their homes were very old and unsafe. They knew their homes needed major repairs (Hirohara, 2002). As Hirohara's (2002) survey suggests, most residents wanted to fix their homes, but due to complex ownership issues, the repairs were not easy to make particularly for the tenants. Table 6.12 below indicates the complexity of ownership in Mano. Only 25% of property was owned by, built by, and used/lived in by the same individuals; the remaining 75% of property had multiple parties involved in ownership, construction and use.

Table 6.12: Complex Ownership Situation in Mano in 1981

Ownership	AAA	ABB	AAC	ABC
Percentage	25%	20%	30%	25%

A=Land owner; B=Building owner; C=Occupant   (Source: Konno 2001: 208)

Mr. Shimizu, the Mano Town-Building Council Secretary, recalled when Mr. Miyanishi expressed his mixed feelings about the long-term efforts of the Mano community development and the housing recovery from this disaster.

> Mr. Miyanishi told me that ever since he had been involved in Mano community building, he had been encouraging people to renovate and rebuild their old, poorly maintained houses. He said that he was only able to get residents to build about 60 new houses over the last 15 years. But now, after the earthquake, 700 house were destroyed in 15 seconds, and within three

years, they were re-built. He asked me, what does this mean? Our efforts take 15 years to change only 60 units, but a natural disaster takes only 15 seconds to upgrade 700 units! (Machi-Communication 2003b).

However, these 60 homes that the Mano residents were able to rebuild before the quake were intact after the earthquake and the residents appreciated that their lives had been saved by the housing improvement project. They said, "Thank goodness for Mano's long standing community development practice!" (quoted in Hirohara 1996: 126).

Because the residents of Mano had already seen some cases of local government-led housing renovation projects before the earthquake, they were relatively familiar with the process and those who lost their homes thought that housing renovation projects were one of the preferable avenues for them to pursue (Inui 1998). In Higashi Shiriike 7 Block, where a fire started right after the earthquake burning 43 buildings over 1,600 m², the residents of Mano and other interested stakeholders of 18 households and two retail stores rebuilt their own cooperative housing (Higashi Shiriike Court) (see Figure 6.13). The planning team for this project was established four months after the quake, and two and a half years later (August 1997) their new homes were completed. Because it was at a time when new housing in Mano was scarce and more projects like this were needed, the city government made every effort to assist the project, providing consulting services, offering a disaster restoration housing support program, and providing financial assistance for the construction (Inui 1998). "It was a true collaboration of the Mano residents, business owners, the City of Kobe, and Mano community that allowed this cooperative housing project to be successful" (Miyanishi 1998: 81).

Figure 6.12: Collective Housing[46]
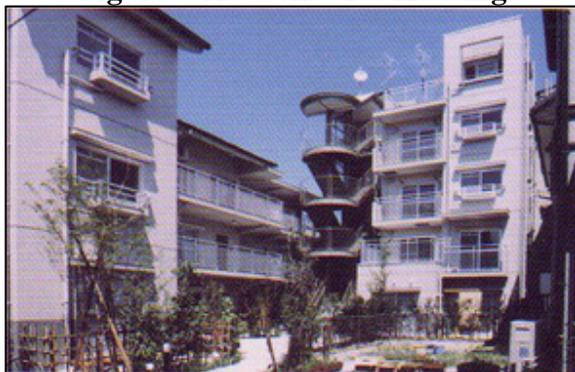
(Source: Kobe Machizukuri Centre)

In three years, 355 buildings were rebuilt privately, including cooperative housing projects. One hundred and fifty housing units were built by the public to provide homes for the disaster survivors (Miyanishi 1998). The Mano community recovery process achieved about 20 construction projects within the first three years following the disaster (Kobe City, 1997) to retrofit Mano's fragile environment. These projects included cooperative housing projects, community centre construction, elementary school renovation, a senior's home, a new child care centre, and the widening of major streets (see Table 6.4 and Figures 6.13, 6.14, and 6.15).

Figure 6.13: Senior Home[47]

(Source: Kobe Machizukuri Centre)

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[46] http://www.kobe-toshi-seibi.or.jp/matisen/1jouhou/syosai/jigyo/img/081_seika/23.jpg
[47] http://www.ashita.or.jp/index.htm

Figure 6.14: Renovated Kindergarten[48]

(Source: Kobe Machizukuri Centre)

Figure 6.15: Widened Road[49]

(Source: Kobe Machizukuri Centre)

These projects helped improve Mano's pre-existing unsafe conditions after the disaster. Mr. Miyanishi stated that the lessons learned from the Kobe earthquake were that while improving the physical environment, Mano was also able to increase community capacity through Mano's interdependent relationships with the government, businesses, community organizations, the residents, and support from outside (Miyanishi 1998). Although the community further improved their capacity level through new housing and other special projects (see Table 6.11), overall conditions of community vulnerability may not have

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[48] http://www.ashita.or.jp/index.htm
[49] http://www.ashita.or.jp/kh/k28ma1/k28ma150.html

improved much as there were still old, fragile wooden homes in the community, and the overall high building density and narrow streets still existed after 1995, which continued to generate vulnerability in the community.

6.3.6. Population Change

When interviewed by Machi-Communication editors to learn about the Mano reconstruction efforts following the Kobe earthquake, the Secretary General of Mano Town-Building Council, Mr. Shimizu said that he regretted that "even for Mano community, which takes better care of the vulnerable; we did not do a great job of grasping the conditions of the vulnerable groups soon after the quake. I still wish that we could have done it differently" (Machi Communication 2003b). They made great efforts to keep the residents within the community rather than in far-off suburban housing locations. But still roughly 1,000 people had left Mano district soon after the disaster. Mr. Shimizu also stated that

> Some of the neighbourhood association leaders were able to locate the residents who had gone elsewhere to evacuate, but some of them did not know where the residents had gone. For 300 people out of 1,000 who had left Mano district, we knew where they were or how we could reach them. However, we could not locate the other 700 people who used to live in Mano. I wished I had known where they were so that we could at least have kept in touch with them and maybe we might have been able to bring them back to our community (Machi-Communication 2003b).

Seven hundred local Mano residents moved away from Mano after the quake, and the leaders of Mano did not have any way to find their whereabouts. Mr. Miyanishi said that those people could have been a group of people who do not like to belong to a specific place and therefore when the earthquake hit their homes, they just left Mano. However, Mr. Shimizu wondered whether this group might have been the most vulnerable part of the population (e.g. single elderly individuals, Korean-Japanese, outcasts, physically disabled,

and low-income families). Perhaps these people lost their homes and went elsewhere, because they had no one else from whom to ask for help in Mano (Machi-Communication 2003), even though the Mano Emergency Headquarters tried to assist the local residents to stay in the neighbourhood. Soon after the disaster, Mano's long-term supporters (Hirohara, Konno, Endo, and Hayashi), including community planner Mr. Miyanishi, came and recommended to the Mano community that it was critical to keep people within the community (Ashita no Nihon wo tsukuru Kyokai 1996). They contributed to creating disaster restoration temporary and permanent housings in Mano so that those who lost their homes could still remain in their neighbourhood.

Nevertheless, the population continued to decline (see Table 6.13). Just before the Great Hanshin-Awaji Earthquake, the population in Mano district was only 5,500. After the disaster, the district lost 1,000 more people. Notably, the number of elementary school students decreased from 1,560 to 309 between 1960 and 1990 (Hirohara 1996: 63). The elementary students numbered 1,800 in the district at its peak, but levels decreased to just 180 after the disaster (see Table 6.3). Mano district experienced the following three trends: first, an aging of the population (26.1% of the Mano population was 65 or older in 2000) much higher than the city average. Second, the average age of households were getting older. Hirohara (1996) suggested that there were 37.6% of households with members who were 65 and older in Mano as opposed to 22.5% of households in Kobe city as a whole in 1985. Third, there was a high ratio of single occupants who were 65 or older. According to Hirohara (1996), 10.3% of households were occupied by one member who was 65 and older compared to 4.8% of household in Kobe city as a whole. This trend is expected to escalate at least for another couple of decades or so (ibid: 64). As the district had already experienced

rapid population loss over the last thirty years, decreases in consumer spending, job

opportunities, productivities, and public revenue continued after the disaster. Such trends

could worsen existing conditions of vulnerability to disasters.

Table 6.13: Population of Mano Community Since 1990

	1990	Pre-disaster*	1995	2000	2005
Mano	5,731	5,474	4,534	4,275	3,972 (73%**)
Nagata Ward	136,884	129,978	96,807	105,467	103,791 (79.6%**)

* Pre-disaster data was taken right before the Kobe earthquake (Jan. 17, 1995). Mano's population was taken on December 1, 1994 from Kobe City data (Kobe City). Nagata Ward's population was taken on Jan. 1, 1995 from Nagata Ward data (Nagata Ward).
** % of Pre-disaster population.
(Source: Kobe City 1995, 2000, and 2005)

While a certain segment of the Mano population left the area (major factor of

population decrease) as mentioned above, there seemed to be an emerging trend of

population component changes in Mano (a factor of population increase). Nagata Ward has

been home for a large Korean population and other marginalized groups including

Burakumin (outcasts) and foreigners (Konno 2001) (see Table 6.14).

Table 6.14: Number of Foreigners From Early 1990s to 2006

	Kobe City Foreigners	Nagata Ward Foreigners					
		Nagata Ward Total	South and North Korea	China	Vietnam	Philippine	Brazil
1992 March	42,799	10,517	-	-	-	-	-
1993 March	43,671	10,422	-	-	-	-	-
1994 Dec.	44,282	10,319	-	-	-	-	-
1995 Jan	44,058	10,268	-	-	-	-	-
1995 Feb	43,560	10,173	9,090	487	471	16	28
1997 March	41,839	9,067	8,111	396	440	24	27
1999 March	42,339	8,562	7,498	427	498	23	36
2000 March	42,685	8,446	7,336	427	519	27	44
2003 March	44,708	8,222	6,930	458	605	36	60
2005 March	44,105	7,975	6,592	498	668	57	36
2006 March	44,414	7,826	6,391	500	721	53	31

(Source: Kobe City Census[50], Kobe City 1997, 1999, 2000, 2003: 43, Census Kobe 1995: 35).

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50 http://www.city.kobe.jp/cityoffice/06/013/toukei/contents/toukeisho.html (2005 and 2006)

Exact population statistics for these groups are hard to gather as Korean-Japanese, once married to Japanese, gain Japanese citizenship status, and also some of the foreigners are living illegally in Japan. When walking with Mr. Miyanishi, he pointed out a public housing complex in which a third of units (about 33) were homes for Vietnamese.

> Every year, new tenants move in to about 5 units in this public housing complex. I think over the last 6 years or so, we have provided about 30 units for newcomers from Vietnam. I do not know much about them, but it is a very new phenomenon in our community (interview with Mr. Miyanishi: 09/26/2003).

The influence of foreigners on the Mano community did not seem an issue at the time of my research, and dealing with race, ethnicity, or cultural diversity was not a subject that the Mano community had focused on before. Nonetheless, if the number of these Vietnamese, Filipinos, or Brazilians continues to rise, it may possibly become a social and cultural issue that creates conflict and disparity in the community. If there were no appropriate approaches or policies taken to resolve such issues, it might potentially increase overall community vulnerability to disasters due to problems of language, communication, and cultural prejudice.

6.3.7. Community Plans and Land Use Plans

According to Mr. Miyanishi, three days after the quake the city government came to see the leaders of the Mano Town-Building Council in order to learn about the impacts of the disaster (Kobe Machizukuri Centre 1999). During the discussions, the city officers asked if Mano was interested in being included in the Earthquake Restoration Land Readjustment Plan to re-develop Mano district. They stated that if the Mano residents would like, a land readjustment project could re-develop larger areas affected by the earthquake and bring

wider roads and open spaces. However, as already noted, the Mano community had previously drafted a Mano District Plan that regulated building codes, street rules, and land-use zoning in the local community at a block-by-block level which involved small scale development. Within the first 20 days after the quake, the Council discussed the idea of future community planning related to disaster reconstruction, yet they decided that they would continue to carry out the existing District Plan and Mano 20-Year Community Plan as part of the disaster recovery plans rather than accept the city's offer of a large-scale land readjustment plan. The Mano Town-Building Council therefore turned down the city government's offer because they had created their own community plans which were still in the process of being completed; essentially, they wanted to stick to this original "bottom-up" plan.

Since most communities in Kobe did not have such a well developed plan in 1995, other communities were more interested in accepting the government re-zoning plan which could bring some benefits in terms of widening streets, improving infrastructure and providing open spaces and public facilities. Mano, however preferred not to be in one of the projects because the Earthquake Restoration Land Readjustment Plan might delay any reconstruction processes in Mano when the Mano residents needed to re-start their businesses and re-settle as fast as they could (Kobe Machizukuri Centre 1999). The Council preferred to focus on their own disaster recovery process, and continue to carry out its existing community plans (Shiraishi et al. 2002). Although the Mano community did not receive funding from the Earthquake Restoration Land Readjustment Plan, according to Doi Kohei who evaluated disaster affected communities one year after the disaster, the Mano

community received about 15 million Yen (US$124,000)[51] from various disaster restoration

related funding agencies and private donations to be used for community building activities.

A CBO, "*Manokko* (the Mano residents)," was set up in November 1995 with the funds that

Mano received (Doi 2006: 22).

The Mano 20-Year Plan ended in 2002 and new ideas and concepts were required to

establish a vision for the next 20 years of the Mano community, but as of 2003 the

community had not been able to propose a new community plan yet. Mr. Miyanishi said that

> After receiving various types of financial support from the Kobe
> government, it became rather difficult for the Mano community to create the
> next 20 year community plan that requires Kobe City to agree with a
> number of projects which involve a certain amount of financial assistance.
> And also for some reason, after experiencing this tragic event, the residents
> are not really eager to retrofit their homes or participate in cooperative
> housing projects. I think that at this stage of our community development, it
> is hard for the residents to see much benefit (interview with Mr. Miyanishi:
> 09/26/2003).

In terms of Mano maintaining its active community development practice, the Mano

Town-Building Council faced difficulties finding alternative ways to finance their projects as

well as difficulties getting continuous commitment and participation from the residents. As

discussed in the literature, creating funding sources and achieving continuous resident

participation are difficult tasks for any community (Green and Haines 2002). Moreover, due

to its high profile as a well recognized successful Machizukuri community, the Mano

community may find high expectations and interests from outside regarding the community

capacity building process. Such expectations may merely put pressure on the Mano's

community development practices. In the post 1995 Kobe earthquake period, the community

has faced various new challenges to overcome.

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[51] US$=121 Yen (as of July 2007)

6.3.8. Betterment of Community—People and Resources

The Mano emergency headquarters ended their own relief efforts soon after all the emergency shelters (eight locations) were closed in Mano on August 20, 1995 (Mano Chiku Fukkou Machizukuri Jimusho 1997; Konno 2001: 153). Mano community leaders realized that the emergency relief period was over and instead, a long-term community recovery period had started. When they closed the headquarters, they established a *Fukkou Machizukuri Jimusho* (the Reconstruction and Community Building Office). The headquarters was basically run by the leaders of the Mano Town-Building Council, who at the time of the disaster had over 15 years experience in Mano community building. Community leaders wanted to create a new organization, the Reconstruction and Community Building Office that could take over the jobs that the Mano emergency headquarters was doing, and at the same time, they wanted to integrate the existing community building functions with current disaster community recovery efforts (Mano Chiku Fukkou Machizukuri Jimusho 1997).

The people who contributed to the running of the Mano emergency headquarters were most often the regular members of the Mano Town-Building Council or *Doshikai* members. These were the leaders of their neighbourhoods and they were used to working together to organize a series of community events. "In many ways, emergency relief efforts were different from organizing community events, but because we had many years of experience in carrying out community activities, our relief efforts were much more effective" (a community leader in Mano, quoted in Konno, 2001: 153).

Mr. Shimizu admitted that Mano was very lucky to have various types of support and

resources. He said that:

> I have to admit that Mano is very different from other communities because
> of the support we receive from the government. To think of it, who would
> give almost 10 billion Yen[52] (about US$ 80 million) to a small community
> like us? (Machi Communication 2003b).

While most communities in the inner-city of Kobe had suffered from loss of local

businesses, Mano community was again lucky to have local businesses come back to their

community after the quake. One example was Mitsuboshi Belting Ltd (a rubber

manufacturing company), one of the larger factories located in the center of the Mano

community. Mitsuboshi Belting Ltd in March 2006 had capital of 8,150,251,031 Yen.

Annual sales in 2006 were over 74 billion Yen. It was listed in the First Sections of the

Tokyo Stock Exchange and had ten locations of offices and factories and fourteen group

companies and factories located in Asia, Europe, and North America (Mitsuboshi Belting Ltd

2007).

The Mano community had been the home of Mitsuboshi Belting Ltd from its

establishment in 1919, until 1992. In order to gain better accessibility and mobility than their

business competitors, the company moved its head office to Tokyo (they kept the factory

however in Mano). Nonetheless, after the disaster, the Mano Town-Building Council

requested that they relocate their head office to Mano again. The company agreed with their

idea and relocated their head office to Hamazoe St. Block 4, Mano in November 2000 even

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[52] According to Shiraishi et al.'s study, Kobe City spent about 4.5 billion Yen (as of 1992) for the land
acquisition after pollution-creating factories left Mano. The lands that Kobe City purchased were used for
community parks, public housing, and other community facilities for Mano (Shiraishi et al. 2003: 64).

though this relocation was not completely beneficial to the company[53]. The experience of the

earthquake—helping the residents to put out the fire and offering their company gymnasium

for use as an emergency shelter—caused the company to become aware of the importance of

being closely connected with the local communities that they operate in. Since then, they

have supported a number of community activities, such as a summer festival, and New Years

events, and they have played a key role as a community leader in facilitating community

activities. Indeed, Mitsuboshi Belting Ltd won a "*Bosai Kouro Sho* (a prize for disaster

prevention and mitigation)", given by the Cabinet Office in September 2002[54] and a "*Kobe

Shimbun Heiwa Sho* (a peace prize)" given by Kobe News Paper in May 2004, for its

philanthropic contributions to Japanese disaster mitigation and community development[55].

While struggling to improve existing vulnerability conditions, this type of effort to

retain commercial enterprises and other assets and resources in the Mano community was an

important strategy to further increase community capacity. However, the overall trend in

Nagata ward after 1995 was a decline of employment and enterprise. Since the population of

Mano did not recover to the pre-disaster level and at the same time the population was aging

(see Table 6.3 and 6. 13), more Mano residents probably became welfare recipients. This was

similar to the trend in Nagata ward in 2003 (see Table 4.6). Nagata ward and the Mano

community experienced trends similar to other inner-city areas in Kobe which made it

difficult to further build community capacity.

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[53] http://www.chibiz.jp/modules/wordpress/index.php?p=18 (Access date: 02/22/2007).
[54] http://www.bousai.go.jp/kouhou/pdf/kouhou011.pdf (Access date: 02/23/2007)
[55] http://www.prop.or.jp/clip/2004_1/040503kobe.htm#b (Access date: 02/23/2007)

6.4. Conclusion

The material covered in this chapter indicates that the Mano community was a district that benefited from its prior history of community building efforts. The Mano Town-Building Council and various associations provided real strength of community in times of crisis and allowed more effective response to the area's fires in 1995. Mano's "web" of networking practices (Inui 1998) were the basis of its community based organizations. Yet until this disaster, no one really recognized what Mano had accomplished since the 1960s.

Within Japan, Mano's community efforts were distinctive. Yet, such accomplishments would not have been possible without central and local government support in the form of financial assistance and collaborative working relationships. For example, the Kobe city government provided a most favourable environment for Mano community to pursue its goals, and provided financial assistance to help Mano community to implement its community plans[56]. It was the creation of the Basic Law for Pollution Control by the national government in 1967 which helped Mano community to fight the pollution created by factories. Moreover, the Mano 20-year-Community Plan would not have been possible without the legislative revision of the City Planning Act that introduced the District Planning Law (1980) that enabled Kobe City to create a new law "*Kobe Machizukuri Jorei* (Kobe Community Planning Ordinance)" in 1981. The national government also made changes in the Japanese urban planning legislation in 1980 (i.e. the creation of the District Plan, which allowed Mano to develop small-scale community plans).

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[56] According to Doi, one year after the disaster, the Mano community had received about 15 million Yen from various disaster restoration related funding agencies and private donations to be used for community development related activities (Doi 2006: 22).

These are just some examples of how more favourable conditions in the Mano community were closely tied to a series of government policy developments. During the reconstruction period of the Kobe earthquake, while many communities had to depend on governments for most of their resources, the Mano community was also able to maintain its autonomy to access various public resources as mentioned in sections dealing with the creation of the Mano emergency relief headquarters. However, some people had a slightly different view of what happened here and argue that Mano somehow gained a special privilege within Kobe to practice community development its own way, and that this right was not accorded to other areas. For instance, Mr. Tanaka Yasuzo, a founder of Machi Communication in the Mikura community (discussed in Chapter 7) stated that:

> The government allowed Mano community to do this and do that, but they did not allow us to do anything we wanted. I think that was really not fair of the government (Mr. Tanaka: 08/07/2003).

Another issue covered in this chapter is the importance of community leaders. While there is no clear evidence to prove it, it seems that the contributions of Mr. Miyanishi to Mano community development were not only his ability to facilitate the solution of community problems and organize community activities, but also his previous experience in working for the City of Kobe and his strong network in academia and with planners in Tokyo. This allowed him to be able to obtain critical information such as that regarding government legislation changes and general trends in urban planning faster than anybody else (interview with Mr. Miyanishi: 09/25 and 10/10/2003).

Just when Mano community leaders were about to discuss the renewal of the "Mano community plan (1980)" (looking at the next 20 years/ 1980 to 2000), the Great Hanshin-Awaji Earthquake hit the Kobe area. The existing Mano 20-year Community Plan to improve

community well-being had made slow but steady progress to retrofit Mano's fragile old areas by providing projects to widen streets or construct new housing at the time of my fieldwork in 2003. The 1995 disaster had helped speed up and stimulate the existing community plans because of the increased awareness of the importance of disaster prevention and mitigation among the Mano residents. However, there were some areas that remained physically vulnerable in 2003, and at this time the aging of the population was still escalating. *Doshikai* (a CBO that trained future leaders) played a very important role in stimulating and enabling the younger generation of Mano residents to get involved in community issues and become Mano leaders, but as the overall population becomes older, it may be a challenge to find sufficient numbers of younger Mano residents to continue this organization. In addition, the community needs to find someone who can take the role of community planner after Mr. Miyanishi (1944-) reaches retirement age. The sustainability of the Mano community is therefore in many ways uncertain, which may produce more vulnerability to future disasters.

As of 2003, the Mano community may have reached its peak in terms of community development. Simply put, they may have been exhausted from the Kobe reconstruction activities. While the Mano community was able to merge their disaster recovery effort with the existing Mano 20-Year Community Plan, the community went through a transition from disaster recovery to everyday community development. Through such a transition, Mano gained community capacity such as well established CBOs, organized community activities, and continuous high participation from the residents; however, various conditions still remain to produce community vulnerability, such as stagnated population growth, aging of the population, lack of integration of foreigners, and the existing fragility of many buildings

and community infrastructure. In sum, this may make it very difficult to make concrete improvements in future years.

I argue that community recovery from disasters can be a "window of opportunity" to improve existing problems and address potential issues (Haas et al. 1977). In the case of the Mano community, it seemed that the community was able to use this opportunity to gather more resources from the city government to enhance their community capacity and to improve existing vulnerability, reducing it to a minimum level. However, in relation to community development practice, it seems that Mano's long-term disaster recovery activities utilized or exploited community resources and privileges to such a degree that recovery actually caused the community to become exhausted and perhaps unable to make further planning efforts, as is attested to by their struggle to create the next 20 Year (2000 to 2020) Community Plan for Mano. Moreover, as the community becomes famous for an outstanding Machizukuri community, the expectations for keeping up such excellence may pressure the Mano residents and somehow undermine their progressive, bottom-up and local-oriented community development approaches. There need to be alternative ways to support the future development of the Mano community. To do this, Mano would need to find more diverse approaches to enhance resources, and more variety of sources to choose from to obtain more assets to further enhance Mano's existing capacity. However, any approach would first require Mano to reduce its existing vulnerability.

CHAPTER 7 Case Study 2—Mikura Community and Machi-Communication (CBO)

7.1. Introduction

In this chapter, Mikura community's vulnerability and capacity conditions before and after the Kobe earthquake are examined. The format of this chapter is similar to that of the previous one. The historical background of Mikura community development is discussed first and the impact of the Kobe earthquake and the recovery activities are introduced. One of the purposes of this chapter is to understand the relationship between community vulnerability and capacity as evidenced in this second case. By applying the research framework (Figure 5.2) developed in Chapter 5, the two cases of Mano and Mikura are presented in such a way as to identify community vulnerability and capacity as they are created through processes and activities that are part of community development. Four tables (Tables 5.1 to 5.4) developed in Chapter 5 are employed to examine the data. Each table is used to examine for the pre- and post-disaster periods.

Factors and Potential Indicators of Community Vulnerability (Table 5.1),

Factors and Potential Indicators of Building Community Capacity (Table 5.2),

Factors and Potential Indicators of Community Development (Table 5.3), and

Factors and Potential Indicators of Community Recovery (Table 5.4).

Data to create theses tables are sought through literature, interviews, and field work. Although the analysis is made in Chapter 8, key factors and conditions related to the framework are identified in this chapter.

As with the Mano example, the purpose of introducing the Mikura community case study is to understand how community development practices in the past (prior to the 1995 quake) influenced the process and outcomes of disaster recovery post 1995, and how community recovery and community development practices are related to each other. Compared to Mano's successful and effective community development practice in the pre-disaster period, Mikura community was relatively inactive at the time of the disaster due to a lack of effective CBOs, leadership, and democratic decision-making process. Through the field work, how such a less integrated community experienced the Kobe earthquake and the subsequent recovery processes is examined. The data used in this chapter were mostly obtained from the field work in 2003 and consists of interviews and field observations, as well as printed documents from various sources such as Machi-Communication and local government. Some articles about both Mikura and Machi-Communication in books and newspapers were also consulted. Machi-Communication (CBO) also publishes its own newsletter, "Monthly Machi-Commi" (from June 1997 to the present), and they also provide updates on their activities on their internet website. Their data have been useful since in general there is not much secondary information available to help understand Mikura community recovery.

Table 7.1 is a chronological summary of Mikura community development history before the disaster and disaster reconstruction activities after the Kobe earthquake.

Table 7.1: Chronology of Mikura Community Development and Disaster Recovery

Year	Month	Event
1978		24 groups consisting of NHAs, local merchants, women's clubs, children's clubs, senior's clubs, etc. in Misuga district (the Mikura community was part of this district at that time) established a Misuga Housing Improvement Council to deal with problems relating to poor housing conditions in the area.
1981		The Misuga district focused on re-development issues. They requested that Kobe City purchase the lands vacated by factories that had left the area so that the lands could be used for new homes for new-comers.
1982		The Misuga Housing Improvement Council became the Misuga Town-Building Council, a CBO recognized by Kobe government.
1986		The Misuga Town-Building Council submitted their community plan proposal to the Mayor of Kobe City.
1988	January	The Misuga Town-Building Council published "Misuga District Machizukuri— 10 Years of Community Planning" report.
1995	January 17	The Kobe earthquake occurred.
1995	March 17	Announcement of the Disaster Restoration Land Readjustment Projects and Mikura 5 and 6 blocks were designated as the Misuga Nishi project.
1995	April 23	Mikura 5 and 6 Town Building Council established
1996	April 1	A volunteer group supporting recovery of the Mikura community, Machi-Communication, was established.
1997	June	Machi-Communication first published their monthly newsletter, "Monthly Machi-Commi."
1997	July 11	The Town Building Plan was created and submitted to Kobe City.
1997	August	*Mikura Gakko* (The Mikura community planning workshop) was held for the first time by Machi-Communication. The workshop has run two or three times a year since then.
1998	January 8	The first Mikura land exchange agreements were announced to commence the Disaster Restoration Land Readjustment Projects (Misuga Nishi).
1999	Sept. & Oct	Two high-rise apartment buildings (90 units) were built in the area by the Disaster Restoration Permanent Housing Projects.
2000	January	Collective housing, Mikura Five (12 units) was built.
2000	April	Plaza Five was opened.
2001	July	The Mikura Neighbourhood Association, consisting Mikura St. 5, 6, and 7 blocks, was established.
2003	January 24	The Mikura community received *Dai 7 kai Bousai Machizukuri Taisho* (the seventh Disaster Resistant Community Planning Prize) from the Minister of Public Management, Home Affairs, Post and Telecommunication.
2004	January	New community center was opened.
2004	July	Plaza Five was closed and its function was transferred to the new community center.
2004	September	An NPO, Magokoro Mikura, was established in order to support the senior residents of the Mikura community.
2005	March	The land readjustment Misuga Nishi (Mikura 5 and 6 blocks) project was completed.

(Source: Machi-Communication 1997 to 2005; the Misuga Town-Building Council 1988)

7.2. Mikura Community Development

7.2.1. Overview of community development before the disaster

Mikura 5, 6, and 7 Blocks (Mikura community hereafter) is located in Nagata ward, Kobe City, Japan. It is about a ten to fifteen minute subway ride from the central area of Kobe City (Sannomiya Station). The community experienced the inner-city Kobe economic rise and fall between the 1960s and 1980s like many other communities in Nagata ward, such as the Mano community, which is located less than 2 km south of the Mikura community (Figure 7.1).

Figure 7.1: Map of Kobe City, Nagata Ward and Mano Community
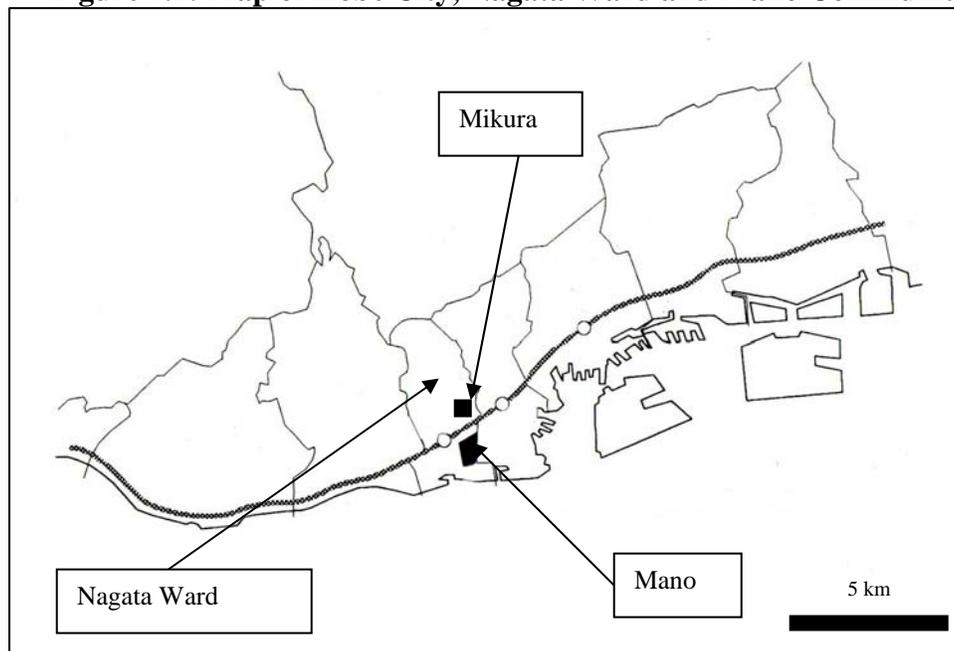
At one time, the Mikura community (6 ha) was a part of Misuga district redevelopment plan (31 ha) created in 1978 to achieve a rejuvenation of the inner-city. The Misuga District Town Building Council (*Misuga Machizukuri Kyogikai*) was established in order to represent the residents of the Misuga district in discussions and negotiations subjects regarding community planning of the area with local government (see Figure 7.2). According

to a report published by the Misuga District Town Building Council in 1988, the Council was

formed by 24 groups consisting of neighbourhood associations, local merchants unions,

woman's clubs, children's clubs, and senior's clubs in Misuga[57] district to solve inner-city

problems faced by the district. Originally the council was established as the Housing

Improvement Council to deal with problems of poor housing conditions and worsening air

quality caused by the local chemical and rubber factories, as in the case of Mano. The report

was published at the time the Misuga district was most active in organizing the community

and therefore was pivotal in terms of demonstrating the accomplishments they had made and

describing the issues they still needed to deal with (e.g. widening streets, construction of a

neighbourhood centre, and improvement of commercial areas) (the Misuga Town-Building

Council 1988).

Figure 7.2: Mikura 5, 6, and 7 Blocks and Misuga District
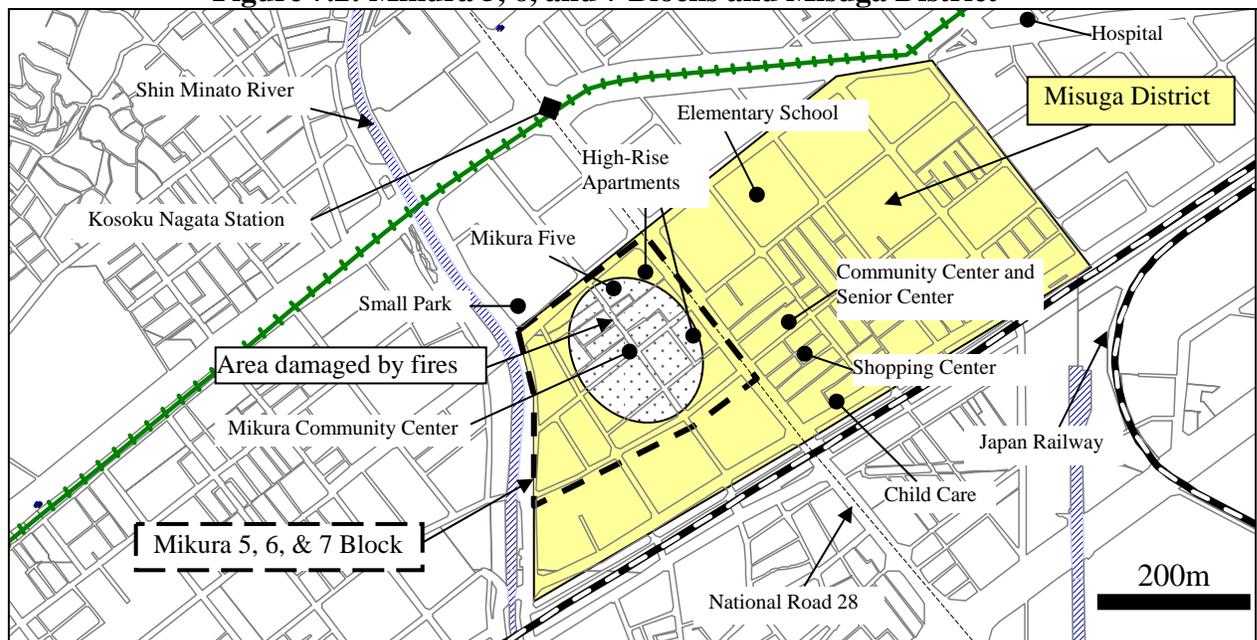
(Source: Misuga Town-Building Council 1988; Machi-Communication 2003a)

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[57] Misuga is the name of the district in Nagata ward consisting of Mikura 1 to 7 blocks, Sugawara St. 1 to 7 blocks and Ichiban-cho 2 to 5 blocks (Misuga District Town-Building Council, 1988).

After the Kobe earthquake, the Misuga district was divided into two areas—Misuga Higashi (the east side) and Misuga Nishi (the west side). The area of my study is Misuga Nishi (the west side of Misuga district) (see Figure 7.2). The Misuga district as a whole does not function as a community unit any more because of the discontinuation of the Misuga District Town-Building Council that held the area as a community. However, to understand the pre-disaster community conditions of Mikura, it is necessary to depend primarily on this Misuga district development plan report since there were no documents specifically addressing Mikura 5, 6, and 7 Blocks community activities and planning.

The early days of Mikura community development were not well remembered by the residents (interview with RM-1, 2, and 3) as it was a part of the larger Misuga development area and the east side of the Misuga district (business, commercial and residential area) had a stronger influence over the community decisions than the west side where the Mikura community was located. The lack of focus of development on the West side reflected the fact that the Mikura community had fewer resources (e.g. CBOs, leadership, and skilled and knowledgeable residents). These factors were all indicators of low community capacity as well as factors influencing their community vulnerability (Figure 5.2).

7.2.2. Historical Background of Misuga District Development

The history of Misuga district goes back to the time of WWI when there was a high demand for the production of matches. Small match making factories were built in the area and gradually other urban facilities such as housing, shopping areas, schools, roads and public transportation infrastructure were built and developed around them. During the 1930s, the match making industry was replaced by the rubber industry, and other factories using

chemical materials moved in to the area. This area was a highly populated district during 1950s and 1960s with many factories, workers and their families all residing in this small area.

> Around lunch time, everyone came out into the street and went to get something to eat. And the streets soon filled with so many people that I could not see the road (interview with RM-3: 10/03/2003).

However, these factories created serious pollution problems by the 1960s, yet unlike Mano community, people in Misuga district did not experience a significant worsening of the pollution problem in the 1960s because the economy was already in decline and factories were leaving the Misuga district one by one (the Misuga Town-Building Council 1988; interview RM-3). As these industries moved to the suburbs of Kobe, the Misuga district lost a large number of people, especially those in the younger generations, and the population became aged as a result. In 1960 the population was 8,347; but by 1980 it had decreased drastically to 4,499 (Misuga District Town-Building Council 1988). The Mikura community was already experiencing inner-city decline long before the Kobe earthquake hit the area in 1995 (Miyasada et al. 2002). The leader of the Misuga district, Mr. Komuro Tadao, exclaimed in the early 1980s that

> If we do not do anything right now, our community will soon become a slum (quoted by PPC-1: 10/18/2003).

When the Misuga district faced this inner-city decline, community leaders began focusing on re-development issues. In 1981 they requested that Kobe City purchase those lands from the factories that had left the community so that homes could be built to attract more people to move in and work in the area. Construction of new high-rise apartments, renovation of the Mikura Elementary School, construction of a new gymnasium for the elementary school, renovation of a senior's home, and construction of a public park were

implemented by the City. The Misuga district Town-Building Council[58] created a community

development plan in 1986 to further improve the community (Misuga District Town-

Building Council 1988). Except for the construction of a public park, the other development

projects were all located in the east side of the Misuga district, and the Mikura community,

located on the west side of Misuga, did not benefit much from these projects (ibid).

The above narrative shows that the Misuga district had once been actively involved in

community building in the 1970s and 1980s. However, as inner-city problems persisted,

Misuga gradually lost momentum in this regard by the time that the Kobe earthquake hit in

1995 (Miyasada et al. 2002). There were no simple explanations for why Misuga district lost

its community development momentum. Their long-range planning report was completed in

1988, yet after that there was no written document outlining any future progress. One reason

was that a leading figure in the community, Mr. Komuro, experienced serious health

problems and was unable to lead Misuga district any longer in the late 1980s. Immediately

after the Kobe earthquake, he passed away (interview with PPC-1: 10/18/2003). Perhaps as a

result, the financial management of the Misuga Town-Building Council was very poorly

handled and the Council had difficulties in even balancing their accounts just before the

earthquake.

> Since I was an accountant, the Council asked me to take care of their finances
> because the person who was in charge had used some of the Council money
> for personal reasons (interview with RM-3: 10/03/2003).

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[58] In 1982, the Misuga Housing Improvement Council became the Misuga Town-Building Council, a CBO
recognized by the Kobe City *Machizukuri* Ordinance (see Chapter 3).

Another reason was that the Misuga Town-Building Council was mostly run by the

owners of local manufacturing, wholesale, retail, and small eating and drinking

establishments (they were located mostly in the eastside of Misuga district). As the economy

of Misuga declined, these owners had to focus on their businesses just to survive. They no

longer had time to focus on community development, so participation from the members of

the Council dwindled (interview with PPC-1: 10/18/2003). Moreover, as discussed in

Chapter 3, these community based organizations tended to retain the traditional decision-

making approach, which is top-down and bureaucratic. This style was unpopular with some

residents who were not in positions of power (Tanaka 1990; Nakamura 1990).

The consultant for Mikura community, PPC-1, recalls how he first started his job of

assisting with community development for the Misuga district:

> When I first started this job in 1988, the Misuga Town Council was already in
> decline. I attended a meeting for the first time and the meeting was about
> expanding the road. The residents were furiously angry and did not want to
> agree to the plan. Later I realized what was happening in that meeting was
> that quite often the residents did not know much detail about the decisions
> made by the Misuga Town-Building Council. The road expansion involved
> relocation of some of the residents' homes and businesses about which the
> residents had not been well informed. The council was made up of the leading
> business owners and the decision-making process was really top-down. The
> council made decisions and the residents were notified of the decisions after
> they had been made. There was not input from the residents in the council's
> decision making process. In other words, actual participation by the majority
> of residents was pretty low. The Council meetings were attended by the
> leaders (representatives) of the small groups. That is why the residents were
> so angry at the Council. Many residents in Mikura did not remember much
> about Misuga Town-Building Council and their activities because they were
> not allowed to participate in most decision making processes (interview with
> PPC-1: 10/18/2003).

As mentioned in Chapter 3, neighborhood associations, such as the Misuga Town-Building Council, often merely reinforced the traditional top-down, bureaucratic approach. As a result, some communities gradually lost resident participation as residents recognized that those neighborhood associations were not necessarily helping to solve community problems through fair, open and democratic processes.

Moreover, while the pivotal report (1988) on Misuga district development correctly claimed that the Misuga district had been active in improving community life and the environment, it is hard to tell whether the residents were really active in community affairs or whether it was merely the leaders who were active in making decisions on community issues. It seems that resident participation, such as it was, may have been more of a token formality than a reality. The residents may have participated out of a feeling of obligation rather than a genuine desire to participate. As Nakamura (1990) argued that many NHAs in Japan were organized by formality rather than active citizen participation, the Misuga district may have been a typical Japanese NHA. It is also not clear whether the leadership had a clear vision of how to improve the Misuga district's quality of life.

If the community has been active and the people had participated in community activities, then they probably would have had a more positive experience in the past (i.e. prior to 1995) which should have led them to participate in community recovery when the community was severely affected by the earthquake. From interviews I conducted in 2003, two former residents of this district did not seem to remember much about the community activities right before the earthquake (interview with RM-1 and RM-3: 10/03/2003).

In terms of identifying conditions of vulnerability and capacity, unlike Mano, the Misuga district lacked effective leadership and residents' participation which resulted in poor

decision-making processes. According to the framework (Figure 5.2), these were key factors that influenced the Mikura community vulnerability in the pre-disaster period. Moreover, like Mano, the inner-city issues (mixed industrial/residential land use, old wooden housing, high building density, narrow streets, economic decline, population decline and aging, etc.) were crucial factors increasing Mikura's physical vulnerability.

7.2.3. The Misuga District, Integrated or Fragmented?

Although it is difficult to determine if the Misuga district was disorganized in 1995 just prior to the quake, there were, in fact, some positive signs of community life. This suggests that the Misuga district was not entirely poorly organized. Some factors, such as the prevalence of traditional decision making approaches, were not appreciated by local residents and resulted in a low level of public involvement. Other factors could suggest how well resourced the Misuga district was well resourced, in ways that increased the community's quality of life. Most urban facilities, such as a subway station, the general hospital with its emergency facility (located in the block next to Mikura St. Block 1), school play grounds, daycare centers, the community center, shopping centers and stores, and elementary (see Figure 7.2), were available to the residents in Misuga district before the earthquake (Misuga District Town-Building Council 1988). There were also subway, bus and train stations close to Misuga district. Many residents had their offices or work places close to their home, which was another attractive feature of Misuga district. Furthermore, the density of the housing conditions in this district helped people to get to know each other very well.

> I could even tell by the smell coming from next door what they were eating at dinner every night (interview with RM-1: 10/03/2003).

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Coffee shops, restaurants, and bars in the community were places where people spent time exchanging information and enhancing networks. Neighbours knew each other very well and they had a tendency to help each other and they depended on each other. For instance, when they ran out of milk, or eggs, they just asked their neighbours if they could borrow them (interview with Mr. Tanaka: 08/07/2003; RM-4: 08/21/2003).

Because the national road No. 28 (the Nagata Line) runs through the middle of Misuga district (see Figure 7.2), the community had slowly developed two different characteristics over time. First, it had a mixed residential and industrial use in the west; and second, it had a mixed residential and commercial use in the east (see Figure 7.2). These physical factors weakened the Misuga district as a community, inhibiting its ability to actively work on community development practices. Overall, in the pre-disaster period, the Mikura community had low community capacity and was highly vulnerable to disasters. There seemed to be few activities to reduce community vulnerability in the pre-disaster period.

7.3. Mikura's Community Recovery from the Kobe Earthquake

7.3.1. Overview of the Impacts from the Earthquake

The earthquake smashed the old wooden buildings and subsequent fires burned 70%

of Mikura (5, 6, and 7 Blocks) and killed 27 people[59]. The damage occurred mainly in Mikura

5 and 6 Blocks area. The Mikura 7 Block had very minor damage due to the fact that this

block was an industrial area consisting of factories with relatively newer structures (see

Table 7.2). Overall therefore, the Mikura area was affected by the fires which caused the

residents to evacuate the area.

Table 7.2: Mikura Community in 1995 (consisting of Mikura 5, 6 and 7 Blocks)

Area	About 6 ha. (Mikura 5, 6, and 7 Blocks)
Population	394 (2005 census) (735 on January 1, 1995)
Disaster damage through the Kobe earthquake	• 70% of the area was burnt. 27 people died. • In Block 5 and 6, 242 out of 334 buildings were destroyed. • Mikura 5 and 6 Blocks were designated as part of the Disaster Restoration Land Readjustment project on March 1995.
Community-based Organizations	• Mikura Block 5 and 6 Town-Building Council (1995), • Machi-Communication (1996/ consists of volunteers from outside of the community). • Mikura Block 5, 6, and 7 Neighbourhood Association (2000).
Community Planning Consultant	*Aban Toshi Keikaku Kenkyusho* (Private planning consulting company)
Business and industry	Small retail stores and paper, metal, wood processing factories.

(Source: Monthly Machi-Commi 12/2004; Kobe City 2004[60]; Statistics Bureau 2005)

Table 7.3 shows the disaster impact comparisons with the Mikura and Mano

communities as well as Nagata ward and Kobe city. The Mikura community was more badly

affected by the fires than Mano, Nagata ward and Kobe city. 58.9% of housing was burnt in

Mikura by the subsequent fires after the earthquake, while only 1.6% of housing was affected

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[59] The east side of Misuga (now called Misuga Higashi and consisting of Misuga 3 and 4 Blocks) was also severely affected by the quake and 93% of the area was burnt (Kobe City 1999).
[60] http://www.kobe-toshi-seibi.or.jp/matisen/1jouhou/syosai/jigyo/

by the fires in Mano. The Mikura community experienced this disaster most severely than other disaster stricken areas.

Table 7.3: Damage Comparison between Mikura, Mano, Nagata, and Kobe

	Kobe City	Nagata Ward	Mano	Mikura
Area (km2)	552.72	11.46	0.4	0.06
Population (pre-disaster)*	1,520,365	129,978	5,474	735
Population in 2005 census	1,525,393	103,771	3,972	483
% (2005 pop./pre-disaster)	100.3%	79.8%	73.0%	65.7%
Death	4,571	921	19	27
% (Death/pre-disaster pop.)	0.30%	0.71%	0.35%	3.67%
Housing in pre-disaster**	540,200	50,660	2,712	382
No. of housing units destroyed	74,386	20,280	680	285
% (destroyed housing/pre-disaster)	13.8%	40.0%	25.1%	74.6%
No. of housing units burnt***	6,965	4,759	43	216
% (burnt housing/pre-disaster)	1.3%	9.4%	1.6%	56.5%
No. of houses partially destroyed	55,145	8,282	1,400	34
No. of people evacuated	236,899	55,641	1,400	****
No. of temporary shelters built (closed by Jan. 2000)	39,178	647	104	30

* Kobe and Nagata population was as of January 1, 1995. Mano population was as of December 1, 1994.
** The number of housing units in Kobe and Nagata was as of 1993. The number of housing units in Mano was as of December 1, 1994. The number of housing units in Mikura was as of January 1, 1995.
*** The number of housing units burnt by subsequent fires is included in the number of destroyed houses.
**** Data unavailable.
(Source: Nagata Ward 2007; Kobe City 2005, 2007; Mano Chiku Fukkou Machizukuri Jimusho 1997; Machi Communication 1999, 2001 and 2004b and 2004c; Kawata et al. 2001; Miyasada et al. 2002)

7.3.2. Early Recovery Period

Fires broke out soon after the earthquake hit around the Mikura community area. Because water pipes around the area were broken, fire trucks did not have access to water even if they were able to drive into the Mikura neighbourhood. The residents did not know that the water pipes were broken, and believed that the fire trucks would come very soon and deal with the fires. A female resident recalled that:

> I heard the sirens of fire trucks everywhere so I thought they would come very soon. We waited and waited but they never came. And everything was burnt. If I had known that they would not come, I might have been able to take at least some of my belongings from the house. But silly me, I did not

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think that the fire trucks would not come and my house would be consumed by fire. I wish I had known (interview with RM-2: 09/29/2003).

The residents of Mikura community passively watched as their homes burnt to ashes. They lost everything. Many of them were wearing their nightgowns and had bare feet when they left their homes (Figure 7.3).

Figure 7.3: Fires Affected the Mikura Community and Misuga Higashi on January 17, 1995
(The burnt-out area at the bottom left is the Mikura community, and the burnt-out area at the top right is Misuga Higashi)

(Source: Kobe City)

Due to the fire, many residents had to immediately evacuate the area. As a result the residents were scattered across Kobe and the Hanshin region in temporary shelters, and remaining neighbours were unable to determine their whereabouts. Overall, there was no community organization or leader in Mikura (unlike Mano) who could organize the

neighbourhood after the quake. Only a few people tried to stay in near by emergency

facilities such as Nagata Ward Hall so that they were able remain closer to the Mikura

Community. The remaining residents discussed how others could return to the community.

The government agreed to remove the debris at no charge, but the property owners had to

first sign a paper to give the removal contractors permission. The remaining residents needed

someone to lead this task otherwise the Mikura community remained as it was (burnt-out).

However, none of the executive members of the Misuga Town-Building Council or

neighbourhood associations wanted to devote themselves to the recovery of the community

because they were more concerned about their own personal recovery issues (interview with

MC-S4: 07/30/2003). Some of the residents went to ask these leaders for help, but they

turned down the request due to their age (they were in their 70s) and chronic health

problems.

> I went to see the chair of the Council more than a couple of times to get some
> help in organizing the Mikura community. But he kept telling me that he was
> too old and his doctor recommended that he not participate in any stressful
> business due to his high blood pressure. He told me at the end, I am telling
> you that I cannot do it. Why don't you do it? (interview with RM-2:
> 09/29/2003).

Realizing that the chair of the Council was not willing to help organize the

community, this female resident continued to ask other members of the Council and soon run

into her neighbour in one of the emergency shelters. They shared their concerns for the

community (e.g. When can all the debris be removed? How will the Mikura resident survive

without homes? Are the landlords going to re-build their apartments again?). These two

female residents became the key individuals who involved other concerned residents as well

as emergency relief volunteers in starting the Mikura community recovery process. These

two women later became vice presidents of the Mikura Town-Building Council and

continued to devote their time and energy for the community recovery. They also supported

the establishment of Machi-Communication (interview with RM-2: 09/29/2003).

A few residents who remained in the area came together with outside volunteers to

discuss ways to collect the owners' agreements, to assess the possibility of setting up

temporary homes, and to deal with various other concerns.

> I thought that we could camp by the riverbank. The riverbank was not
> damaged and there seemed to be plenty of space for putting up tents for the
> evacuees. I thought that it was a great idea and went to the local government.
> But they did not give me permission to do that. I think that they were afraid
> of the possibility that people might never leave and might live there forever
> (interview with Mr. Tanaka: 08/07/2003).

Once the debris was removed, residents were able to re-build their homes. However,

due to the high rate of tenancy, most houses were owned by other parties who did not live in

Mikura. Consequently, many property owners were reluctant to re-build due to Japan's

economic recession. So, unlike the situation in Mano, many of the residents were unable to

move back to their homes, due to both the wider extent of fire damage and also a lack of

leadership and management skills.

Kobe government announced the city-wide Disaster Restoration Land Readjustment

projects on March 16, 1995 for the purpose of rebuilding safer communities (Kobe

Machizukuri Centre 1999). Because the government created the readjustment plan within a

very limited time (just two months), they did not allow time for sufficient public

consultation. Most communities in Kobe that were designated for the land readjustment

projects did not have existing community plans that could merge with the recovery activities,

as was the case in Mano, and therefore communities were not in a position to reject the

projects. The city government was nonetheless criticized very harshly for not including much

community input and for basically developing the zoning plan without consultation with the

residents (Hyogo Prefecture 2006a). A resident of Mikura community recalled the time of the

announcement:

> There was a flyer on the electricity pole saying that the government was
> going to have a meeting to explain the disaster restoration land-zoning plan.
> It said "Anyone is welcome. Please come and hear about the plan." So my
> neighbours and I went to the meeting. The local government city hall was full
> of media and people who were interested in learning about the plan, both
> residents and others. But the government officers blocked the people and
> media from entering the room and basically, we were all locked out and none
> of us were allowed to go to the room to hear about the government decisions
> over land zoning. Just witnessing this incident, I felt, "This government
> approach is not going to work. This is not good. We cannot trust the
> government. We have to take care of our community by ourselves" (interview
> with RM-2: 09/29/2003).

Some residents (MC-S4; RM-1; RM-2) who witnessed this instance of the

government's top-down approach, spoke to each other on the way home from the meeting,

discussing how important it was that they should come up with a plan. One way for the

residents to have their interests and needs included in the re-zoning plan was to establish a

town-building council. As the local community was unfamiliar with the process and given

the level of distrust of the government, the projects moved slowly and many residents were

prevented from rebuilding their homes until the relocation negotiations and other land use

issues had been cleared and settled[61].

Many of the residents of the Mikura community were scattered and the few remaining

residents (134 people soon after the quake) needed help from someone (Machi-

Communication 1999). Mr. Tanaka, who ran a wholesale business located in Mikura block 5,

and other volunteers agreed to assist Mikura community with reconstruction. On April 23,

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[61] The rebuilding after the Disaster Restoration Land Use Plan took over five years to be completed in this area.

1995, the Mikura 5 and 6 Blocks Town-Building Council was established in order to lobby for their community's needs and interests regarding the land-use plan.

The disaster response of the Mikura community was therefore quite different from that of the Mano community. While the Mano community acted to put out the fire right away by themselves, the Mikura community could not respond fast enough to avoid massive losses from the fire. Such an incident is one of the indicators of low community capacity while existing physical and social vulnerability was high. Applying the framework (Figure 5.2), the Mikura community's inactive community development in the pre-disaster period was a factor in the community's inability to reduce existing vulnerability and increase capacity which was reflected in the immediate response of the community to the earthquake.

7.3.3. Volunteer Assistance for Mikura Community

Most volunteers working in Mikura community did not have much knowledge of the issues of disaster measures, government policies, land-use zoning and community organization. However, they soon began finding ways to understand these issues through lawyers, architects, academics, and planners. Each time the survivors faced issues that they were not familiar with, volunteers sought solutions from outside sources and brought them back to the community. For instance, Mr. Tanaka (current president of the Mikura 5 and 6 Town-Building Council) recalled that it was critical for the community to have outside volunteers at that time as there were not many people around with whom to discuss community building issues. It was also important for the survivors to have someone they could trust. These volunteers were always on the survivors' side and understood the disaster survivors' pressing needs and interests.

Local government officers were helpful, too if I asked questions. But it was much easier for me to go and ask questions of Mr. Tanaka and Mr. Ono because they were always there for us. Oh, I do not remember how often I went to ask questions to Mr. Tanaka and Mr. Ono. I went so many times (interview with RM-4: 08/21/2003).

Local governments and private consultants could not fulfill every individual's needs or provide services. The volunteers' efforts to assist the people created a great sense of trust between the volunteers and the residents.

The volunteers were able to put themselves in the survivors' shoes, and it created a great sense of trust among volunteers and the community (Interview with Mr. Tanaka: 08/07/2003).

The recovery process in the Mikura community took a while to start due to the fact that most residents had been evacuated out of the community. Many of them could not return to their pre-disaster homes because their homes were burnt or too dangerous, and lifelines were not available. The Mikura community had to deal with recovery issues with the very limited resources left in the community. The volunteers visited and sent flyers to a number of the former residents of the Mikura community to update them on Mikura recovery issues and re-zoning progress. The information they sent out helped some of the residents to move back to the Mikura community. While many emergency response volunteers left the disaster stricken areas after short term relief efforts were completed, some volunteers remained in the Mikura community to continue assisting with the long-term recovery processes (Suga 2002).

In the aftermath of the earthquake, the losses were massive and the Mikura community remained highly vulnerable (see Table 7.2 and 7.3) because of the lack of resources or lack of leaders or CBOs who could use existing resources effectively. Sympathetic volunteers remained in the community to try to figure out if there was any way to assist the disaster survivors to return to their previous community. Although they had little

knowledge of community development and disaster recovery, these volunteers contributed to

stimulating the Mikura community capacity building.

7.3.4. The Official Establishment of Machi-Communication

On January 17, 1996, a year after the Great Hanshin-Awaji Earthquake, Mr. Tanaka,

with two volunteers (Mr. Ono and Ms. Asano)[62], organized the first memorial service of the

earthquake in the Mikura community. During the process of coordinating the memorial

service, these volunteers created further strong ties with the community which gave the

volunteers great confidence in continuing their work for the community recovery. With the

success of the first memorial service event, these three key people felt that the best way for

them to serve the community more effectively was to create some kind of institutional body

so that the volunteers could be involved directly in community development issues and

activities. Mr. Tanaka explained that the reason they needed to establish an organization was

that

> An organization can be run by different people and the responsibility goes to
> the organization not the individuals who are involved. When the residents
> ask, who is doing this? Then you can tell them, 'oh, it is Machi-
> Communication's work' instead of 'Mr. and Ms. so and so. If community
> activities are run by individuals then if anything happens, they all blame the
> individuals. Also when money is involved, it is critical that these matters are
> dealt with by an organization, not by individuals (interview with Mr. Tanaka:
> 08/07/2003).

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[62] Mr. Ono worked for a printing company located in Tokyo of which the president voluntarilyy decided to
provide her printing machines and techniques for the disaster survivors to use in order to disseminate
information in the stricken areas. Mr. Ono accompanied her and stayed in the Kobe area. Ms. Asano was a
graduate student of a university in Tokyo and also a member of a religious group, called "Sodoshu Volunteer
Association" (SVA). SVA set up their emergency headquarters in the Mikura area and Ms. A was working as a
volunteer there (interview with Mr. Tanaka: 08/07/2003).

On April 1, 1996, the Great Hanshin-Awaji Earthquake Survivors Support Group—

"Machi-Communication"—was officially established. After that, Machi-Communication

(MC) helped the Mikura community recovery effort by supporting the Mikura Block 5 and 6

Town-Building Council, by providing administrative services such as compiling minutes,

taking notes at the committee meetings, and by gathering information about local residents'

needs (e.g. what they needed to rebuild their destroyed homes and what they wanted the

Mikura community to do to help them, involving consultants, architects, other experts, and

local leaders). Their regular activities included: organizing local events, such as festivals and

seasonal/cultural activities; organizing community-development committee meetings among

residents and with local government organizing meetings with community building experts;

coordinating disaster workshops for professionals; hosting field trips for school students

(schools from all over Japan visit this community to learn about the disaster); studying the

recovery processes of the residents; and publishing a monthly newsletter, "Monthly Machi-

Commi." The first monthly newsletter was published in July 1997. At the time of my field

work in 2003, about 700 copies were provided to their patrons every month (Machi-

Communication 2005).

Establishment of Machi-Communication was one of the milestones for the Mikura

community's disaster recovery. As the community had lost most of its resources, Machi-

Communication took on the role of managing, organizing and assisting with community

development practices. This assistance enhanced community capacity in many ways. In

particular, this CBO sought resources from outside of the community, such as student

volunteers from college and university, skills and knowledge from academics in various

disciplines and professionals and practitioners in various fields. Through Machi-

Communication, the residents were able to access those resources and slowly, the community increased its capacity.

7.3.5. Housing Recovery

Many of the residents were not the owners of the houses they lived in, and some of the households had the land owned by one person and the building owned by another (20% of households owned the land and houses, 10% owned houses but not the land, and 70% did not own either houses or lands) (Miyasada et al. 2002) (see Table 7.4). This complex ownership made it difficult for tenants to request repairs to the houses and if the tenants wanted to rebuild the houses, it was very difficult to reach an agreement between all the parties. Thus, the housing ownership conditions in the Mikura community were very similar to those of the Mano community (Table 6.12 and Table 7.4). However, because Mano's structural damage was relatively smaller than that of Mikura, the complicated ownership issues did not become such a major issue for Mano. On the other hand, in Mikura it was one of the essential factors that limited the overall recovery process.

Table 7.4: Relationship of Property Ownership in Mikura 5 and 6 Blocks in Pre-Disaster Period

Types	No of Buildings	Description	Land Owner	Building Owner	Building Occupant
AAA type	124	Land and building owner is the user	A		
ABB type	49	Building owner uses the building but doesn't own the land	A	B	
AAC type	123	Land and building owner renting the building to tenants	A		C
ABC type	86	Building owner renting the land from owner and renting the building to tenants	A	B	C

(Source: Miyasada et al. 2002).

In Mikura, there were 382 buildings in 1995 before the disaster including houses

(62%), factories (17%), stores (15%), restaurants (5%), and parking (2%), in Mikura 5 and 6

Blocks. Thirty two percent of these were owned and used by the same individuals. However,

almost 70% of the buildings and properties were owned/used by multiple stakeholders

(Miyasada et al. 2002). Table 7.4 shows the complex relationship between the land owner,

building owner and building occupant.

The Kobe earthquake caused 285 buildings in Mikura to be rendered uninhabitable,

which was about 75% of the entire number of buildings in the community. As of June 2001,

122 buildings (32% of the original) had been rebuilt in Mikura. Only 23% of the housing of

the pre-disaster period was rebuilt (Miyasada et al. 2002). Many of the houses in Nagata

ward were developed during the pre-war period or immediately after 1945 when there were

no planning controls to create minimum levels of living standards (see Table 4.3). As a

result, the area had extremely narrow streets (less than 4 meters wide), few parks or public

open spaces, and a high population density (Sorensen 2002: 314). Although many of those

fragile old structures were burnt by the fire, the high tenancy rates and the complex

ownership patterns led to social vulnerability and many of the residents experienced

difficulties returning to their pre-disaster homes. Housing recovery in the Mikura community

involved these issues which were difficult to deal with at a community level. The volunteers

and Machi-Communication visited the owners of the properties and asked if they would

agree to re-build new apartments and not to raise the rent, or to let the community use the

properties. However, such negotiations were very difficult for Machi-Communication as it

was only a volunteer group (Machi-Communication 1999). A lack of experience with

disaster reconstruction processes as well as community planning, made it a hard task for this new CBO.

7.3.6. Population recovery

People who lost their homes in Mikura due to collapse or fire were relocated or left the area soon after the earthquake. Only 134 people (54 households) remained in the area immediately after the event, and since 1995, Table 7.5 shows that the population of the area still has not recovered to pre-disaster levels. Right before the earthquake, on January 1, 1995, the population of Mikura 5, 6 and 7 was 735 (Nagata ward 1995). As of 2000, the population was 394 (164 households), and as of 2005 the population increased to 483 people—about 65.7% of the 1995 population level (Statistics Bureau 2000 and 2005). About 90 individuals moved into Mikura between 2000 and 2005 and this increase was according to Mr. Miyasada, due to the construction of two high-rise apartments (completed in 2000, 90 housing units) provided by Kobe City to the disaster survivors[63]. The Mikura population in 2005 included newcomers after the quake as well as former residents (Kobe City 2005). By comparison, the population of Nagata Ward as a whole recovered to 79.9% of pre-quake levels as of 2005 (Table 7.5). Furthermore, only one third of the former residents returned to the Mikura area (Miyasada et al. 2002). In other words, this pre-earthquake community was severely damaged by the disaster, and now the Mikura community had to re-build itself, afresh.

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[63] Personal communication with Mr. Miyasada, via e-mail on August 8, 2007.

Table 7.5: Population Change in the Mikura Community Since 1990

| | 1990 | | Pre-disaster* | 1995 | 2000 | | 2005 | |
	Total	Age 65 and older	Total	Total	Total	Age 65 and older	Total	Age 65 and older
Mikura	824	21.1%	735	159	394	24.6%	483	31.5%
Nagata Ward	136,884	16.4%	129,978	96,807	105,467	22.4%	103,791	26.6%

*Pre-disaster Mikura's population was taken on Jan. 1, 1995. Nagata Ward's population was taken on Jan. 1, 1995
(Source: Monthly Machi-Commi 1999; Nagata Ward 1995; Kobe City 2005).

Local informants noted that former residents of the Mikura community, who later lived in suburbs of Kobe city where public housing was available to them, still wanted to return if it was possible. They said that they visited their old neighbours whenever they could. One of them said, "if I have to buy things, I always try to come to this area (the Mikura community) so that money goes to this community" (Machi-Communication 2005b). "I am always thinking about Mikura community." "Even though the scenery has changed so much after the earthquake, I still want to come here. I feel better walking around this neighbourhood even though the area reminds me of difficult experiences, such as my friends who died in the earthquake. I still come here almost every month." (Yomiuri Newspaper 2005).

Even ten years after the earthquake, the Mikura community still suffered from slow population recovery and its population was aging. Over 30% of the Mikura community was 65 and older (Kobe Census 2005) (see Table 7.5). As with the case of the Mano community, the aging population is also a large concern for their community[64]. Over the years they have built senior's homes and collective housing that is designed to enable a senior population to live independently (e.g. wheel chair accessibility, emergency alarm systems, and on site health check-ups by nurses and doctors). On the other hand, Machi-Communication provided

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[64] For Mano, 31.5% of its population was 65 and older as of 2005 (Kobe Census 2005).

services for the senior members of the community, such as lunch services, weekly light work out sessions, and the occasional concerts or shows. Such services are contributing to minimize the vulnerability of those aged residents to some degree, yet the effectiveness is very limited compared to that of the Mano community that had adequate facilities, such as senior's homes or trained resident volunteers to provide appropriate services to the elderly (Konno 2001). In considering issues of population recovery in my framework, the lower population after the disaster is one factor creating community vulnerability. It is extremely slow process, but the population is increasing. However, the more new residents that moved in, the more opportunities were needed for the newcomers and old residents to learn about each other in order to share community issues with each other. Moreover, issues of aging can produce further vulnerability; however, this is a nation-wide issue that may require approaches from different levels other than the small community level. Although the Mikura community made some efforts to reduce this type of vulnerability through the community senior's services mentioned above, the outcomes of this vulnerability reduction appear not to be as effective as those of Mano.

7.3.7. Land Use Recovery

The Mikura community experienced inner-city problems (e.g. old fragile housing, narrow streets, and high building density) even before the earthquake struck the area. Considering the poor land use arrangements that existed in Mikura, a major re-zoning after a disaster was predictable, yet nothing was done before 1995 to prepare for it. There were no recovery plans for the community in place and no provisions for local government to re-design the land use zoning. This arrangement created a critical time loss for the disaster

survivors to re-build their homes due to a long process of land acquisitions and selection of

relocation. Such a long process prevented them from re-settling as quickly as they might

otherwise have because it was critical for the small business/factory/restaurant owners to re-

start their business in order to maintain their business and customers (Machi-Communication

2005a). The City announced that the Misuga Nishi land readjustment project (Mikura 5 and 6

Blocks) was completed in March 2005 (Kobe City 2006).

Figure 7.4: Disaster Restoration Land Adjustment Plan for Mikura 5 and 6 Blocks[1]
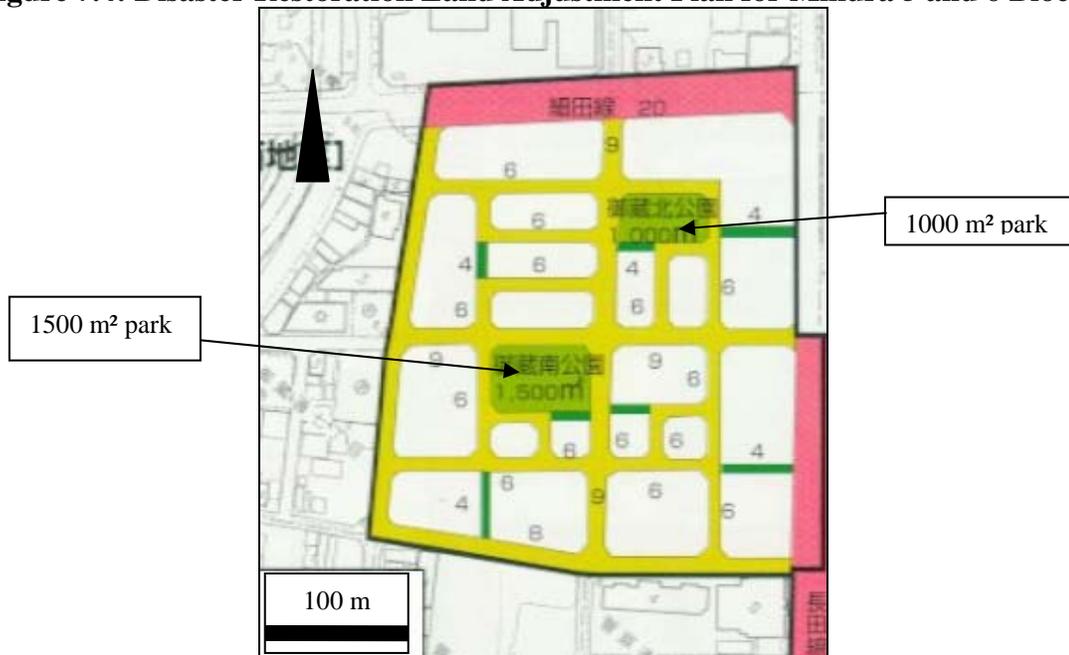
(Numbers in the map are the planned width of the streets)   (Source: Kobe City[65])

The objectives of the Disaster Restoration Land Readjustment Projects regarding

Mikura 5 and 6 blocks were to improve the safety of the community and quality of residents'

lives through widening narrow streets (from 4 to 6 meters), allocating sufficient amount of

space for parks and public open spaces (creating in total 2,500 m² of parks), regulating and

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[65] http://www.city.kobe.jp/cityoffice/33/33/toti-ku/img/misuga01.jpg

updating building codes, and zoning to separate different land uses (Kobe City 2006)[66] (see

Figures 7.4 and 7.5)

Figure 7.5: Widened Street and Newly Built Houses

(10/23/2003. Photo by Yasui Etsuko)

Mr. Ono Koichiro, a founding member of Machi-Communication, stated that the land

readjustment projects were not meant to "rebuild communities" in a societal sense, but to

reduce potential disaster risks and increase the safety of the community through road

widening and the creation of open space (Ono 2000). The infrastructure of community

recovery however was accomplished through physical improvement of this land

readjustment, while communities were still struggling to regain their social functions and

organizations. Although there were newly widened streets and more parks in the Mikura

community, the population in 2003 was only two thirds of its pre-disaster level, so there were

fewer people to appreciate the safety of the improved built-environment after the earthquake

(Machi-Communication 2004).

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[66] http://www.city.kobe.jp/cityoffice/33/33/toti-ku/jl00050.htm (access date 06/25/2006).
http://www.kobe-toshi-seibi.or.jp/matisen/1jouhou/syosai/jigyo/jl00049_1.htm (access date 06/25/2006).

Because two thirds (490 persons) of the former residents could not return to their previous home location and many factories and stores left the community after the disaster, there were many empty spaces in Mikura 5 and 6 Blocks. Even eight years after the event, there were about 6,500 m² (25% of the area) which remained unused (as of 07/2004) (ibid) (Figure 7.6). Figure 7.6 (Left) shows the high building density and land-use conditions in Mikura in the pre-disaster period. Figure 7.6 (Right) shows Mikura in 2001, five years after the quake, with its widened and newly created streets and two open spaces allocated for the construction of public parks.

Figure 7.6: Maps of Mikura 5 and 6 Blocks Comparison Between Pre-Disaster (01/1995) (Left) and Post-Disaster (06/2001) (Right)

(Source: Miyasada Akira)

Some of the empty spaces were filled with litter and some were fenced, which created an unhealthy and unattractive environment for the neighbours (Machi-Communication 2003). The empty spaces also created dark spots at night which made the neighbours feel unsafe and insecure about walking after dark (see Figures 7.7 and 7.8). The residents and visitors also

expressed the feeling that these empty spaces made the whole community look inactive or

even deserted (interview with Mr. Miyasada: 08/09/2003).

Figure 7.7: An Empty Space and a High-Rise Apartment
(An empty space was used for a parking lot, and a high-rise apartment was built for disaster survivors in Mikura)

(10/25/2003. Photo by Yasui Etsuko)

Figure 7.8: An Empty Space
(This land is too small to build a house)

(10/23/2003. Photo by Yasui Etsuko)

For the Mikura community, it was fundamentally important to have the land readjustment project completed by the city of Kobe in order to re-develop infrastructure, lifelines, and housing, even though it took over ten years to complete (March 1995 to March 2005). In 2003, the Mikura community did not look like an old inner-city neighbourhood that was suffering economic and social decline. Rather, it looked like a newly developed community waiting for newcomers to fill in the available spaces. Some residents expressed the concern that "too wide roads caused less face-to-face communication, less interaction with neighbours, and less physical closeness among neighbours. It is not the community that I loved. I do not feel like I belong here" (quoted by MC-S4, interview: 07/30/2003). Two new high rise apartment buildings (12 stories) created in September 1999 and October 1999 to provide large numbers of available housing units for the disaster survivors, but they were not a good home for the elderly population of Mikura. The elderly tended to stay inside the buildings because they did not like using the elevators, and they did not like crossing wide streets with their walkers and canes (my field notes: 10/15/2003). In the old days, when they lived in a high density area, they could just step out of their houses to water their plants and sit down on the benches so that they could meet their neighbours to chat. However, life in these high rise apartments in 2003 did not allow them to have such close communication with others. It is ironic that wider streets, more public open spaces, and new building standards after land readjustment were supposed to protect people from natural disasters and other emergency events and improve their lives, but these improvements caused some people (especially senior citizens) to lose their sense of closeness and belongingness. In terms of their vulnerability conditions, therefore, new types of vulnerability were generated after the disaster. The volunteer association, Machi-Communication, tried to deal with some of the

vulnerability issues, such as finding ways to use the empty lot spaces, and providing seasonal events or gathering to increase face-to-face communication among residents. Such processes contributed to increasing community capacity in the long run, but overall it seemed that community recovery would be a slow process.

7.3.8. Mikura Block 5, 6, and 7 Neighbourhood Association

In July 2001, the Mikura Block 5, 6, and 7 Neighbourhood Association (*Jichikai*) was re-established to assist with further community-building activities. Although it was not active, the Mikura Block 5 and 6 Neighbourhood Association (not including block 7 at that time) had existed before the earthquake. Still, as indicated earlier, after the quake, the Neighbourhood Association (NHA) was not able to function as a disaster assistance headquarters because most members were too old and complained that they had health problems that prevented them from participating in any stressful activities (interview with RM-1: 10/03/2003; RM-2: 09/29/2003). Unlike Mano, where existing CBOs contributed immensely to the disaster recovery process, in the Mikura community, newly established and inexperienced CBOs—the Mikura Block 5 and 6 Town-Building Council and Mach Communication—supported disaster recovery and community planning. However, given the familiarity of NHAs in Japan in general, the idea of establishing a neighbourhood association was favoured by the Mikura residents. Although the Mikura NHA could ask MC to support its activities, the NHA had its own rules and autonomy. It was independent from MC and the Town-Building Council (interview with RM-5: 09/18/2003). Mr. Tanaka said that;

> It was a great opportunity for the residents to have their own organizations apart from MC or the Town-Building Council (interview with Mr. Tanaka: 08/07/2003).

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Accordingly, with new members and a chairperson, the Mikura 5, 6, and 7 Blocks

Neighbourhood Association was set up in 2001. While I was interviewing the chairperson of

the Mikura NHA, he exclaimed that;

> I am very happy to have our own neighbourhood association. I was born here
> and have lived here my entire life. In my childhood, I remember different
> seasonal events and gatherings held by NHA. It is great to have our Town-
> Building Council and Machi-Communication, but this is different (RM-5:
> 09/18/2003).

Thus, in the case of Mano, the community already had diverse CBOs that were active

and well-organized that were a great factor in increasing community capacity. By

comparison, in Mikura, with help from MC, the NHA was relatively active from the

beginning; however, the real challenge after the quake was to encourage the residents'

participation and increase networks among residents and other CBOs in order to play an

essential role in increasing community capacity. While the new NHA could have contributed

to increasing community capacity in the Mikura community, how and to what extent the

existing NHA could really contribute to vulnerability reduction is not really known as the

residents of the Mikura community do not seem to have a clear role for the NHA to play

among existing CBOs.

7.3.9. The Role of Machi-Communication (MC)—Goals and People

During the eight years after the Kobe earthquake, Machi-Communication (MC)

contributed greatly to community recovery in Mikura. In January 2003, Mikura Block 5 and

6 Town Building Council and MC were awarded the seventh Disaster Resistant Community

Planning Prize (*Dai 7kai Bousai Machizukuri Taisho*) by the Minister of Public

Management, Home Affairs, Post and Telecommunication (*Somu Daijin Sho*) (January,

2003). This was for MC's outstanding performance in disaster response after 1995 and its

role in future disaster prevention in Mikura. In particular, the prize acknowledged and

praised the efforts made by the volunteers, the community planning committee, and residents

to work together to increase the safety of the community. Following this award, MC was also

honoured by the Prime Minister, Koizumi Junichiro (2001-2006) for its contribution to

disaster prevention and mitigation (September 2, 2003) (Fire and Disaster Management

Agency 2003). MC is a very unique organization in Japan, focusing on one small

community—Mikura—for its disaster recovery and long-term community development

(interview with MC-A1: 08/19/2003; MC-A2: 09/10/2003; N-1: 10/21/2003)

> When they (MC) first started, no one paid attention to them and most of the
> people did not think that MC's approach could make a difference in
> community-rebuilding after disasters. Now people come to MC and they want
> to learn from MC what and how MC is doing (MC-A1: 08/19/2003).

The Mandate of Machi-Communication was created in order to identify their

institutional goals and purposes within the Mikura community (Machi-

Communication2005)[67]:

- To support Mikura block 5, 6, and 7 in successful community building;
- To coordinate workshops and meetings to exchange knowledge and experience relating to community building;
- To carry out research on the recovery process after the Great Hanshin-Awaji Earthquake to improve existing disaster planning;
- To collect data about Mikura community before and after the Great Hanshin-Awaji Earthquake to create a memorial book;
- To exchange information and experiences with various disaster stricken areas; and
- To distribute a monthly newsletter

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[67] http://park15.wakwak.com/~m-comi/

Originally only three people (Mr. Tanaka, Mr. Ono, and Ms. Asano) established

Machi-Communication in 1996. They were able to gain support from various professionals

who had a wide range of interests in this CBO. Up to 2003, close to 20 individuals became

members of their developmental committees since MC was established. MC also had about

20 part time and full time staff members and there were always temporary volunteers who

participated in community activities (see Appendix C). Although key staff members have

changed since its establishment in 1996 due to personal reasons, this CBO has been able to

maintain its objectives and approaches more than 7 years after the disaster (Suga 2002).

Although there were resident volunteers and temporary staff members who lived in

the Mikura community, most staff members of Machi-Communication were non-residents of

the community. Mr. Miyasada said that,

> Some people tell me every once in a while that I am not a resident of the
> Mikura community and therefore they presume that I do not understand any
> community issues. There are many things I need to learn about Mikura that is
> for sure but just because I do not live here, that does not mean that I do not
> understand the community needs and concerns. In fact, I spend more time in
> Mikura than in my own neighbourhood. I am here from morning to late at
> night and I often come weekends and I sometimes even stay overnight
> (interview with Mr. Miyasada: 08/09/2003).

Staff members of MC were often young, either recent graduates from college or in

some cases still in graduate school while working for MC. The Mikura community itself was

aging, but an interesting contrast was that young people from elsewhere in Kobe were always

in the community doing some volunteer work with MC. Although most staff members were

young, Mr Tanaka, who was in his mid 60s when interviewed in the summer of 2003, and

was the founder and advisor of MC, was a highly influential person involved with every

important decision making process of the Mikura community. The youth of the MC staff and

volunteers was one of the distinctive differences between the Mano and Mikura CBOs. As

noted earlier, when the Mano CBO leaders get older, it could become harder to find members of the younger generation to replace them, despite *Mano Doshikai* (a group training and fostering young community leaders). On the other hand, the office of MC was always filled with young people and over the last ten years, MC has not had too much trouble finding new staff members. This ability of MC to recruit younger staff members, even though they were not residents provided a generational diversity for the Mikura community which could be considered as community capacity to deal with its existing vulnerability. The lack of financial sustainability of this organization would be a critical limitation on MC's ability to continue to maintain their high level of performance in the community (see Appendix D).

7.3.10. Accomplishments of MC—Cooperative Housing

Four projects (activities) in which Machi-Communication played a key role in the ten years following the earthquake are introduced in this section. These four activities illustrate how MC has increased its organizational capacity, enhanced residents' participation in Mikura, and maintained a trusting relationship with the residents, showing how MC is able to bring people together to solve common problems (see Table 7.1). The first example deals with the provision of cooperative housing.

Due to the complex property ownership and high ratio of tenancy in the community, many previous residents who lost their homes found it was very difficult to return to their previous neighbourhood. One of the possible solutions that MC came up with was to build cooperative housing in Mikura in order to provide affordable homes for the disaster survivors (see Figure 7.9). With help from Mr. Miyanishi, who worked for a collective housing project in Mano and other government-led housing programs, MC and the residents decided to plan a

cooperative housing project. MC held a number of meetings between 1997 and 1999 with people who were interested in cooperative housing.

Figure 7.9: Mikura Five

(2000. Photo by Akira Miyasada)

At the meeting, MC explained the idea of cooperative housing, showed drawings of cooperative housing, and stimulated realistic images of cooperative housing in the minds of the people. Some of the people in the community slowly became interested in the idea, and in June 1997, MC formed a steering committee for cooperative housing. Every day and night, staff members of MC visited different land owners and building owners (those who owned the buildings but not the land) to explain the system of cooperative housing. MC had to canvass and solicit the land owners to see if they would agree to share the value of their lands with their tenants. These negotiations were tough, Mr. Tanaka recalled (interview with Mr. Tanaka: 08/07/2003). However, people were able to reach an agreement and twelve

households decided to join a cooperative housing project. MC took a role in facilitating matters for these twelve tenants, mediating between the architect and tenants' interests and concerns. In January 2000, the cooperative housing project, "Mikura Five," (Figure 7.9) was completed (Machi-Communication 2004a).

MC's devotion to people who wanted to rebuild their homes in their community helped develop strong trust, a factor which was a key to the successful completion of this project. MC held meetings for the cooperative housing steering committee, organized tours to existing cooperative housing, held barbeques and other events to gather people, and created more opportunities for people to speak up, share their concerns, and understand each other. An interesting approach MC took was to gather these tenants together to participate in the actual construction process. With help from professional construction workers, people participated in a series of construction tasks which did not require complex skill and knowledge, such as pouring concrete cement, lining up ceramic tiles, planting flowers, and cleaning. MC told them "let's do it by ourselves as much as possible." This was a great lesson that survivors learned from the Great Hanshin-Awaji Earthquake.

> No one can help us, but our neighbours can. We must try, as much as possible, to do everything. Let's start something that we can do by ourselves (interview with Mr. Tanaka: 08/07/2003).

This cooperative housing project involved only a small number of people (12 households), but it was a significant step for MC to bring people together to solve common problems. Through this housing project implementation, the Mikura community gained community capacity. "Mikura Five" (the cooperative housing) is one of the collective efforts of Mikura residents and Machi-Communication to achieve disaster recovery.

7.3.11. Accomplishments of MC—Plaza Five

A second example concerns the provision of community space. After the completion of the cooperative housing project in January 2000, Mr. Tanaka, who was one of the housing stakeholders, decided to use his residential unit for his wholesale company. However, Mr. Tanaka was willing to offer Machi-Communication (MC) the use of his space for the benefit of this CBO and for the Mikura community. It was just about that time that MC started to explore the possibility of dividing their work into two sections with different roles and goals. Although MC carried out various activities at this time, MC tended to focus on assisting community building in a way that represented the community's needs in intermediation between Kobe city government and the community, especially when the Disaster Restoration Land Readjustment project was still underway. It would make sense, it was thought, if MC had another section that could take responsibility for supporting residents' daily needs and interests and encouraging them to participate in community activities (interview with MC-S4: 07/30/2003).

Accordingly, another section of the organization, which was called Plaza Five, was established in April 2000 (Table 7.1 and Figure 7.10) to support various daily needs (details discussed later in this section) of the community[68]. Since the Mikura community did not have their own community center until January 2004, Plaza Five took the role of a community center to provide the physical space and services for residents. The space for Plaza Five was a room about 85m² and included a kitchen, bathroom, and toilet. In this space, meals were made for various occasions, teas and snacks were served for visitors, and computer classes were held.

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[68] Plaza Five was closed in the summer of 2004 after the Mikura community center opened in January 2004.

Other occasional meetings were held and staff members of MC spent many hours in this space. Plaza Five had another smaller space in the same building which was about 39 m² to be used for small meetings and some activities. This space was also used by visitors for over night stays at an inexpensive rate[69]. Plaza Five was open almost every day, including official holidays. There was always somebody in Plaza Five doing community work, and residents, including children, could visit whenever they wanted to.

Figure 7.10: Plaza Five Gathering

(2000. Photo by Miyasada Akira)

Plaza Five held regular activities (between April 2000 and December 2003) on Tuesdays; they held a half day (10am to 3pm) service for the elderly which provided health checks, light exercise, lunch, and various forms of craft work. On Thursdays in the early evening and on Saturday afternoons, the CBO held a computer class for beginners of various ages and abilities. On Fridays, there was a lunch party which was run by volunteer staff of Plaza Five and the residents of the community.

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[69] When I stayed overnight when the community had the 10th Kobe earthquake anniversary in January 2003, I paid 500 Yen (about $5) for the night.

On Sundays there was a breakfast service. Besides these regular activities, Plaza Five provided children's programs in the summer, field trips to different places for different activities (farming, fruit picking, cooking, sight seeing, and so on), and services for cleaning and watering the public park (field notes and interview with MC-S4: 07/30/2003). Just before completion of a new community center in Mikura provided by the City (January 2004, details in the next section), Plaza Five was closed and the space became an office for MC. In sum, from 2000 to 2004 Plaza Five played an important role as the place where the residents could come and ask for help whenever needed.

As a community with fewer resources and lower community capacity, the Mikura community was highly vulnerable and it was important to have a CBO to organize its recovery, as well as a space for the residents to gather, informally and formally. In the pre-disaster period, the high building density almost forced the residents to see each other very often, which contributed to a high level of social networking. But in the post-disaster period, a new and nicely re-arranged neighbourhood after the land readjustment project, created more space for the residents, which ironically interfered with their opportunities to see their neighbours, to network, and to access information. The Mikura community needed a space for the residents to be able to meet their neighbours which was an important factor for the community in reducing their vulnerability.

7.3.12. Accomplishments of MC—New Community Center

A third example of MC's accomplishment involves construction of a community center. As a part of the Disaster Land Readjustment Project, designated communities were allowed to request community facilities from the government if they did not exist and if they

had a great need for them (interview with Mr. Tanaka, 08/07/2003). Because there was no community center for the Mikura 5, 6, and 7 Blocks, the Council requested that the city government build one. Machi-Communication (MC) took charge of the community center construction project. MC suggested to the residents that they be part of the project, and coordinated over twenty project meetings (as of March 2003). They discussed the preferred location, purpose of the community center, design, budgets, management and who would be the principle persons or group for the management. One agreement the Mikura residents reached quickly was that they wanted to build something that would make them feel at home, something to remind them of the "good old days" before the earthquake, and something that was made of natural materials. This agreement reflects the fact that the Mikura residents were surrounded by newly built houses, streets and parks which did not make them feel at home or comfortable.

MC searched for an appropriate building style and system for their community center that could meet the residents' wishes. Some of the residents voluntarily agreed to view other community centers elsewhere in Japan and found one community center which appeared to meet their requirements. This building was a traditional Japanese wooden house originally built for residential purposes but now being used for a community center. MC soon began investigating the possibilities of using a similar traditional Japanese house for their community center. Fortunately, Mr. Miyanishi happened to know an owner of such a traditional house, and the owner happily agreed to give away this house, built about 130 years ago, since the owner no longer used the house (interview with Mr. Tanaka: 08/07/2003; MC-S3: 09/24/2003).

Even though the house was given by the courtesy of this owner, the community center construction budget was very tight. MC tried to complete various parts of the construction activities with carpenter volunteers, students in engineering and architecture schools, and other volunteers from both outside and inside of the community, in order to reduce the cost. At the same time MC realized that a "do it by ourselves" approach could increase people's familiarity with and attachment to the center from the very beginning, which could enhance a sense of community with other neighbours and volunteers through shared memories and stories of the construction processes (disassembling and assembling the house) (interview with Mr. Tanaka: 08/07/2003; Mr. Miyasada: 08/09/2003).

In the summer of 2002, the residents of the community, other volunteers, and a few professional carpenters and craftsmen spent two weeks disassembling the traditional Japanese house, which was located in Kasumi Town, in the northern part of Hyogo prefecture. People in Kasumi Town also volunteered to help move the various pieces of the house to Mikura (Figure 7.11). At the end of the two weeks, MC held a party and concert to show their appreciation to all the Mikura residents, volunteers and people in Kasumi Town. In total 150 people participated in this disassembling process (Machi-Communication 2003a).

Figure 7.11: Volunteers Transporting Lumber[70]

(11/03/2002. Photo by Machi-Communication)

After negotiating the potential site with Kobe City, and the cost with a construction company, on June 7, 2003, the Mikura Block 5, 6, and 7 Neighbourhood Association was able to hold a ceremony to mark the beginning of construction. People from all over Japan visited Mikura to wish for the safety of the construction process. This traditional Japanese house was built using a traditional Japanese house building method (see Figure 7.12). With help from professional carpenters, the volunteers were taught this traditional method. The new community center was completed in January 2004 (Machi-Communication 2003a and 2004b) (Figure 7.13).

Figure 7.12: Mikura Residents Participating in the Construction[71]

(07/02/2003. Photo by Machi-Communication)

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[70] http://machi-comi.homeip.net/m-comi/action-report/021103/index.files/Photo003.htm (access date: 03/08/2007)

[71] http://machi-comi.homeip.net/m-comi/action-report/030702tettukinkou/index.files/Photo009.htm (access date: 03/08/2007)

Mikura Five (the cooperative housing) was one of Machi-Communication's successful efforts to assist disaster survivors in a very substantial way. This new community center project was another great achievement involving even more people (the Mikura residents, volunteers, construction and design professionals, local government, and individual and business contributors), and resources (money, construction materials, skills, and networks). In total over 2,000 people were participated in the community center project (Machi-Communication 2004b) and an estimated 52,000,000 Yen (roughly CD$ 50,000) were spent for the construction (Machi-Communication 2003b). A sense of accomplishment contributed to enhancing community solidarity and networks within and outside of the community. There are some issues that remain however. One is that it is still unclear how the community will manage this centre. Whether and to what extent Machi-Communication will be involved in the management has not been determined. How this community center is utilized and managed is an issue that the community needs to solve collectively.

Figure 7.13: A New Community Center[72]

(01/17/2004. Photo by Machi-Communication)

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[72] http://machi-comi.homeip.net/m-comi/action-report/040117ireihouyou.files/Photo020.htm (access date: 03/20/2006)

7.3.13. Accomplishments of MC—Networking

A final example involves MC's approaches to obtain and maintain networking with outside and inside the Mikura community. While accomplishing various community activities, as described above, Machi-Communication disseminated information about their activities to the public during the post earthquake period. Their monthly newsletter, "Monthly Machi-Commi," was first published in June 1997 and since then it has been published every month to share news of their activities with the neighbours, supporters from various backgrounds, such as academics, planners, members of other CBOs or NGOs, government officers, and other people who were interested in their activities. MC provided numerous opportunities for not only the community residents, but also people from outside to participate in community activities so that the community recovery efforts were recognized, shared and enhanced. Visitors from all over the world[73] came to this small community to learn about their community development practices. MC conducted a number of diverse networking activities. The following are some highlights of MC's activities that enhanced its networking in the Mikura community.

Fieldtrips: MC provided field trip programs for school students from all over Japan to learn about the impacts of the Kobe earthquake. In the spring of 2005 for example, a total of 1,500 students from 15 schools visited this community and MC organized all the field trip activities (Machi-Communication 2005) (see Figures 7.14 and 7.15).

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[73] Some pictures are available in Machi-Commi web site (http://machi-comi.homeip.net/m-comi/action-report/index.htm).

Figure 7.14: Elementary School Field Trip[74]

(06/16/2004. Photo by Machi-Communication)

Figure 7.15: Resident Volunteer[75]
(Telling about disaster experience to school students)

(04/2004. Photo by Machi-Communication)

Workshops: MC held workshops to keep people up to date on the current theory and

practice of community recovery process. "*Mikura Gakko* (Mikura School)" has been held 18

times since 1997 (as of March 2007). MC has held this workshop twice a year. This

workshop helped people understand the details of community recovery and provided

information on other community experiences as well as experts' opinions and studies

regarding disaster recovery.

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[74] http://machi-comi.homeip.net/m-comi/action-report/040600genga.files/Photo017.htm (access date: 03/08/2007)
[75] http://machi-comi.homeip.net/m-comi/magazine/0404/0404-1.htm

Sharing Experiences with Other Disaster Victims: MC visited other disaster stricken areas to assist disaster survivors, and maintained a long-term relationship with them. A group of interested people gathered and decided to visit Taiwan to share their experiences with the disaster survivors of the Chi Chi earthquake which occurred on September 21, 1999. They also visited the earthquake survivors again in May 2001. A group of people visited Unzen (Nagasaki) after the flood in August 1999, and Miyake Island when a volcano on erupted in June 2001 (Machi-Communication 2005a).

Accepting Visitors: MC accepted any visitors who were interested in learning about the community recovery process. Numerous of people have visited Mikura community in the ten years since 1995 including researchers, government officers, and other interested individuals and groups from England, India, China, U.S., Canada, Indonesia, Taiwan, Zimbabwe, and Korea. Government officers from other cities, students studying disasters, and community organizers became regular visitors. There were also visitors who became interested in volunteering for on-going activities in the community (Machi-Communication 2003a).

Transferring resources: MC has worked to transfer its skills and knowledge regarding community organizing and development to other communities. MC started this type of activity in the summer of 2005 when it became involved in a community organizing activity for a community in Osaka (Machi-Communication 2007).

The above are examples of MC's activities that do not directly involve the Mikura community. However, the local community members have always been available to help MC. They provided their time and ideas to help MC host these events (Machi-Communication 2004). It is a rather distinctive phenomenon that people from all over the world have visited this small community in Kobe and MC to learn about and from their

experiences of the Kobe earthquake. MC's wide and diverse network can potentially influence community capacity in the long run. However, it is important to note that these MC's activities were not always appreciated and valued by all the residents in Mikura. Some residents were not happy with MC's activities. In particular, these Mikura residents questioned whether MC was truly interested in assisting the Mikura residents with their recovery as MC spent too much time and effort connecting with people outside of the community (interview with Mr. Miyasada: 08/09/2003 and MC-S4: 07/30/2003).

7.3.14. Roles of Local Government after the Disaster

While some local communities in Kobe, such as Mano (Shiraishi et al. 2002), or Noda Hokubu (Hein 2003), established good relationships with the local city government, this has been difficult for the Mikura community. As mentioned in the previous chapter, the Mano community had been working with the city government since the 1960s when the community experienced serious environmental pollution problems. Noda Hokubu (also located in Nagata ward) was another community which had built a good relationship with local government since the early 1990s when they went through land re-zoning and re-development to redress inner-city problems (Machi-Communication 2003a).

Reconstruction efforts were extremely challenging for both the community of Mikura and the Kobe city government due to the massive physical damages caused by the earthquake and subsequent fires. The community was scattered and community leaders from the pre-disaster period did not want to contribute to reconstruction efforts. New community leaders (i.e. Mr. Tanaka) and organizations (i.e. MC or NHA) did not have the same history of communicating with the local government as Mano and Noda Hokubu communities. One local government officer stated:

I have known Noda Hokubu for over 7 years now. We have known each other since I was working for the housing department when Noda Hokubu had a housing development project (LG-1: 10/15/2003).

This was clearly not the case for Mikura.

During the recovery phase, Kobe City constructed a number of buildings (*Jigyo yo Kasetsu*—Temporary housing with business facilities) elsewhere that consisted of business spaces attached to housing facilities to enable small business owners to re-start their businesses during the recovery. When the term of the program was over at the end of 1999, Noda Hokubu community requested that Kobe City give them the use of one of these buildings for their community center and their request was granted (Machi-Communication 2003a). In contrast, the Mikura community requested that Kobe City give them the use of one of these buildings for their community business to provide various services for their elderly population, their request was denied (interview with Mr. Tanaka 08/07/2003; Machi-Communication 2004b). The local government officer clearly stated that:

There are a number of reasons, but for the Mikura case, the building was built on an individual's land and we (the government) have to return the land to the owner when the program is completed. Plus, these buildings were built as part of a disaster reconstruction program to assist small businesses and when the period of the reconstruction program is over, it simply has to go. The budget was allocated to build it and dismantle it. We cannot keep it (LG-1: 10/16/2003).

Still Machi-Communication and local residents negotiated with the land owner in 2003 to ask for his permission to use the land and the owner happily agreed with them. However, some Mikura residents later felt uncomfortable with the responsibility of community services operated by MC, and reported their concerns to the local government. The government considered it as a potential source of conflict within the Mikura community which was a sufficient reason for the city government not to proceed any further, and the

building was destroyed and the land was returned to the owner in March 2005 (Machi-Communication 2005c). This example suggests that while there is increasing emphasis on the need for the Kobe city government to play an active role in its local communities for various reasons as well as on the need for local communities to initiate their own efforts to address community issues and to take their own problem-solving approaches, it is very difficult to actually achieve this. In particular, it is difficult to define to what degree a community can take over control of community services, such as providing support systems for local elderly residents, which is normally considered a public service. Similarly, to what degree a local government needs to provide tailored services for each community, which would require them to be involved in every individual community situation to understand specific community needs and interests is also a difficult matter to resolve.

7.3.15. Continuous Residents' Participation in Land Readjustment Project

Apart from the work of CBOs, various actions by others played an important role in the post 1995 recovery of Mikura. The local residents of Mikura were also key agents in achieving effective community reconstruction. For instance, *Aban Pulanningu Kenkyusho*, a private planning firm which consulted with the Misuga District in the pre-disaster period, took over the job of assisting the Mikura community in dealing with the city-led Disaster Restoration Land Readjustment project in which Mikura 5 and 6 blocks were designated for in March 1995. The Mikura 5 and 6 Blocks Town-Building Council was established in order to represent the residents' concerns with respect to the land readjustment project and the Mikura Town-Building Council report, and to propose the community's ideas and visions to the City of Kobe government. This consulting firm took charge of the Council meetings since

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its establishment (04/23/1995). Some information on this activity was not available to me due to confidentiality reasons, but according to the Monthly Machi-Commi newsletter, the general meeting of the Council was held at least twice a year and executive meetings were held as often as every month and on occasion, almost every week. Between 1997 and 2004, the Town-Building Council had at least 15 meetings every year including general and executive meetings (Machi-Communication 1997 to 2004).

Table 7.6 shows an overview of the Mikura Town-Building Council meeting dates and agendas, as well as the number of people who participated in each meeting.

Table 7.6: Mikura 5 & 6 Blocks Town-Building Council Meeting and Participants

General meeting	Date yyyy/mm/dd	Meeting Agenda	Number of Participants
The 1st	1995/06/18	Land use zoning	150
The 2nd	---	---	---
The 3rd	1996/04/28	Cooperative housing	90
The 4th	1996/07/14	Community vision (creating reports of recommendation)	96
The 5th	1997/06/22	District development	105
The 6th	---	---	---
The 7th	1999/05/23	Supporting individual recovery	32
The 8th	2000/06/11	Community parks and streets	28
The 9th	---	---	---
The 10th	2002/06/17	Community center project	41

(Source: Machi-Communication 2002; data on the 2nd, 6th, and 9th meeting were not listed)

The data were provided by the planning firm to "Monthly Machi-Commi" and it was published in June 2002. The data show that the residents' participation declined from 1995 to 2004, except for the 5th Council meeting for which the meeting agenda was everyone's concern as the overall land readjustment plan was presented for approval.

According to Machi-Communication's (2002) analysis, the following three reasons were identified for the decline of participation at the Council meetings. First, the Council's lack of clear objectives and precise understanding of the residents' pressing needs made the meetings unfocused. Due to the fact that the Town-Building Council was newly established

in 1995 and had very little experience in community organizing, the meeting agenda tended to be very broad and covered only general topics, which resulted in residents being uninterested in attending the meetings.

Other times, when the Council meeting started to discuss issues on land use zoning, various stakeholders, including residents, factory/retail/restaurant owners, property owners, renters, and anyone who was interested in the Mikura district land, attended the meetings. At the time of the disaster, most residents did not have much information on any subjects regarding disaster restoration (e.g. issues of debris removal, compensation for the damage to housing, eligibility for government financial assistance, details of the land readjustment process, compliance with building code, and so on). That was why a large number of local residents attended meetings in order to obtain as much information as possible. However, local residents soon found that the discussion in these meetings was already very technical and complex, thus they basically needed an extra session that could explain legal and engineering terms and conditions being used in the meetings. The Mikura residents asked MC staff members for help understanding these complex uses of unfamiliar words (interview with RM-4: 08/21/2003), and MC staff members themselves had to seek various experts to learn these terms in order to answer the questions from the residents (interview with Mr. Tanaka: 08/07/2003).

People attended meetings when the agenda was concerned with individual property and land related issues, however, as meeting discussions moved onto issues related to common spaces, such as parks and streets, those who did not live there or did not know if they could return did not feel that it was important enough for them to attend (Machi-Communication 2002).

Second, the residents did not want to share information with others, especially when it was too personal, such as financial information—how much rent they paid, the cost to buy land, who owned what properties, and how much money people earned. Because of a lack of trust between residents, the Town-Building Council, the consultant and the CBO at the beginning, the residents did not want to share their problems by having them discussed at meetings. Still, it was sometimes necessary to bring up various issues, even very personal ones, in order to clarify what the problems and obstacles were. Without knowing the details of issues and individual complex situations, the Town-Building Council meetings were rendered too general, causing the agenda to lack clarity and focus. There were some occasions when the residents discussed their personal issues, but these occasions created conflicts that could not be resolved for a long time. People who witnessed or heard about these types of conflicts tended not to express their own interests and concerns openly at the meetings (ibid).

Third, former residents could not attend so often due to factors of distance and age. The people, who used to live in the community, were interested in returning there from their current temporary housing. They wanted to attend the meetings, but it was simply unrealistic for them to come so often from the suburbs of Kobe city as the trip might involve more than a couple of hours commuting, for example. Moreover, the elderly residents were often unable to attend. The Town-Building Council meetings were often held at night (e.g. at 7:00 pm), and a single meeting often took more than an hour; It was not easy for the elderly to go out at night and come home so late when there was little public transportation at this time (ibid).

It seemed to me that contrary to MC's claim that residents' participation declined, many of the Mikura residents continued to be concerned about their community issues and

attempted to be involved as much as they could. One of the general meetings that I was able

to attend on May 25, 2003, discussed the use of lands that were purchased by the government

after land-zoning as well as the community center construction project and some other issues

regarding organizing the neighbourhood. Thirty-one residents attended and 130 residents sent

letters in advance to allow others to vote for them (my field notes: 05/25/2003). From this it

can be said that about 160 people were concerned about the discussions that they held in this

meeting on a Sunday afternoon. Considering the fact that the population of Mikura

community was 394 (as of 2000), this seems to be a high level of interest and participation.

Another example is that according to the Monthly Machi-Commi newsletters, the residents

had at least 80 meetings between June 1997 and November 1999 to discuss the cooperative

housing project. The reason for the various meetings and activities held in the Mikura

community derived from the realization of MC that holding only Town-Building Council

meetings would not help in developing community visions, and sharing problems and

bringing the community together to solve common problems. In order to enhance

participation from the residents, MC decided to create more events and gatherings for the

residents to give them more chances to meet each other and to share community experiences

together. Plaza Five played an important role in this regard, as mentioned earlier. The editor

of Machi-Communication reported (2002) in the newsletter that through participating in

various events and community activities, people started to share their experiences and

increase their understanding of each other. The editor stated that;

> Even though they might have started out feeling no more than a sense of
> obligation to participate in the community activities, little by little, people
> will slowly develop interest in improving their community, find some
> meaning in doing it and develop feelings of belongingness. We have
> witnessed the residents becoming like that one by one, and now we are

confident that eventually, our community will make further improvement to enhance people's quality of life (Machi-Communication 2002: 7-8).

MC's efforts to involve people in every community activity appeared to have been successful. There is some evidence to support the claim that the residents of Mikura community have been very much involved in community activities. For instance, when the new community center construction project started, MC took charge of the process. In this project, more people (volunteers from outside) were involved. Indeed more actual labour was needed, more organization was required, and more money input and more resources were sought than for the cooperative housing project which did not involve the entire community in carrying out the process. Every weekend, people came to the community center construction site and helped with the construction. There were many architects and construction experts to teach the residents and volunteers how to build the center.

High participation from the local residents is one of the important factors increasing community capacity. In the years following the quake, leaders of the Mikura community made efforts to maintain this high level of participation even though the population has been aging. Mr. Miyanishi stated that

> In terms of the residents' participation, the Mikura community is quite impressive. It is such a small community, yet they can bring so many local people whenever they need. I am quite impressed with that (interview with Mr. Miyanishi: 10/10/2003).

During my field work, there were some occasions when the Mikura residents expressed their reasons for participating in various community activities led by MC. One occasion I was able to witness was when an elderly woman who was a regular member of the senior's lunch service provided at Plaza Five passed away in May 2003. It was requested by the residents that the driver of the hearse that carried her coffin drive around the

neighbourhood at a certain time so that the residents could wave at the car to say goodbye to her. While waving at the car and watching the car leave, a resident said:

> I want people to wave at me like this when I have to go. I do not have many relatives and friends anymore, but I do not want to die alone and unnoticed for a long while. That is why I am always willing to participate in the community activities so that the people here can remember me, take care of me, and look for me if they do not see me for a couple of days. And I want my neighbours to come to my funeral to say goodbye (my field notes: 05/28/2003).

The residents of Mikura often participated in order for them to increase their social ties, find friends, and feel a sense of belonging. It seems that their reasons for community participation were rather for personal than collective good. As some community development scholars have discussed with regards to different levels of public participation (Arnstein 1969; Green and Haines 2002), the motivations of residents to participate in community events did not seem to stem from the fact that they wanted to solve community problems through collective action. For a community like Mikura which had to rebuild almost from scratch, it was not very easy for the residents to become involved in community activities right away.

Another resident of the community expressed her feelings in an interview,

> It would have been very difficult for me to be involved in community activities if there were no Machi-Communication and Plaza Five. Because they were always here for us, it made it easier for me to participate in volunteer activities. I am quite happy to be here doing volunteer work so that at least I feel I am useful to the community and they need me (RM-3: 10/03/2003).

For the Mikura residents, participating in various community activities, such as Plaza Five lunches and tea gatherings, hosting visitors, and community center construction, may

have helped them to feel "needed" and "useful" to the community. MC provided Plaza Five

as a socializing space to exchange information as well as a sharing and reflecting space to see

their participation makes a contribution or has an impact on the community activities.

Whether their participation could be long lasting or could become more influential to the

outcomes of the collective process or not was unknown at the point of my field work.

However, being offered and provided a number of opportunities and chances, the residents

were slowly able to contribute their time and energy to the community, making former and

new residents feel they were part of the community. These were critical factors in increasing

their community capacity.

7.4. Conclusion—Is Mikura Safer and Better Than Before?

During the reconstruction period, it was apparent that that it was very difficult to

restore the Mikura community due to the severity of damage from the quake and fires which

resulted in the high loss of housing stock. Indeed, despite the efforts of MC in providing

cooperative housing and other facilities, people experienced difficulties in returning to their

homes and daily routines. One reason was the lack of a strong CBO and youthful leadership

in Mikura, compared with Mano. Without the skills, knowledge and leadership of people

such as those from MC, it was hard for the Mikura community to start again. The Mikura

case study suggests that it is essential that communities try to keep the post-disaster survivors

within their communities as much as they can, and if disaster victims have to evacuate, their

communities should make sure that the evacuees can return as soon as possible. As of 2003,

only one third of the residents of Mikura were those who had lived in the area prior to the

earthquake, while two third of the residents had come to Mikura from other areas after the

quake[76]. This mixture of old and new residents did not seem a critical issue for MC, but enhancing community solidarity in light of these conditions while achieving disaster recovery could have been another important function of the CBO.

Community-based organizations, such as Machi-Communication, have played a key role in providing information and keeping the Mikura community together since the disaster in 1995. However, the negative population recovery and the aging of the population continued to produce vulnerability to future disasters. In the inner-city of Kobe, even though fragile old wooden housing disappeared after the disaster, the complex property ownership and tenancy issues remain to restrict the use of available land, and the chances of tenants being able to return quickly to Mikura. Empty spaces were therefore found, everywhere in the community in 2003.

With the help of the city government's recovery plan, the Mikura Town-Building Council succeeded in reducing unsafe physical conditions, through such efforts as building wider streets, providing more public open spaces, and constructing new buildings[77]. The contributions from the local city government to the Mikura community were certainly huge; however, this did not necessarily mean that the community and the local government worked together very well. Particularly, the relationship of MC with the local city government was not as successful as that in Mano, as mentioned earlier. MC staff's and overall residents' feelings towards the city government were not very positive when I interviewed them in the summer of 2003 because of the lack of a trusting relationship created during the process of

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[76] Many of the new-comers were also Kobe disaster survivors. When they applied to the Kobe city government for permanent homes, they were offered public housing located in Mikura (interview with RM-6: 10/06/2003).
[77] For this land readjustment project in the Mikura community, the government spent about 10.2 billion Yen (Kobe City).

the Land Readjustment Projects. A number of problems the community was facing needed to be solved with collaborative efforts between the city government and the community.

These included things such as finding a way to utilize the empty spaces scattered in the community to reduce the community's existing vulnerability, effective management of their new community center to assure the effective operation of the community networking space and resource, and the need to work with government to share MC's skills and knowledge with other communities to further increase overall community capacity and assets. For newly re-established communities like Mikura, a challenge remains for both the local city government and the community to establish a long-term relationship for the purpose of achieving "*Bousai Machizukuri*" (disaster resistant community planning).

While inner-city issues related to community physical vulnerability were very much improved in the Mikura community, new factors emerged during the recovery process that produced different types of vulnerability, such as empty spaces making the community physically disintegrated and potentially unsafe. In terms of community development, the Mikura community was able to establish a foundation of community development after the earthquake, such as the creation of community center and Mikura 5, 6, and 7 Blocks Neighbourhood Association (NHA). However, the way in which the community center was to be managed was unclear as was the distinction between the roles of the Mikura NHA in contributing to the Mikura community development and those of other existing CBOs, such as MC and the Mikura Town-Building Council. Unlike Mano with its *Doshikai* (a CBO for educating and training young community leaders), Mikura did not have a CBO that served to help the Mikura residents to improve their leadership skills and knowledge for community development. In addition to the fact that Mano CBO members were aging, the long-term

sustainability of these CBOs was not certain. In particular, the issue of Machi-

Communication's high dependency on non-paid volunteers could be very difficult to solve

due to Machi Communication's poor relationship with local city government, the principal

financial source in Japan (interview with MC-A1: 08/19/2003). Additionally, both the

Mikura Town-Building Council and the NHA depended on MC's assistance for various

activities, such as creating reports for meetings, taking minutes, and distributing community

information. It seemed that establishing a good working relationship with not only the local

city government, but also with other CBOs in Mikura was one of the important tasks that

these CBOs needed to accomplish in order to ensure effective long-term community

development practice for the Mikura community. Although challenges and unsolved issues

still remained, Mikura was able to accomplish much in achieving community capacity

building. While the community had to re-start all over again due to the quake, MC made a

critical contribution to establishing a basis for functioning as a community, such as providing

the residents a social space to communicate with each other, opportunities to express their

concerns and interests, and offer various occasions and events to participate in learning more

about the community and its residents.

CHAPTER 8 Vulnerability, Capacity and Recovery Analysis

8.1. Introduction

In this chapter, the two case studies are analyzed according to the framework developed in Chapter 5, (Figure 5.2: Community Vulnerability and Capacity Model). The model comprises the key concepts of this thesis—community vulnerability and capacity, community development, and disaster recovery—in order to investigate their interactions in the community recovery processes. A summary of recovery is first provided, employing the factors and indicators of recovery for the two communities (Tables 8.1 and 8.2). To understand how community vulnerability and capacity interact with each other, I use the model (Figure 5.2) as an analytical tool to illustrate the pre- and post-disaster periods of the communities. I further adapt the Community Vulnerability and Capacity Model (Figure 5.2) to develop diagrams (Figures 8.1 to 8.4) to help clarify the analyses. First, changes or improvements in community vulnerability and capacity are examined. Second, the relationships and interactions between community vulnerability, capacity, and community development in the pre- and post-disaster periods are investigated. Third, comparative analysis of the two communities' recovery, vulnerability and capacity is conducted. In this section, reflections on the anticipated results are made.

8.2. Mano Community Vulnerability, Capacity, and Recovery Analysis

8.2.1. Recovery from the Kobe Earthquake

The Mano community was not prepared for an earthquake disaster, but their previous experiences of community problem-solving practices helped them respond to the emergency situation quickly and efficiently. The community was able to establish a community-led emergency headquarters within two days of the earthquake and the headquarters made efforts to keep the residents within the community while providing emergency shelter as well as temporary and permanent housing so that their population losses were not as severe as other communities. Table 8.1 shows a summary of Mano recovery from the Kobe earthquake.

Table 8.1: Mano Community Recovery

Community Recovery Factors	Community Recovery Indicators
Effective Emergency Response	Mano Emergency Headquarters was set up on the second day after the quake. The headquarters controlled emergency relief goods to distribute them to Mano residents. The fire started soon after the quake, but it was put out by the residents.
Emergency Shelter and Housing Reconstruction	Mano elementary school, community centers, and Mitsuboshi Belting factory's gym were open for the evacuees to stay in. The headquarters negotiated with the central government to build temporary housing in the Mano community for the Mano residents.
Population Restoration	About 1,000 people moved out of Mano. In the 2005 population census, Mano population was 73% of the pre-disaster period. Over 30% of the Mano population was age 65 and older. The aging population ratio is very high compared to that of Kobe city, which was 26.6% as of 2005 census. It appears that there may also have been an increase in the proportion of foreigners living in Mano after the earthquake.
Community Recovery Planning	Increased awareness of the physical vulnerability of Mano led to the initiation of projects related to upgrading structures, and building collective housing units to reduce future risks. Existing community planning was also recognized and implemented, resulting in improvements, such as the widening of streets and the increasing of open spaces.
Engagement of CBOs	Existing CBOs, such as Mano Town-Building Council, *Doshikai*, the women's club, and the senior's club are constantly active. New CBOs, such as *Manokko* have also been established. The younger generation of *Doshikai* members took over leadership roles in many existing CBOs.

Mano's fast response to the emergency situations with activities, such as fighting fires, providing emergency shelters, food and other relief goods, and organizing CBOs to

deal with the state of chaos, contributed to achieving effective recovery. Their ability to coordinate available resources, and facilitate the provision of these resources to those who needed them was remarkable. This ability helped to relieve the fears and anxieties of the disaster survivors soon after the quake and they were able to concentrate on rebuilding the community together. Under such tragic circumstances, Mano was still able to maintain its autonomy and collective bottom-up decision-making approach. This was largely due to its past history of struggling to achieve good community development and the collaborative relationship with the local government that such efforts led them to establish. Through the recovery activities, the community gained confidence in their community development, continued actively involving the residents in community events and projects, became more aware of the importance of disaster preparedness, and dealt with community vulnerability to reduce future risks. Mano, therefore, was able to improve the quality of community life in their community and that contributed to reducing social vulnerability.

The disaster did not destroy the community of Mano, nor did the subsequent fires, which the community successfully fought to minimize their losses. The existence of the Mano 20-year community plan provided a long-term community visions, of Mano such that the community did not need the disaster land readjustment plan to manage its physical damage and further development after the disaster. As a result, the Mano community maintained its physical vulnerability (e.g. fragile old wooden dwellings, high building density, narrow streets, and few open spaces). While the physical vulnerability of Mano remains unsolved, the community was able to improve its quality of community life by reducing social vulnerability to future disasters.

8.2.2. Vulnerability and Capacity Conditions and Changes

Figure 8.1 below is based on the model developed in Figure 5.2. Its purpose is to capture and summarize the Mano community's vulnerability and capacity in the pre- and post-disaster periods. In Figure 5.2, community vulnerability was identified or measured in terms of five factors—demographic change in the community, resource accessibility, social conditions, socioeconomic conditions, and physical conditions (see the details in Table 5.1 in Chapter 5). Also to identify community capacity I chose five factors—the presence of CBOs, resident participation, a community planning (*Machizukuri*) approach and accomplishment, strategies for community planning, and government involvement (see the details in Table 5.2). Because community vulnerability and capacity are both related to activities carried out through community development, I chose four factors to elaborate it—community functions, planned efforts, community organizing efforts, and community types and themes of community development (see details in Table 5.3). Community recovery discussed in the previous section is then taken into consideration as a critical factor in understanding the changes and improvements made between the pre- and post-disaster periods.

Figure 8.1 illustrates how community vulnerability is accumulated while on-going community development is practiced and community capacity is built as revealed in the Mano case. Community capacity is considered as a factor that buffers against vulnerability or converts existing vulnerability to a lesser degree of vulnerability. Also, this diagram demonstrates the changes in community development, capacity, and vulnerability in the pre- and post-disaster periods. The bold font in the post-disaster conditions in Figure 8.1 indicates "no change" (i.e. the indicator remained the same in pre- and post-disaster periods).

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Figure 8.1: Mano Vulnerability and Capacity Conditions in Pre- and Post-Disaster Periods
(• **bold font** = factors that did not change between pre- and post-disaster periods)

PRE-DISASTER PERIOD OF MANO COMMUNITY

Community Development
-Anti-pollution movement,   -Welfare promotion programs,   -Green promotion programs,
-**Mano 20-year Community Plan**,   **-Well established CBOs**,   **-High public involvement**,
-Collaborative working relationship with government and business,
-Various community events and gatherings;   -Roles of CBO as facilitator, consultant, etc.

DISASTER

State/ Political Levels of Vulner-ability

- Inner-city economy in decline,
- **Power imbalance between local and central gov't**

Local/ Community Levels of Vulner-ability

- Local industries leaving,
- Worsening health,
- Lack of social pro-grams,
- **Population decline,**
- **Newcomers (Vietnam, Philippine),**
- **Aging population.**

Physical/ Technical Levels of Vulner-ability

- Susceptible to fires,
- Traffic congestion,
- No parks.
- **Old wooden houses,**
- **High density,**
- **Narrow streets.**

Building Community Capacity

- **High solidarity and integration with leaders, experts, experienced residents to deal with community problems,**
- **Great numbers and diversity of CBOs to enhance skills, knowledge and networks,**
- **Projects and plans are created to deal with pressing issues (i.e., providing services for the elderly groups),**
- **Local government long-term involvement enables them to promote long-term plans and visions (Mano 20 Year Plan),**
- **Increase in community facilities (i.e., senior homes, cooperative housing, childcare centers, parks) can enrich basic community life.**

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The Kobe Earthquake

Fires
(secondary impact)

Potential Hazards

Earth-quake,

Typhoon,

Flooding,

Landslide

etc.

POST-DISASTER PERIOD OF MANO COMMUNITY

Community Development
-**Mano 20-year Community Plan**,   -**Well established CBOs**,   -**High public involvement**,
-**Collaborative working relationship with government and business.** -**Roles of CBO as facilitator, consultant, etc.** -**Various community events and gatherings**, -NPO, & *Machizukuri* Office, etc.

State/ Political Levels of Vulner-ability

- Japan overall economy in decline,
- **Power imbalance between local and central gov't.**

Local/ Community Levels of Vulner-ability

- Suffering local economy,
- **Population decline,**
- **Newcomers (Vietnam, Philippine),**
- **Aging population.**

Physical/ Technical Levels of Vulner-ability

- **Overall poor infra-structure,**
- **Old wooden houses,**
- **High density,**
- **Narrow streets.**

Building Community Capacity

- Community is aware of and focused on disaster prevention related activities,
- Younger generations are taking over the roles of leaders,
- Local business and industries' participation helps increase financial stability,
- Disaster preparedness drills,
- **High solidarity and integration to deal with community problems,**
- **Great numbers and diversity of CBOs to enhance skills, knowledge and networks,**
- **Projects and plans are created to deal with pressing issues,**
- **Local government long-term involvement enables them to promote long-term plans and visions,**
- **More houses, parks, and public facilities were built (subway station, 100 ton water tank).**

Recovery from the Kobe Earth-quake

Potential Risk

Future Potential Hazards

Earth-quake,

Typhoon,

Flooding,

Landslide,

etc.

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I argue that Mano community still remains vulnerable because of local/community

level (e.g. high ratio of elderly population and negative population growth) and physical and

technical level conditions (e.g. existing fragile wooden dwellings, high building density,

narrow streets, and fewer open spaces) in both pre- and post-disaster periods (see Figure 8.1).

It should be remembered that Mano chose not to participate in the land readjustment program

of the city government, and in a sense it missed out on the opportunity to achieve road

widening and program of open space. However, beyond physical improvement, community

development of Mano in the pre-disaster period included activities which set it apart from the

Mikura district, and included an anti-pollution movement which led to a series of other

community-led projects such as welfare and green promotion projects. In 1995, when the

Mano community was reaching the final stage of its first 20 Year Community Plan (1982 to

2001) and beginning to work on their next community plan, the earthquake struck the

community. Through Mano's long-term development practices in the past, the community

was well equipped with various resources before the Kobe earthquake struck it. The Mano

community was able to achieve high social integration and to function as a basis for the

CBOs to implement community development processes and actions in the pre-disaster

period.

Because the Mano community was able to respond quickly to the earthquake, by

doing things such as setting up the Mano disaster relief headquarters, negotiating to construct

emergency shelters and housing within the community, and providing services to estimate

the housing damages, the emergency period subsided quickly and the disaster relief

headquarters in Mano was closed in October 1995. Some disaster-related activities, such as

providing information distributed by Kobe City to the disaster survivors, were taken over by

the Mano Reconstruction and Machizukuri Office to continue serving the community. The community also re-started on-going projects that were planned in their 20-Year Plan in 1982, such as the Shiriike child care centre, the Mano elementary school renovation, and the Hamazoe 3 Block streets improvement (Table 6.4). The experience of the disaster, particularly the collaborative efforts of the community in fighting the fire, gave the Mano community confidence to further increase its community capacity (e.g. the younger generation took leadership roles, housing projects were built, a senior home and child care center were established, and local business supported the community activities). Its increased capacity enables the community to further minimize their existing vulnerability to future disasters (e.g. the senior residents have more community services and opportunities to have constant interactions with their neighbours, and awareness of community disaster preparedness). The Mano community has been viewed as a good example of "*Machizukuri*" in Japan, nonetheless such a reputation could not bring an influx of younger people to the community.

Although overall community capacity increased in Mano, which acted as a buffer effectively reducing vulnerability, the factors producing future vulnerability in the Mano community, such as population decline and deteriorating buildings and infrastructure, and aging, had not fully been eliminated. As a result the Mano community must continue to work on on-going vulnerability issues that have existed since the pre-disaster period. In particular, the aging population is a national problem in Japan, but the Mano community has a higher propotion of people who were 65 or older (31.5% for Mano in 2005) than the Kobe City average (26.6% for Kobe in 2005) (Table 6.3). It is worth noting that Mano has been dealing with an aging population issues since the 1980s and the community has provided resources to

the elderly in the past. This contributed to gains in community capacity as well as in capacity of the elderly population. As a result, Mano's long-term community development efforts reduced the existing conditions of vulnerability of the elderly groups.

8.2.3. Relationship between Capacity and Vulnerability

The previous section identified the overall conditions of vulnerability and capacity in Mano community in the pre- and post-disaster periods. It provided an overview of the community's vulnerability and capacity. However, a more detailed and nuanced insight into capacity and vulnerability is needed to understand the interactions between them. I examine further below more specifically how community capacity acts to buffer or mitigate existing vulnerability. I develop a diagram (Figure 8.2) to schematically show the interactions among community development, capacity and vulnerability in the pre- and post-disaster periods— what type of community capacity is influencing which condition of vulnerability in both the pre and post disaster periods. In order to focus on the interactions between community development, capacity, and vulnerability, I take these factors and indicators from Figure 8.1 and placed them in a new diagram (Figure 8.2). Each indicator from Figure 8.1 is listed in Figure 8.2, though I had to shorten or change certain expressions in order to make them fit into the limited space of Figure 8.2. Then I link each of these factors with arrows. These arrows represent relatively strong connections or the influence of one factor on the other.

Figure 8.2: Mano Relational Map of Capacity and Vulnerability in Pre- and Post-Disaster Period (adapted from Figure 8.1)

COMMUNITY DEVELOPMENT

Pre- and Post Disaster

Anti-Pollution Movement

Welfare Promotion

Green Promotion

Mano 20-Year Plan

Well-established CBOs

Collaboration with government and business

Public high involvement

Events & gatherings

Post Disaster

New NPO, *Machizukuri* Office

COMMUNITY CAPACITY

Pre- and Post-Disaster

High solidarity and integration

Diverse CBOs, skills & knowledge

Government provide resources

Priority for community pressing issues

Parks, green spaces, playground

Senior homes, day care, co-ops

Post-Disaster

Growth in younger generations

Awareness of disaster reduction

Disaster drills, water tank for fires, etc.

More community facilities and services

COMMUNITY VULNERABILITY
Pre-Disaster

Demographic change

Suffering local economy

No parks & green

Lack of social programs

Fragile houses and buildings

Narrow streets, traffic jams, density

Susceptible to fires

Worsening health

COMMUNITY VULNERABILITY
Post-Disaster

The vulnerable groups are given priority, and services.

Efforts to bring back local businesses (i.e. a shoe/rubber company returned).

Physical vulnerability exists but reduced (increased in parks, playground, open spaces, wider streets, new housings, etc).

Stagnated population recovery

No planning or efforts to manage new-comers (Vietnamese, Philippines, etc)

Legend

☐ Pre- and Post Disaster Period

▨ Post-disaster Period

→ Decrease Vulnerability

⤷ Contribution to Vulnerability

In the case of Mano, community development and community capacity were characterized by continuity in the pre and post-disaster periods; therefore, these boxes are titled "pre- and post-disaster" in order to describe the listed conditions or activities that are a continuation from the pre-disaster to post-disaster period. Conditions or activities listed in a box with a post-disaster box (lightly shaded) show these conditions started in the post-disaster period (see Figure 8.2). On the other hand, community vulnerability before and after the disaster is expressed in two separated boxes in order to show that there is difference between the conditions and production of vulnerability (how vulnerability is experienced and how vulnerability is generated) even though characteristics of vulnerability are the same. For example, as mentioned earlier, Mano's aging population was recognized as a community issue and a number of community development practices have been initiated since the pre-disaster period to deal with it. By improving existing community development to increase the capacity of the aging population, the Mano community was able to reduce the conditions of vulnerability of its elderly. Thus, vulnerable conditions in the pre-disaster period were reduced through community capacity building efforts.

Below is a summary of the Mano community analysis focusing on relationships and interactions between capacity and vulnerability.

1. A web of complex interactions between community development, capacity and vulnerability.

Overall, the Mano community is a very active community with many resources and activities considering the fact of their long history of community development, as well as disaster recovery efforts and subsequent on-going community-led events documented in the literature. The number of arrows in the diagram (Figure 8.2) reflects that there are multiple

and reinforcing interactions between these indicators. As Inui (1998), Konno (2001), and Shiraishi *et al*. (2002) claim, Mano has rich networking among neighbours. One individual is often involved in more than two community groups and plays an important role in each organization. Because the leaders of many community organizations in the Mano community often take leading roles for many organizations in the community as well, these leaders have overlapping roles over different organizations. Each organization is different, but due to the fact that they share many or the same members, they have excellent opportunities to learn about each other and they tend to communicate with each other well. With such rich and high levels of networking and good information flow, Mano community has enriched community activities that inter-relate, reinforcing the effectiveness of the outcomes.

The Mano community project to assist elderly groups is a good example of how this capacity is used to deal with the most vulnerable elements in the population. Providing a mobile bath service, and then lunch services that included health check-ups were some of Mano's strengths in expanding one activity leading to another and creating some more activities that ultimately improved not only its physical environment to reduce physical vulnerability, but also the residents' health, children's safety and assistance for the elderly to reduce social vulnerability (Makisato 1981; Konno 2001). The Mano community was able to increase and expand their community-led activities which provided more opportunities for the residents to participate, and encouraged them to become involved in more diverse activities and such activities resulted in the positive growth of its community capacity.

2. Existing pre-disaster community development practices and community capacity were enhanced, increased, or retained in post-disaster Mano.

Experiences from the Kobe earthquake created an awareness of the importance of carrying out disaster planning and vulnerability reduction through the efforts of the community. Such awareness soon resulted in actions such as disaster preparedness drills, anniversary events to remember the Kobe earthquake, and the creation of a 100 ton water tank which increased community capacity to deal with vulnerability issues. While many communities established Town-Building Councils soon after the earthquake to promote recovery and community rebuilding, their activities did not last long (interview with Mr. Miyanishi: 10/10/2003). On the other hand, community development in the post-disaster period, as shown in Figure 8.2, suggests that the Mano community was able to establish the Mano *Machizukuri* Office and an NPO, *Manokko*, in addition to the Mano Town-Building Council (established in 1981) to deal with long-term recovery and community planning (*Machizukuri*) related activities which enhanced community capacity; involved more people, CBOs, government, and businesses; and resulted in the minimization of the conditions of vulnerability.

3. On-going vulnerability reduction activities were carried out during and after the disaster.

Pre-disaster vulnerability conditions have been reduced to some degree after the disaster. In other words, enough capacity has been accumulated to continue to deal with community vulnerability. Vulnerability in the pre- and post-disaster periods was continuously dealt with through the efforts of the community leaders as illustrated by a

number of arrows in Figure 8.2. Although disaster damage from the earthquake was minor compared to other communities, Mano lost 25% of the housing stock and 1,000 people (20% of the Mano population) left Mano due to the disaster. Yet the vulnerability of the district did not increase by the reconstruction efforts per se because Mano made every effort to prioritize the assistance of vulnerable groups through its community development activities, such as providing shelters and permanent housing. Mano CBOs enhanced community capacity through their emergency relief efforts, such as fighting fires and the establishment of the Mano disaster relief headquarters. Through such activities, the Mano community gained confidence regarding community development approaches, which enabled it to further deal with existing vulnerability. The Mano community's ability to maintain good community development practices led it to enhance community capacity and reduce factors to generate any potential vulnerability, and contribute to diminishing the conditions of vulnerability.

4. Difficulties in dealing with new and different factors producing vulnerability.

While the CBOs indeed made a significant difference in the success of Mano recovery after 1995, they experienced many challenges. For instance, once the pollution issues of the 1960s and 1970s were mostly resolved, the Mano community began facing more complex and nebulous problems such as economic decline, population decrease and aging, and the growing presence of new residents from foreign countries who lack the established support networks of the Mano residents (i.e. from Vietnam, the Philippine, and Brazil). These issues are complex and are very difficult to manage at a community level alone with limited resources. Indeed, there are no signs of activities or plans to deal with these issues (as illustrated by the lack of links between these factors with community capacity, shown in

Figure 8.2). Nonetheless, overall the Mano community was able to manage community

vulnerability after 1995, without drastically generating more vulnerability due to the

community efforts to increase capacity. However, in order to achieve further vulnerability

reduction, I argue that the community needs to develop new approaches and create diverse

resources that can continue to stimulate their community capacity.

Overall, it can also be said that while experiencing one of Japan's largest disasters in

modern times, the community of Mano was largely able to maintain its status-quo and in the

years after 1995 it even made some improvements in community facilities as a result of the

tragedy. The accomplishments of Mano since 1995 have been significant and this

demonstrates that long standing community development and capacity building can

substantially reduce the conditions of community vulnerability in the event of a disaster.

Moreover, continuation of community development practices is an important element for a

community to mitigate any factors producing community vulnerability (e.g. improving poor

housing development, and increasing more programs to offer community services to the

vulnerable groups). It is difficult to determine with this framework, however, how much of

Mano's effective recovery has been the result of a community "bottom up" approach, as in

the case of the anti-pollution movement, and how much has been the result of the actions of

the central and local government (e.g. rebuilding infrastructure, income support, Kobe City

services for the aged and disadvantaged and so on).

8.3. Mikura Community Vulnerability, Capacity, and Recovery Analysis

8.3.1. Recovery from the Kobe Earthquake

Due to the massive destruction caused by the earthquake and subsequent fires, the Mikura community experienced great physical damage that the community was not prepared for. The local residents were scattered outside of the community in order to find safe places to stay. There were no community level emergency actions carried out and the community leaders from the pre-disaster period did not want to take any responsibility to look after their community in the wake of the disaster. Soon the volunteers and emergency relief workers arrived to assist the disaster survivors, though many of the previous residents did not return to Mikura for a long time or ever. The volunteers assisted the very few survivors left in the Mikura area. The community had to rebuild almost from scratch.

Unlike the Mano community recovery, Mikura lacked access to resources to start emergency relief activities, moreover a lack of presence of CBOs, poor leadership, and the severity of the damage, all contributed to Mikura being unable to respond to this disaster quickly and smoothly. Slow recovery processes merely heightened the residents' inability to resettle in the community. Overall, the Mikura community was able to achieve a level of recovery in the long-term, but it took about 5 years or longer for many of the residents to establish themselves in permanent homes in Mikura, and 10 years after the earthquake, the population was only 65.7% recovered compared to its pre-disaster period (Kobe city 2005). The contributions of Machi-Communication played a very important role in the Mikura community recovery. Table 8.2 shows a summary of Mikura recovery from the Kobe earthquake.

Table 8.2: Mikura Community Recovery

Community Recovery Factors	Community Recovery Indicators
Effective Emergency Response	The Mikura community was unable to set up an emergency relief related support system to assist its local residents. The residents had to rely on the local government's relief services.
Emergency Shelter and Housing Reconstruction	There was a lack of emergency shelters for the Mikura residents. Many of them sought out their relatives and friends for shelters. Some of them stayed in Nagata ward branch city hall. In 1997, 30 temporary housing units were built by Kobe city, which were closed by early 2000. In early 2000, two permanent housing high-rises (total of 90 units) were built by Kobe city in the community. Mikura Five (a cooperative housing project) was built by twelve individual residents.
Population Restoration	In the 1995 census, 8 months after the quake, the Mikura population dropped to 159. On January 1, 1995, a couple of weeks before the disaster, the population of Mikura was 735. In the 2005 census, the population was 483, just 65.7% of the population counted on January 1, 1995. There was a high ratio of elderly residents—the 2005 census showed that 31.5% of the population was 65 and over. This was considerably higher than the ratio for Kobe city as a whole, which was 26.6%.
Community Recovery Planning	Mikura 5 and 6 Blocks were designated as part of the Disaster Restoration Land Readjustment project. The community proposed their community plan that reflected local needs and interests to Kobe City. Two parks (2,500 square meters), 6 meters wide streets, and newly re-built homes with upgraded structure and building code led to an improvement in the community's physical vulnerability.
Engagement of CBOs	A volunteer group which was assisting the residents of Mikura established a CBO called Machi-Communication (MC) in April 1996. Involving the local residents in carrying out various community activities, such as seasonal events and community services for the senior residents, MC was instrumental in the accomplishment of the Mikura community recovery and the organization has continued to assist the community.

However, Mikura's recovery was not as successful at the beginning of the recovery phase, compared to Mano, which was able to act as a community as a whole to deal with the emergency situation. The Mano leaders' fast reaction to the chaos—providing resources to the Mano disaster survivors and allocating them equally and fairly—helped the Mano community maintain their self-sufficiency, which the Mikura community was unable to accomplish within its limited time and resources.

8.3.2. Vulnerability and Capacity Conditions and Changes

Figure 8.3 below summarizes Mikura community vulnerability and capacity conditions in the pre- and post-disaster periods. The Mikura community was also highly vulnerable to disasters in the pre-disaster period and because the community experienced the complex inner-city issues and the community capacity was low, due to the absence of capacity building factors such as active CBOs, there were few efforts made to deal with vulnerability issues. The Misuga Town-Council was inactive at the time of the disaster and there was no apparent effort to enhance community capacity. The Mikura community, like many other inner-city communities, was susceptible to disasters, especially to fires because of its old wooden houses, high building density, narrow streets, and few open spaces.

When the earthquake struck the community, the resulting fires led to further damage which caused this event to be even more tragic. The fire on January 17, 1995, burnt 70% of Mikura. As a consequence, physical vulnerability was substantially reduced. The bold font in the post-disaster period in Figure 8.3 indicates that some indicators remained the same in the pre- and post-disaster periods. However, compared to the Mano community, there were very few indicators in Mikura community that remained the same in the two periods. This clearly indicates how much Mikura community's vulnerability and capacity were changed by the disaster event.

Figure 8.3: Mikura Vulnerability and Capacity Conditions in Pre- and Post-Disaster Periods
(• **bold font** = factors that did not change between pre- and post-disaster periods)

PRE-DISASTER PERIOD OF MIKURA COMMUNITY

Community Development
- Misuga District Development Plan (Mikura community was included), - Inactive CBOs in the late 1980s and onward, - Ritual community events, - Obligatory participation, - Aging of Community leaders, - Traditional, hierarchical relationship with government.

State/ Political Levels of Vulner-ability

- Inner-city economy in decline
- **Power im-balance between local and central gov't.**

Local/ Community Levels of Vulnerability

- No active CBOs,
- Rapid population decline,
- Local businesses and factories are leaving.
- Power imbalance among community members.
- **Aging population.**

Physical/ Technical Levels of Vulnerability

- Susceptible to fires,
- No earthquake related disaster planning existed.
- Old wooden houses,
- High density,
- Narrow streets.

Building Community Capacity

- Recognized needs to improve old and poorly maintained housing,
- **Solidarity and networking of community.**

DISASTER

01/17/95

mag. 7.3

The Kobe earthquake

Fires (secondary impact)

Potential Hazards

Earth-quake,

Typhoon,

Flooding,

Landslide,

etc.

POST-DISASTER PERIOD OF MIKURA COMMUNITY

Community Development
- Mikura 5 and 6 Block Town-Building Council established, -Disaster Restoration Land Readjustment Plan, -Machi Communication, a volunteer group assists community development, - Mikura 5 and 6 Community Plan proposed, -Mikura 5, 6, & 7 Block Neighbourhood Association established, -Highly motivated public participation, -Various events and gathering.

State/ Political Levels of Vulner-ability

- ,Japan overall economic decline,.
- **Power im-balance between local and central gov't**

Local/ Community Levels of Vulner-ability

- Stagnated population recovery,
- Inactive local business.
- **Aging population,**

Physical/ Technical Levels of Vulnerability

- Too wide streets interfere with interactions among residents,
- Unused empty spaces create dark spots at night.

Building Community Capacity

- Community more focused on disaster prevention activities,
- Presence of leaders, experts, experienced residents,
- Machi Communication takes roles as facilitator, advisor, and organizer to increase community capacity,
- Plaza Five creates projects and plans to look after the vulnerable groups,
- Disaster preparedness drills,
- Increased network with those outside of the community,
- High levels of volunteering,
- Increased community facilities (parks, community center, cooperative housing),
- Increased numbers of CBOs.
- **Solidarity and networking of the community.**

Recovery from the Kobe Earth-quake

Potential Risk

Future Potential Hazards

Earth-quake,

Typhoon,

Flooding,

Landslide

etc.

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Community organizing in the pre-disaster period was not effective due to the traditional top-down decision making approaches of the Misuga Town-Building Council. However, after the disaster, volunteer groups such as Machi-Communication offered their time and efforts to rebuild the Mikura community, which slowly contributed to enhancing Mikura community capacity (e.g. by increasing communication through meetings and gathering events) assisting to develop the Mikura community plans, and involving more volunteers, including the resident volunteers to participate in community activities in Mikura. The community succeeded in creating a basis for CBOs (e.g. MC, Plaza Five, and the Mikura Town-Building Council) to actively participate in community capacity building in the post-disaster period.

Since then, the Mikura community has gained a wide range of different forms of capacity to deal with their community's vulnerability. After the quake, the Mikura community's built environment was changed drastically through disaster reconstruction efforts (new houses, wider streets and open spaces) which reduced its physical vulnerability significantly. However, different factors arose to generate community vulnerability in other ways. For instance, the residents, especially the elderly groups, who used to live in a neighbourhood with high density, felt that living in high-rise apartments surrounded by new wider streets made it difficult for them to have interactions with others and create community networks. The characteristics of vulnerability of Mikura were changed from old, fragile wooden buildings, high building density, narrow streets and few open spaces to an unfamiliar living style created by high-rise apartments, and too wide streets which hampered daily interactions between residents for example. The CBO, Machi Communication, recognized this problem and offered spaces and opportunities for the residents to come together to get to

know each other better in order to enhance the community capacity of Mikura. For the Mikura community, the earthquake caused sudden changes in the built environment and this transition was too fast for some residents to adjust their new neighbourhoods. For the Mano residents, on the other hand, much of the old housing withstood the impact of the quake and remained intact after the fire, therefore the residents did not have the sudden transition of re-settlement after the disaster. Moreover, the Mano community had developed the Mano 20-Year Community Plan which allowed processes for retrofitting buildings or relocating the residents to different locations slowly enough for the residents to adjust easily. Unlike the Mikura community, the Mano community did not increase this type of vulnerability after the disaster.

8.3.3. Relationship between Capacity and Vulnerability Analysis

As Figure 8.2 did for Mano, Figure 8.4 illustrates the interactions between community development, capacity and vulnerability for Mikura in order to address questions of how vulnerability and capacity influence each other. The diagram below (Figure 8.4) which pertains to Mikura corresponds to Figure 8.2 for Mano. Below is a summary of the Mikura community analysis of the interactions between capacity and vulnerability.

Figure 8.4: Mikura Relational Map of Capacity and Vulnerability in Pre- and Post-Disaster Period (adapted from Figure 8.3)

COMMUNITY DEVELOPMENT
Pre-Disaster

Misuga District Plan

Inactive CBOs

Ritual events and obligatory participation

Traditional relationship with government

Post-Disaster

Mikura Town Building Council established

Disaster land rezoning plan

Mikura community plan proposed

Machi communication

Mikura Neighbourhood Association

Highly motivated public participation

Events and gatherings

COMMUNITY CAPACITY

Pre- and Post-Disaster

Recognized pressing needs

High solidarity and integration

Post-Disaster

Experiences and skills to participate in CBOs activities

MC as facilitator, advisor, and

Plaza Five as a place for the vulnerable

Disaster drills, maps, and plans

Outside network, volunteer participation

More community facilities and services

More CBOs

COMMUNITY VULNERABILITY
Pre-Disaster

No active CBOs

Demographic change

Suffering local economy

Fragile houses and buildings

Narrow streets, density

Susceptible to fires

Post-Disaster

The vulnerable groups are given priority, and services.

Stagnated population recovery

Inactive local economy

2/3 of people were new residents

Too wide streets interfere with interactions among neighbours

Unused empty spaces create dark spots at night

Legend

Pre- and Post Disaster Period

Post-disaster Period

Decrease Vulnerability

Contributing to Vulnerability

1. An inactive community in the pre-disaster period can become a highly active community in the post-disaster period.

The Mikura community was relatively inactive before the earthquake compared with the Mano case study. Fewer arrows and indicators in the diagram in Figure 8.4 represent fewer community activities and interactions in Mikura than that in Mano. On the other hand, after the earthquake, the Mikura community became more active, which is illustrated with more arrows depicting its interactions. These interactions were mainly the result of the efforts of Machi-Communication (MC), a CBO. Although the Mikura community was not actively involved with community development practice prior to the quake, there was some solidarity and networking at an individual level in the pre-disaster period, which was a critical factor for the residents in establishing a trusting relationship with MC while working together to build community capacity after the 1995 disaster.

2. Existing physical vulnerability was basically eradicated by the fire which erupted soon after the earthquake—Impacts of disaster triggered change in the conditions of vulnerability.

The vulnerability of the Mikura community, especially its physical vulnerability, was drastically reduced due to the fact that fires destroyed most areas of Mikura 5 and 6 Blocks. Mikura's physical vulnerability was not reduced by the efforts of the community, but rather as a result of the fires which burnt the fragile wooden housing. Due to the massive fire damage, the Mikura community was given an opportunity to completely re-develop the community's physical environment. The community was offered a land use zoning plan by Kobe City, as a part of the Disaster Restoration Land Readjustment. The plan was to increase

community safety by widening streets, creating more open spaces, and building housing in compliance with current building codes. The process of land acquisitions was complicated due to the complex property ownership, as well as the fact that each piece of land owned by an individual was often too small and the owners could not re-build the same size of house they had before because it would not meet the current building codes. Some property owners gave up the idea of rebuilding and left their land unused or made it into parking lots.

Moreover, the whole process took over ten years to complete which forced some former residents to settle in other areas. The empty lands resulted in "dark spots" at night making it uncomfortable for residents to walk in the neighbourhood at night, and making the physical environment unattractive due to litter. These are some examples of new factors influencing the physical vulnerability of the Mikura community after the disaster. The severe impacts of the Kobe earthquake changed the conditions of community vulnerability but did not eliminate them entirely, rather different factors emerged generating different vulnerable conditions for the community.

3. A newly-established community seeks outside resources to gain capacity.

Due to the fact that the Mikura community was a small community and that two thirds of the residents comprised people from outside who moved in after the disaster, the Mikura community lacked human capital to manage community development during the recovery period. It was vital, therefore that Machi-Communication came to Mikura and sought outside resources to gain community capacity. Indeed, MC had a wide network outside of Mikura community (e.g. university professors in Tokyo, Kyoto, Osaka and Kobe, leaders of NPOs, Buddhist monks, artists, college students, and so on) which was a great

asset to them in their capacity building. However, the effectiveness of such approaches needs

further examination to understand the long-term results in vulnerability reduction as well as

capacity building.

    <u>4. A newly re-established community has limited approaches and resources for</u>

<u>vulnerability reduction.</u>

    The Mikura community in the post-disaster period was practically a new community

with new members, new CBOs, and new streets and community facilities. Although their

ability to increase community capacity within a short amount of time was significant, it

seems that the community lacked appropriate skills and knowledge to create more diverse

strategies and approaches to deal with complex conditions of vulnerability. Most of Machi-

communication's and Plaza Five's events relating to vulnerability were primarily focused on

the elderly or children. It was important for the community to deal with these people, but

they did not have sufficient resources to expand their activities. Specifically, their limited

funding restrained them from seeking different approaches to meet the need of the vulnerable

groups.

    Moreover, the Mikura community was one of the communities that had difficulties

trusting the local government after the earthquake. The fact that the government was slow

responding to the emergency, causing a critical delay in the rescue of the disaster victims,

and the top-down decision making process the government used in the development of

Disaster Restoration Land Readjustment Projects, created distrust of the government in the

community. As a result, the Mikura community developed a poor relationship with the

government, which limited the Mikura community's financial resources. While the Mano

community, which had much better relations with government, was soon able to set up emergency shelters in their neighbourhood parks with the approval of the local government, the Mikura community, which wanted to use the riverbank for emergency shelters was unsuccessful in its negotiations with the local Kobe government and failed to receive permission to do so. Unlike Mano, Mikura was not well equipped with varied community development knowledge and skills in the pre-disaster period. Although Mikura sought community development expertise from outside resources at the beginning of the post-disaster period, its approach to reducing vulnerability seemed hard to develop and improve in a way to manage its vulnerability effectively. Much of Mikura's resources were obtained from outside sources which may have limited their capacity to influence community vulnerability in the short-term.

  5. A community can have a chance to survive if there is a sign of its capacity, and if there are opportunities to build it up again.

  An interesting aspect of the Mikura community analysis is that while community development and the vulnerability of the Mikura community were severely disrupted by the earthquake (the figure shows pre- and post-disaster community development and vulnerability are disconnected), and while community capacity in Mikura was not high, after 1995 it was somehow able to survive and continue (the figure shows that pre-disaster community capacity is a part of post-disaster capacity).

  Few previous residents remained in Mikura, but these individuals became the core members to contribute to the rebuilding of Mikura community. Even if their original community capacity was not high, certain factors—a few key individuals who cared about

the community, volunteers and CBOs devotion, availability of outside resources, some assistance of government assistance, and so on—contributed to the long-term sustainability of the Mikura community at a level which helped in building a foundation for their effective community development practice.

Many of the interviewees mentioned that they had some experiences in conducting volunteer activities for neighbourhood associations, parent teacher associations, woman's clubs, youth clubs, and small business owners associations (my field notes: 2003/10/06). Their experiences, skills, and knowledge were utilized on various occasions after the disaster and this was an important factor that enabled the community to build capacity and achieve recovery.

Overall—as with Mano, the Mikura community accomplished much following the earthquake. The Mikura community was not well-integrated before the disaster, but a series of collective efforts—on the part of Machi Communication and the residents—contributed greatly to the recovery from the Kobe earthquake and supported long-term community development to deal with future disasters. Due to the fact that the Mikura community became independent from Misuga district after the disaster, their community development practices changed dramatically. The decision-making processes became more democratic and bottom-up. Machi-Communication (MC) helped to develop a new community plan and established a new Town-Building Council. Accordingly, the capacity of the Mikura community increased due to the efforts of MC. It is also important to mention that the City of Kobe in fact, contributed to enhancing the Mikura community's capacity through building community infrastructure, specifically, through the land-zoning project. Without help from MC and

implementation of land rezoning projects by the government, they would not have been able to increase their capacity and therefore they would remain vulnerable. Although the community's structural safety was achieved, aging of the population and slow population growth continued to produce social vulnerability of the community.

8.4. Comparing the Two Case Studies

8.4.1. Different Recovery Processes

This section briefly compares the two communities' disaster recovery activities. As mentioned in the previous sections, Mano accomplished relatively faster and smoother disaster recovery. While Mikura was able to reach some level of recovery, the process was slower and it took longer to accomplish it. For Mano, although the community was not prepared, the Mano Town-Building Council played a key role in advising and assisting the residents to utilize existing skills and knowledge to affect recovery. The Mano 20-year community plan was supported by the local government and remained the principal plan representing the community's future vision, interests and needs during the reconstruction phase. Disaster restoration related plans, such as the construction of new housing and disaster preparedness drills gradually became incorporated into Mano's existing community planning.

On the other hand, for Mikura, the community was not prepared for a disaster either, and experienced difficulties responding quickly to the impacts of the disaster. Their pre-existing community planning activities carried out by the Misuga Town-Building Council basically faded away due to a lack of well established CBOs and active leadership in the pre-disaster period. The Mikura community had to create a new community plan which could

reflect the local interests and needs in the midst of the disaster recovery period when many of the Mikura residents were dispersed due to evacuation. Without outside resources, including the local government assistance and volunteers, the Mikura community was unable to deal with disaster recovery. Although the Mikura Town-Building Council was established in April 1995, this new CBO and MC had to face a number of issues, such as debris removal and locating the dispersed local residents before launching any rebuilding projects. Top-down, bureaucratic decision-making approaches taken by the central and local governments were particularly criticized by the disaster survivors at that time. MC and the Council on the other hand, took self-help approaches that were bottom-up and encouraged the survivors to gain autonomy. The downside of these latter approaches was that they tended to take more time to accomplish. The Mikura recovery was not effective in the short term but was effective in the long term.

8.4.2. Reflections on Anticipated Results

The potential results were anticipated in Chapter 5 as follows; low community vulnerability, good community development, and high community capacity, will likely result in effective community recovery. On the other hand, high community vulnerability, poor community development and low community capacity will likely result in poor disaster recovery (see Table 5.5).

The anticipated results were made as simplified explanations of the research questions and did not include detailed interactions between community development, capacity and vulnerability (e.g. Does low vulnerability increase capacity? Does high capacity decrease high vulnerability? Does good community development lead to building community

capacity?). However, after obtaining the data and analyzing them, the study found that there were complex interactions between vulnerability, capacity, and community development. The research findings suggest that high vulnerability did not necessarily decrease community capacity, and high capacity and good community development did not always eliminate vulnerability entirely. Thus, the case of Mano clearly showed that effective disaster recovery was possible in a situation characterized by high vulnerability, high capacity, and good community development.

In the Mano case, vulnerability was high, but the conditions of vulnerability were reduced by Mano's high community capacity and good community development practices minimized potential factors that might produce more vulnerability, and that resulted in fast and smooth disaster recovery. On the other hand, in the Mikura case, high vulnerability was not dealt with by the community due to its poor community development practices and low community capacity, which resulted in ineffective recovery processes at the beginning of Mikura recovery. However, in the long-run, the Mikura community was able to reach a certain level of disaster recovery due to the various factors supported mostly by the outside sources (e.g. the long-term commitment of MC, dedicated volunteers from inside and outside of the community, and the government-led land use planning—the Disaster Restoration Land Readjustment Plan). Slow but sound community capacity building resulted from the efforts of MC organizing the community to lead better problem-solving outcomes, providing the appropriate and adequate information for better decision making processes, and guiding the residents to gain their independence and self-sufficiency. Mikura's high vulnerability was therefore, mitigated by the community's enhanced capacity. The Mikura Town-Building Council assisted by MC held a number of meetings and gathering events to discuss

community issues with the residents and reflected the residents' needs, interests and future visions in the community plans in order to improve the quality of community life through community development efforts. It took a long time for Mikura to achieve the recovery it did, however, Mikura's low community capacity and poor community development practices in the pre-disaster period were changed into high capacity and good community development through the contributions from MC and outside resources in the post-disaster period.

8.4.3. Comparing the Mano and Mikura Communities

I used the diagrams (Figure 8.2 and 8.4) developed in the previous sections to assist in making comparisons between the two communities' community development, capacity and vulnerability. The Mano community, as mentioned in Chapter 6, had a series of complex and rich community activities both before and after the earthquake, which were represented by the number of arrows in Figure 8.2. Such diverse community activities worked together to reduce Mano's social vulnerability. The Mano district's vulnerability was well compensated for by diverse forms of community capacity (e.g. construction of cooperative housing, planning and implementation of the Mano 20-year plan, and holding seasonal events) which served to help deal with vulnerability in the pre- and post-disaster period. In other words, it is most likely the case that a well established community can have a better chance of achieving an effective and smooth recovery while reducing vulnerability. In the case of the Mano community recovery, existing CBOs were able to operate with abundant resources (knowledgeable individuals, long standing CBOs, supportive local business, collaborative relationship with Kobe City, etc.) to lead the residents to implement complex recovery tasks. Their long-term history of community development practice and working relationship with

the local government certainly contributed for the CBOs roles in effectively facilitating and advising the community recovery processes.

On the other hand, the Mikura community had fewer community activities and interactions in both pre- and post-disaster periods compared to the Mano community, contributing to the Mikura community recovery taking longer and being harder to accomplish. Although the Mikura community increased its level of social activities and interactions after the disaster, these interactions lacked the diversity and complexity of those of the Mano community. As a result, the Mikura community did not experience the reinforcement and enhancement of capacity building that the Mano community did. However, this does not mean to say that poorly implemented community development necessarily resulted in ineffective or unsuccessful recovery. In the case of the Mikura community recovery, even though community development was not well practiced prior to the quake, the Mikura community took a self-help approach to the community gaining control and independence. As a result, MC made significant accomplishments within a limited time and with limited resources.

Moreover, compared to the Mano community, the Mikura community was able to seek more resources from outside of the community and to maintain the networks that were created in the process, and indeed it continued to expand them. Most of all, the presence of Machi-Communication was unique in that the CBO focused on broad community development only rather than taking an issue-based approach. There are, consequently, no other cases like Mikura community in Japan. For instance, even though the Mano community

had a wide range of CBOs, there were no CBOs that consisted of people from outside of the community.

Another interesting comparison is that the different impacts of the disaster and recovery processes directly affected community vulnerability. In Mano's case, efforts to minimize the disaster damage in 1995 made it possible for the community to return to their status-quo relatively quickly, but it also meant that physical vulnerability (e.g. fragile wooden dwellings, high building density, and narrow streets) remained unchanged. While their accomplishments increased community capacity which mitigated vulnerability, the physical vulnerability remained very similar to what it had been in the pre-disaster period due to the fact that the spontaneous effort of fighting fires minimized the fire damage and preserved the older housing stock. It is rather ironic that while the Mano community was successful in minimizing the physical damage from the earthquake, it perpetuated this particular condition of vulnerability that existed before the quake because the old fragile wooden buildings were still intact after the disaster. However, their "bucket relay" efforts (to put out fires) that saved these old wooden homes resulted in building more confidence in its planning approach and contributed to further increasing community capacity.

It is important to note that while physical conditions of vulnerability persisted to a large degree in the post disaster period in Mano, the number of fragile wooden buildings was reduced to some extent after the quake; some narrow streets were widened; and the high density was to some extent improved through a series of co-housing and cooperative housing projects.

On the other hand, the Mikura community suffered severely from fire damage. The district lost 70% of its houses which were old fragile wooden buildings which contributed to

Mikura's physical vulnerability. The government designated Mikura community for one of the Disaster Restoration Land Readjustment projects, which allowed Mikura to become a safer community due to construction of wider streets, more open spaces, and buildings in compliance with current building codes. Their physical vulnerability of the pre-disaster period and old fragile wooden houses were basically destroyed and altered by the fire, and the government-led readjustment plan enabled the community to create a "disaster resistant" community. The fire then, offered Mikura community a "recovery opportunity" and a chance to be basically re-born almost new. It can be said that the Mikura community achieved a certain level of recovery and due to physical improvements of housing and other infrastructure the community ended up safer and better. However, it is difficult to ascertain how such improvements contributed to individual survivors' recovery. This is especially so because it has often been hard to locate those who had to leave the community and thus unable to know their recovery progress in terms of restoring their lives to pre-existing levels. This was not the focus of my study however, and issues of relocation following disasters need special attention in planning for recovery.

The Mikura community (Figure 8.4) made significant changes over time before and after the disaster in all key elements—community development, capacity and vulnerability. This is mainly because the Mikura community in the pre-disaster period was not well organized in many regards. They became a more integrated community after 1995 than before; however, it may not be a precise description to call their recovery outcome a great success compared to that of the Mano community whose long standing community development efforts brought recovery. Therefore, although the Mikura community gained significant capacity since the disaster, it is difficult to judge whether the level of the Mikura

community development practices is the same as that of the Mano community. The Mano community had over 30 years of community building practices up to 2003 while Mikura had less than 10 years of experience. They both shared similar historical development paths—inner-city development and decline, and consequent physical and social vulnerability to disasters, but they have dealt with their vulnerability quite differently in the post-disaster period. Their approaches to and nature of community capacity building were somewhat different, reflecting the CBOs (Mano Town-Building Council and Machi-Communication, in particular) different organizational settings and staffing. The Mano community was capable of utilizing existing resources (human, social, physical and financial assets) to further increase their capacity, while the Mikura community was capable of seeking potential resources from outside of the community to increase their capacity. This was mainly because the Mikura community after the disaster was a young community with fewer resources and it was imperative for them to seek assets such as volunteers and visitors from outside through networking with outside organizations and individuals.

8.5. Conclusion

I have examined the two case studies to understand how community vulnerability and capacity interact with each other before and after the Kobe earthquake. First I used indicators of community vulnerability and capacity, and community development and community recovery (Tables 5.1, 5.2, 5.3, and 5.4) to identify the conditions of both the Mano and Mikura communities in the pre- and post-disaster periods. Although the Mano community vulnerability remained relatively high 10 years after the earthquake, its capacity to deal with

vulnerability has increased over the years. In particular, Mano's series of recovery efforts after the disaster gave this community more confidence in its *Machizukuri* approach to continue further increasing community capacity. In this sense, Mano's capacity to manage its vulnerability promoted vulnerability reduction through providing a diverse range of activities, programs, and facilities. Such efforts have, in turn, reinforced the Mano community's capacity to further enhance vulnerability reduction. However, such a positive post-disaster recovery was not achieved right away in the Mikura community.

Analysis of the two case studies allows making some useful distinctions and observations regarding how community capacity interacts with vulnerability. The research findings suggest that capacity can influence or buffer the conditions of vulnerability (how vulnerability is experienced, such as fragility or weakness). Capacity also can influence the production of vulnerability (how vulnerability is produced, such as poor community development process, socioeconomic marginalization). However, the two case studies suggest that the characteristics of vulnerability (what vulnerability represents, such as age, gender, income, and ethnicity) are not eliminated entirely.

Also, the cases suggest that it is possible to drastically change these characteristic of vulnerability given sufficient resources and appropriate conditions. The Mikura community was newly rebuilt after the quake through the land readjustment project which changed the characteristics of physical vulnerability (e.g. fragile, old, wooden buildings, high building density, narrow streets, and few open spaces) of the pre-disaster period. However, new characteristics of vulnerability surfaced and they created different conditions of vulnerability with respect to future disasters. In the case of Mikura, physical vulnerability was significantly reduced and this increased the structural safety of the community. The trade-

offs of this achievement could result in increases in social vulnerability (e.g. reduced social networks, loss of active face-to face communication and information exchange, and decrease in the sense of intimacy and neighbourhood integration). However, MC made efforts to improve the capacity of the community that could reduce community vulnerability (e.g. providing various services for the elderly, and offering opportunities to the local residents to participate in the community events and activities) so that the community could maintain good communication flow, social integration and networks. MC quickly recognized that increasing the safety (mostly physical and structural safety) of the community was not the ultimate solution to improve overall and more nuanced community vulnerability. The Mikura community had to explore possibilities and opportunities for building community capacity by seeking outside resources to improve the quality of life in the community.

By comparison with Mano, the Mikura community was unable to respond quickly to the emergency situation soon after the quake due to a lack of active CBOs, leadership, and experience in working together collectively. The community lost almost everything; homes and people. The population never recovered even 10 years after the earthquake. Nonetheless, under such poor conditions the community was able to seek outside resources and physically re-create itself almost from scratch with the help of a CBO (MC). The Mikura community was not well-integrated before the disaster, but a series of collective efforts and self-help approaches—on the part of Machi-Communication, volunteers, the residents, and local government—contributed greatly to the recovery from the Kobe earthquake and supported long-term community development to deal with future disasters.

To understand the differences and similarities between the two communities, I have reviewed the context of urban planning in Japan with a particular focus on community

development and the relationship of small-scale communities with government. Japanese community planning (*Machizukuri*) is a relatively recent phenomenon and not every community has been able to actively engage in this type of planning practice. Due to the anti-pollution movement in the 1960s, the Mano community had to organize to deal with its pressing problems and that was how Mano community began to be fully involved in local community planning and development practices—*Machizukuri*. Japan's planning system has largely been government led (Sorensen 2002) and without a good relationship with the government, communities suffer from limited access to financial and other resources necessary for development planning.

Although it is government planning policy to allocate existing resources fairly and evenly, it is also the communities' responsibility to attempt to gain better access to resources. The Mano CBOs, largely the Mano Town-Building Council, played important roles as social justice or protest organizations, as Rubin and Rubin (2001) classified them, in order to increase basic living conditions in areas such as the welfare and health of the local residents and the environment. The CBOs were in a confrontational relationship with the local government at first, but they gradually achieved a collaborative relationship with the local government as their community concerns shifted from resolving "conflicts" to increasing the autonomy ("self-help") of the community in order to increase the community's quality of life (Christenson 1989).

These continuous community activities were the key factors that enabled Mano to build capacity. Mano has well-organized CBOs, including NHAs, such as children's clubs, senior's clubs, women's clubs, youth clubs, sports clubs, flower arrangement clubs, Haiku (Japanese poets) clubs, and so on, which provide opportunities for the residents to socialize

with others, increase networks and supporting relationships, and gain a sense of belonging. These are all neighbourhood functions identified by Warren and Warren (1977) as being important to the achievement of community integration and solidarity. Their bottom-up, equity-oriented community organizing approach has been an important factor in reinforcing the high levels of participation from the residents. The CBOs are well tied into the community activities of Mano, which was one of the key reasons for the highly integrated nature of the community.

Drawing on community development literature, the research findings suggest that the Mano community has the strong presence and performance of CBOs that had many of the essential qualities and elements of communities. Such qualities, according to the literature, could offer many possibilities for social change and a promise for democracy (Warren and Warren 1977; Garkovich 1989; Rubin and Rubin 2001). However, it may not be the case in Japanese context. After the Kobe earthquake, the Mano CBOs did not seem actively involved as change agents in pursuing further solutions to the community's existing, overlooked or newly emerging problems, such as the on-going physical vulnerability of the community, the aging population, the negative population growth, and the lack of planning for managing or integrating the growing foreign population.

On the other hand, the Mikura community had some types of CBOs in the pre-disaster period, but they retained the rather traditional NHA style of decision making process. Perhaps as a result, just before the earthquake, they were not active. They conducted only ritual activities, such as New Years celebrations, a summer festival, and sports day activities. People participated with, at best, a sense of obligation, and such a poor level of participation was wholly inadequate in affecting social change (Arnstein 1969). Furthermore, lack of

leadership and CBOs, and low involvement from the local government at the time of the earthquake were major factors that resulted in the Mikura community needing assistance from outside in order to achieve recovery. Machi-Communication played a number of roles in supporting the recovery process of Mikura, such as providing technical assistance, particularly land-use zoning rules and legal issues, mediating between property owners and tenants, negotiating with local government, and advocating the Mikura community to gain autonomy to influence plans for land use adjustment projects. Applying Christenson's (1989) classification, it can be said that MC took the multiple roles of facilitator, consultant, and advocate for achieving the recovery of Mikura, however, MC also believed in self-help approaches so that the residents could re-gain their independence and confidence. Their self-help approach resulted in completion of the Mikura Five cooperative housing and Mikura community center construction projects. MC certainly enabled the mobilization of not only the local residents but also volunteers and professionals from outside to implement these projects, though it was a time consuming process. Although MC's contributions to the community were significant, MC was not able to establish a good relationship with local government, which might have been one of the obstacles that prevented the community from further improving the community vulnerability and capacity of Mikura.

Both the Mano and Mikura communities achieved long-term disaster reconstruction to some degree. However, a number of challenges remain unsolved in both communities which result in remaining vulnerabilities. Since the 1995 earthquake, the Mano community became even more famous for its successful long-standing community development which led to successful recovery. The Mikura community and MC also became famous for the unique presence of MC, for its successful disaster recovery, and for its long-term community

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planning efforts—*Machizukuri*. While acknowledging the fact of the two communities'

community planning efforts and achievements, it is hard to understand why the two

communities could not attract more people from outside as potential residents.

CHAPTER 9 Conclusions—Contributions, Implications, and Future Research

9.1. Introduction

In this chapter, I summarize my findings, and then the contributions and limitations of my research, as well as implications for future research. The opening section provides a summary of findings of the research. I first provide the specific findings with regard to the two cases. Then I discuss the application of the adaptation of Blaikie et al.'s vulnerability model (1994 and 2004).

9.1.1. Summary of Research Findings

This research focused on two small scale cases to understand how local level communities in Kobe recovered from the earthquake. From the research findings, I argue that good community development practices as well as an effort to build community capacity contribute to reducing the overall community vulnerability, while achieving effective disaster recovery. Even if a community experiences high physical and social vulnerability in the pre-disaster period, if the community is able to foster certain conditions, such as active CBOs, devoted leadership, good community development, and a collaborative working relationship with governments, the community will most likely achieve recovery to a certain level. However, although high community capacity may buffer the harsh "conditions of vulnerability" (e.g. a frail elderly person living alone without sufficient public services) and good community development may minimize "factors that produce vulnerability" (e.g. a lack of access to good affordable housing), the "characteristics of vulnerability" (e.g. the presence of elderly, young, women, ethnic minorities, low income households, foreigners, poorly

maintained dwellings, and fragile infrastructure) themselves can still be very hard to eliminate. Even if they are changed, new characteristics of vulnerability may surface and create "different vulnerable conditions" for the community (e.g. the population is increased by new comers from outside after a disaster, which may decrease social solidarity, and new wider streets often divide a community into different and discrete entities, which decreases information flow in the neighbourhood and interferes with existing networking on which the vulnerable groups often depend).

Community recovery was considered as efforts to resolve pre-existing problems such as existing vulnerability as well as to improve safety and to bring about the betterment of the community to increase the quality of community lives. As long as communities remain vulnerable, they will suffer much the same fate when the next disaster hits them. Thus, to increase safety and the quality of life in the community, it is critical to enhance community capacity building and to improve community development practices in order to avoid repeating the same tragedies in the future. However, there seem to be some trade-offs that need to be considered in accomplishing overall vulnerability reduction, while improving safety and quality of life in the community. More detailed findings from each case study are summarized below and illustrate these considerations.

The first case, the Mano community, a community well known for its long-standing *Machizukuri* (community planning) efforts had relatively faster and effective recovery from the Kobe earthquake. The significant qualities of the Mano community were its ability to take actions as a community, collectively, as well as its ability to maintain independence, and these qualities brought Mano to a successful recovery. Mano's extended community development practices since its anti-pollution protest movement in the 1970s; excellent

leadership that facilitated Mano in its bottom-up democratic decision-making approaches; a number of active CBOs; a long-term good working relationship with the Kobe government which allowed Mano to develop the Mano 20-year community plan; the presence of a strong community planner who provides technical assistance, Mr. Miyanishi with his devotion to the community and his planning and architecture expertise for Mano *Machizukuri*. Even though Mano's physical and social vulnerability to disasters were relatively high, the community was able to reduce the conditions of vulnerability experienced by the community with efforts to build community capacity that can buffer and minimize existing vulnerability.

On the other hand, the Mikura community was not able to respond to the emergency quickly due to the immensity of damages and losses and a lack of community solidarity, leadership, CBOs, and good relationship with the local government. The community had to seek outside resources in order to achieve recovery. Although its infrastructure and structural safety was improved significantly due to the disaster land readjustment project, overall social vulnerability (aging of the population, and slow population recovery) remained unsolved. Machi-Communication (MC), a CBO consisting of volunteer members from outside of Mikura that was established soon after the quake, played a critical role in the Mikura community's recovery processes. MC and a group of remaining residents in the community gradually established a trusting relationship to work collectively and focus on disaster recovery. Since the fragile physical conditions of Mikura disappeared due to the quake and fires, and the community was designated as one of the disaster land restoration project areas, Mikura infrastructure and buildings were rebuild as new and upgraded. However, accompanying this were different characteristics of vulnerability that were identified and experienced by the local residents, such as un-used empty lands were abandoned and became

unsafe places in the community, and high-rise apartments hindered the elderly residents from being active and connected with others. These new conditions of vulnerability were recognized by MC and they tried to reduce them, but there was no simple solution to the vulnerability that the Mikura residents experienced. Yet the efforts to deal with new vulnerability conditions allowed MC to gain credibility and contribute to enhancing overall community capacity. Mikura community development practices emerged gradually after the quake. The Mikura case study suggests that outside resources, including a CBO with volunteers from outside of the community can make important contributions to disaster recovery and on-going long-term community development efforts.

9.1.2. Application of Blaikie et al.'s Model

Blaikie et al.'s model—the Pressure and Release Model (1994 and 2004)—was adopted and elaborated for this research framework—Community Vulnerability and Capacity Model (Figure 5.2)—so as to incorporate the concepts of community capacity and community development within the disaster recovery context. I also developed four tables (Tables 5.1 to 5.4)—Factors and Potential Indicators of Vulnerability, Capacity, Community Development, and Community Recovery—that help organize my research data. One of the major elaborations on Blaikie et al.'s model made my model was to define vulnerability as the accumulation of activities. I chose the factors of State/ Political Levels, Local/ Community Levels, and Physical/ Technical Levels of Vulnerability (Figure 5.2) in order to separate community vulnerability from the complex intertwined conditions represented among "Root Causes" and "Dynamic Pressures" and "Unsafe Conditions" in Blaikie et al.'s Pressure and Release Model. By highlighting community vulnerability as well as physical

vulnerability from their conceptualization, community vulnerability was identified with two dimensions—social and physical characteristics of vulnerability. This approach has turned out to be appropriate and useful in practice. Although theoretically speaking, social and physical vulnerability were intertwined with each other, the model employed in this study showed how important it is to separate the two dimensions of vulnerability. My research findings suggest that social vulnerability was reduced through processes of increasing social solidarity, community independence, neighbourhood networks, etc, while physical vulnerability was managed through land use planning, structural improvement, application of technology, etc. My research framework provides a practical approach for communities to apply in reducing their vulnerability.

While exploring the two case communities' recovery processes, there were a number of factors identified as being critical components for achieving recovery. In my framework, these factors and indicators were basically treated equally, but after the analysis of the cases, some interesting observations were made to re-examine these lists of factors and indicators. I have mentioned population recovery a number of times in this study. Population loss right after a disaster event may be unavoidable but it is critical to bring displaced people back to their original neighbourhood once these neighbourhoods are safe to return to. Therefore, population recovery is one of the essential parts of disaster recovery. Moreover, although physical vulnerability can vary depending on the type of hazards and time of the occurrence, it is generally essential that local populations live in structurally safe homes, as this largely determines their chances of survival. Physically vulnerable homes, such as fragile, old, wooden dwellings collapse due to the large magnitude of the earthquake, and the people who

live in them die from suffocation or are crushed by the objects in or the materials of their houses.

Some problems I had while applying my model were difficulties incorporating the idea of timeliness of the different activities and planning during the recovery phase. It seems that differentiating between the short- and long-term recovery processes might help determine the time sequence or amount of time spent. Although fast, short-term recovery efforts were critical to carrying through the whole recovery processes, it was difficult to draw even a rough line to determine when the short-term recovery phase ends and when the long-term recovery starts. Another difficulty I faced was that the complexity of capturing the interactions between community vulnerability, capacity, community development, and recovery with my model. I used a simple scaling system to describe the anticipated results discussed in Chapter 5, such as high or low, more or less, and increased or decreased in order to examine the relationship between the key concepts. Such a measuring method was useful to assess or estimate overall status, however, for a more detailed and nuanced analysis, it became very hard to capture the series of activities and interactions with this simple scaling, which raises the question of whether vulnerability can be fully measurable or whether it is possible to depict all the dimensions of vulnerability.

9.2. Contributions of Study

9.2.1. Vulnerability Studies

My thesis' contributions to the field of vulnerability studies are three-fold. First, incorporating the concept of community capacity with vulnerability analysis; second, introducing community development to the field of vulnerability; and third, conducting vulnerability analysis in the context of Japan.

Incorporating Capacity

One of the contributions to vulnerability studies is the incorporation of the concept of "capacity" into Blaikie et al.'s model. The importance of recognizing capacity that deals with vulnerability has been pointed out by many vulnerability scholars (Anderson and Woodrow 1989; Blaikie et al. 1994; Moser 1996). It is practical and beneficial to apply the "capacity" idea to a vulnerability model so that the model not only describes the conditions of vulnerability, but also suggests potential factors that can minimize or reduce community vulnerability. Without including community capacity in the model, Blaikie et al.'s model can be used only for learning how vulnerable communities are and how disastrous it could be if those vulnerable populations are affected by a potential hazard. However, this assessment may not be accurate at an operational level since the model does not include existing skills and knowledge of individuals, resources and assets in the community and networks and collaboration of other community groups—community capacity that can influence community vulnerability. To fully understand the conditions of a community at the time of emergency it is necessary to make a risk and vulnerability assessment that also entails the idea of how capable those vulnerable communities are. If decision-makers and communities

want to know the actual potential impacts of disasters, it is necessary that they include factors of community capacity to reach a more accurate assessment of risks and vulnerability (Davis 2004). I believe that the Community Vulnerability and Capacity Model can be applicable to any community to examine its vulnerable conditions as well as existing community capacity. Through the use of my model, those communities can strategically make plans for disaster management and recovery as well as for their everyday community development practices that recognize vulnerability as well enhance community capacity.

Introducing Community development

This research focused on community recovery from the Kobe earthquake taking a collective community approach to improve existing recovery planning and overall disaster management practices. Vulnerability analysis most often deals with individuals or household vulnerability (e.g. age, gender, race, income, education, family type, marital status, etc.) rather than on a community's characteristics and conditions (e.g. engagement of CBOs, residents participation, leadership, government involvement, community planning and implementation) to determine community vulnerability. While vulnerability studies argue that vulnerability is often generated through various levels of community development activities (Hewitt 1983; Sen 1984; Varley 1994; Wisner et al. 2004), it is also vital to understand community development practices that may have contributed to reducing community vulnerability. Although many of the factors listed in Blaikie et al.'s model are related to community development activities as factors producing vulnerability to some degree, community development activities are at the same time, critical factors in reducing and managing vulnerability. By introducing community development as an important factor

in community vulnerability reduction, both vulnerability analysis and the field of community development can benefit greatly allowing them to better enhance the quality of community lives.

Vulnerability Analysis in the Context of Japan

Identifying the vulnerability of the two communities in Kobe city revealed the inner-city issues that face many cities in Japan. According to many Japanese scholars (Miyamoto 1996a and 1996b; Murosaki 1996; Ishida 1999; Takayose 1999a; Konno 2001; Hirohara 2002), the severe damage of the Kobe disaster, particularly in Nagata ward was due to the fact that this area experienced the rise and fall of the inner-city which was characteristics of many Japanese cities. As mentioned in the two case studies, these areas were rapidly developed during Japan's post-W.W.II re-construction period. The economic development oriented approach of the reconstruction did not offer much opportunity for the social development of the communities, and infrastructure was built sufficient to maintain business activities, but was not built adequately for the purpose of the local residents. Social planning was not well developed to offer public services that could assist in building community capacity. Because of these mal-development practices in the past, these communities suffered from poor living conditions and a lack of social integration, and as a consequence remained extremely vulnerable. There are still a lot of communities elsewhere in Japan that are experiencing Japan's inner-city rise and fall just like the Mano and Mikura communities have. To assist those communities to prepare for future disasters, the research findings of this study can contribute to increasing further understanding of their vulnerability and capacity.

9.2.2. Community Development Studies

My findings from Mano community recovery suggest that long-term community development activities can make a difference to the outcome of disaster recovery. Although the immediate disaster relief efforts were not planned in advance, Mano was able to manage the emergency situation and begin activities relating to non-emergency situations. The Mikura community was not actively involved in community development practices before the earthquake; however through recovery activities with short and long term efforts carried out by Machi-Communication, the community was able to establish a foundation for community development. There is a relationship between community development and disaster recovery, such that good community development practices in the pre-disaster period are associated with a successful community recovery outcome, and long-term recovery efforts are associated with activities establishing community development practices. My research supports the idea of integrating existing community development with disaster planning and recovery planning in order to minimize the risk of future disasters.

Understanding of the critical role of leadership by individuals in my cases is another contribution to the field of community development. In both case studies, key individuals played important leadership roles that made a difference in the outcome of overall community development as well as disaster recovery. Moreover, individuals from outside of the Mikura community have been major participants in the CBO, Machi Communication, which is the leading agency in the community's development. In other words, outside individuals and agencies can make critical contributions to assisting communities during disaster reconstruction and long-term community development practices. Such findings suggest the importance of reinforcing effective leadership by developing programs for the

residents to increase their skills and knowledge of community development and creating opportunities for individuals and agencies to be involved in community development activities for local communities.

9.2.3. Japanese Community Planning and Disaster Planning

Only recently did *Machizukuri* (the Japanese version of community planning) become a popular approach for community development for many local governments in Japan. While witnessing communities struggles with the recovery from the Kobe earthquake, the importance of disaster preparedness and community planning for reducing existing community risks and vulnerability were recognized as vital. Thus, after the Kobe earthquake, the idea of *Machizukuri* was combined with disaster planning to become "*Bosai Machizukuri*" (Disaster resistant community planning) to encourage local communities to be involved in community planning to create and improve community disaster plans. It has been said that the next big earthquakes may hit other major urban centers of Japan, such as Tokyo and Nagoya (Cabinet Office 2003). This study can contribute to providing local communities with the tools and knowledge they need for analyzing their existing vulnerability and capacity.

Although the recent rapid development of the Internet and various database systems around the world facilitates obtaining much information relating to Japan, there are still some limitations in international understanding of the Kobe earthquake recovery due to the fact that much of the information written about it is in Japanese. My study contributes to introducing works in Japanese to Western disaster studies. My study can also make unique contributions to existing Japanese disaster studies, as my theoretical approach is influenced

by Blaikie et al. which I have not seen other Japanese disaster scholars apply to examining the vulnerability issues of the Kobe earthquake.

9.2.4. Disaster Recovery

My study contributes by adding detailed case studies of community recovery to the field of disaster studies. There are few studies of community recovery conducted in such detail in either English or Japanese languages. Moreover, the roles and limitations of CBOs in disaster recovery situations have not been well understood in the past, and my research can contribute to the development of this understanding. In the context of Japan, influence from governments is a critical part of community recovery. The research addresses some issues pertaining to the roles of local governments and their relationship with the local communities. In particular, it addresses sharing power for decision-making and implementation, for allowing independence, and for establishing collaborative relationships with local communities.

9.3. Implications for Theories and Policies

9.3.1. Implications for Planning Theories

The importance of integrating disaster planning into the current planning practices has been addressed by many scholars (Lindsay 1993; Britton and Lindsay 1995; Quarantelli 1997; Burby 1998; Mileti 1999). My two case studies also suggest that community development efforts contribute to recovery from the disaster confirming the idea that disaster planning needs to be a part of a community's everyday planning practice. Furthermore, the thesis argues that disaster recovery planning that is tailored to specific community conditions

and needs in advance is critical in order for communities to be able to achieve recovery following disasters (Haas 1977; Rubin et al. 1985; Murosaki 2004). Although local governments and communities have improved their disaster management practices in Japan, a central government study (2003) suggests that over ten years after the Kobe earthquake, more than 50% of local governments in Japan still had not created or revised their disaster management policies to incorporate the lessons learned from the disaster (Cabinet Office 2003). It seems that more clarity in disaster theories and practical tools in disaster planning applicable for the government and community agencies to improve their existing approach to disasters is needed to help close the gap between knowledge and practice.

9.3.2. Implications for Policies

Since the Kobe earthquake, Japanese policies for disasters have changed to have more focus on a community-based approach. My study shows the critical roles of CBOs and yet they have not been well integrated into disaster management-related activities. There needs to be policy development providing for CBOs to take an active part in disaster management in order to provide fast and adequate assistance for the disaster survivors. Also, the long-term sustainability of CBOs depends on volunteers, but volunteerism in Japan has only recently begun organized and developed systematically (NPO Law 1998) to serve citizens' interests and public needs. More policies are needed to support volunteers so that they can actively participate in the development of Japan's civil society.

Another management or planning policy implication is that a careful examination of vulnerability reduction efforts is critical to avoid further production of vulnerability. For instance, some disaster recovery approaches—such as mass re-development, creation of

mega projects, demolition of fragile structures, relocation of marginalized ethnic groups or low-income households, and discouragement of vulnerable groups from returning to their previous community—may reduce existing vulnerability. However, while these practices may seem effective in the short-term, they may not be fully successful in reducing vulnerability in the long-term and they might indeed increase vulnerability. This will become a concern for communities if their vulnerability is increased instead of decreased afterwards as a result of ill-considered practice. There needs to be a way to restrain and redefine any recovery activities that may cause the communities to generate more vulnerability.

Moreover, while land use policies and building standards designed to ensure safer and more disaster resistant communities did indeed contribute to reducing potential risks, such efforts sometimes created different conditions of vulnerability. Wide streets were made to minimize fire damage and to allow emergency vehicles to get into the community. However, many residents in the Mikura community objected that as a result, they did not see their neighbours as much as they used to in the pre-disaster period of high density neighbourhoods and that this prevented them from having frequent communication with their neighbours. Many vulnerable populations depend on daily communications with their neighbours (Leighton et al. 1963; Bolin and Stanford 1998; Klinenberg 2002) in order to gain access to information and mobilize resources that are critical for them to reduce their vulnerable conditions. Another example that I heard often from various sources (interviewees and newspapers) was that because the government gave priority to the vulnerable groups (the elderly and disabled and low-income households) to move from emergency shelters into permanent residences, some of the permanent housing complexes were filled with those vulnerable people. In other words, those housing complexes turned out to have a higher

concentration of the vulnerable groups than the rest of the areas. At a community level, this high concentration of vulnerable groups resulted in low participation in community activities, poor community planning, and inactive CBOs (Kobe Newspaper 01/17/2005). While many vulnerable people benefited at the time of crisis as shown by the examples here, community efforts to reduce vulnerability are not always straightforward.

9.4. Recommendations for Future Research—Limitations and Possibilities

The examination of community recovery from the Kobe earthquake suggests that both Mano and Mikura communities were able to achieve some levels of vulnerability reduction as well as capacity building. However, the long-term sustainability of this in the two case communities still remains uncertain. Issues and challenges, such as overall economic decline, slow population recovery and aging of the population remain unsolved, which continues to make them vulnerable to future disasters. One of the great difficulties of studying disaster recovery is that the results might vary depending on the timing of the research. If the research was conducted within the first five years following the quake (1995 to 2000), or if 20 years were allowed for the study as in this investigation (1995 to 2015), for example, the research findings would be quite different. However, another 10 years of studying these two communities (1995 to 2015) might help confirm the theory that good long-term community development practices would guide an effective disaster recovery, if these communities were not hit by another big earthquake again.

To create a safer and better community, communities need to reduce existing problems as a part of the recovery process. However, at the time of writing, pre-disaster problems, such as poor housing conditions, unhealthy population growth, and so on, remain

unsolved to some extent in both communities. The general impressions of the two communities in Kobe therefore are that even though they both seemed to have achieved much already in the ten years since the 1995 earthquake, their recovery processes may still be incomplete. If another five or ten years were given to investigate these two communities, such study might help in better understanding the further implications of community development and long-term recovery following the disaster.

While CBOs' contributions and diverse activities were discussed in the thesis, vulnerability of or shortcomings of CBOs were only broadly addressed. CBOs' critical roles in community development and disaster recovery were described yet their limitations and negative impacts on communities were not fully introduced in the thesis. Most CBOs in Japan suffer from lack of adequate funding and are tied up with chronic tasks of writing proposals to apply for potential funding. Fortunately, CBOs in both Mano and Mikura were able to continue receiving funding and other resources to manage their offices, however, if these CBOs had to close their offices and were no-longer assisting recovery activities, the argument of this research would have to be revised somehow because CBOs might not be the key agents contributing to reconstruction efforts. A study of a situation where a CBO that had to discontinue their services during the recovery phase might help develop a new analysis of CBOs contributions.

Moreover, CBOs in Japan depend largely on volunteers. Japan's most commonly widespread CBOs, neighbourhood associations (NHAs), are organized on the basis of voluntary participations of the local residents. Although the participation is voluntary, membership in ones NHA is very much expected, and in this sense, it is almost compulsory. Each household takes turns being the chair, secretary, or finance officer of their NHA—this

requires much more commitment from the households in question. This type of volunteerism—obligatory participation rather than public action initiated by citizens for their own purposes—has been the common practice in Japan. Volunteerism is, therefore a culturally variable phenomenon. Roles of CBOs discussed here are in many ways, particular to Japan's situations, and thus a study of disaster recovery activities involving CBOs in different cultures would make an interesting comparison with my study.

The two case communities' physical and social vulnerability in the pre-disaster period were relatively comparable due to the fact that they shared similar historical backgrounds as inner-city communities in Nagata ward, Kobe city. Nagata ward experienced the most severe disaster damage and difficulties in the recovery processes. The results of a similar study on different communities, such as Nishinomiya city, Higashinada ward or Hokudan-cho, might be different, as these areas were severely damaged by the quake, but they were able to return to and actually increase above their pre-disaster levels of population (Hyogo Prefecture 2007). Why these affected areas were able to do better than other areas has not been studied in detail, and if results of research on these cases could be compared to the results of the Mano and Mikura research, it could make an important contribution to identifying certain types of communities that may be more resilient to disasters.

Although my focus was on communities, individual vulnerability was discussed to some degree. However, many of the vulnerability issues discussed in my study were associated with individual age, income, or physical disability, and not so much with race, gender and ethnicity. Issues of race, gender and ethnicity were critical factors of vulnerability and Nagata ward (Wisner et al. 2004), where I conducted my research, is the home of many Korean-Japanese, outcasts, and foreigners (Konno 2001). Research into the roles that these

factors play would be useful. Also, in Nagata ward, women's contributions to their household

income were greater as many family members participated in their family's businesses (Kobe

census 2000). The roles of women were important during and after the disaster (Enarson

1998), but there have not been many studies identifying and analyzing the conditions of

women in the Kobe earthquake (Women's Net Kobe 1996). There is clearly room for more

study in this area too.

The Kobe earthquake was one of the largest urban disasters ever in Japan's post-

W.W.II. history. Most of the discussion in the thesis was about the impacts on the urban

areas, and experiences in rural areas of Kobe were not studied. Even though it was primarily

an urban disaster, some rural areas such as Awaji Island were severely affected. A new

research project could make an important contribution to understanding how rural and urban

areas are affected by the same disaster—whether communities in rural areas require similar

community conditions (active CBOs, good leadership, high residents' participation, etc.) to

achieve recovery.

Vulnerability and capacity were chosen as the key concepts for this study to develop

the research framework (the Community Vulnerability and Capacity Model, Figure 5.2). The

concepts were used in a sense as measures to identify the recovery conditions of the two case

communities (high or low, reduced or increased). However, when contrasting the anticipated

results and the actual research findings, the limitations of current definitions of vulnerability

and capacity became clear. Although the research findings suggested that there were

differences between the characteristics, conditions, and producing factors of vulnerability,

there is still a lot of room for improvement of the model developed in this study. The concept

of "capacity" needs further elaboration for specific uses and objectives. The use of "social

capital" to define a more detailed conceptualization of capacity is one of the areas to be investigated. Social capital has become one of the important components for building capacity. Defined as "social ties" and "social network" (Putnam 1995), social capital can provide richness and high solidarity for neighbourhood. Incorporating the concept of social capital into this research would provide a more precise analysis of how community capacity is enhanced or reduced. Also, "resilience" is another recently emerging powerful concept that overlaps in many ways with the concept of capacity used in this research. Resilience is defined as an "ability to absorb adversity, resist or change in order to function, or recover from a stressful event" (UNISDR 2002). The use of this concept to help define community capacity could also benefit the further elaboration of the Community Vulnerability and Capacity Model (Figure 5.2).

The most recent urban disasters, such as Hurricane Katrina, can provide further research opportunities. It would be valuable to study CBOs that were established in the aftermath of the hurricane to examine their contributions in relation to the history of the affected community's development, vulnerability and capacity. Whether such a study would support my findings or not, the application of the Model (Figure 5.2) would be helpful to identify their vulnerability and capacity conditions in order to assist them to achieve successful recovery from the devastating hurricane.

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Appendices

Appendix A: Disaster Restoration Land Readjustment Projects

Table A.1: Disaster Restoration Land Re-zoning Projects
(13 projects and 20 designated areas as of March 1, 2007)

City	Project Name	Designated areas	Completion (mm/yyyy)
Kobe City	Mori Minami	The first district	02/2003
		The second district	02/2003
		The third district	03/2005
	Rokkomichi Station West	West district	07/2001
		North district	03/2006
	Matsumoto		12/2004
	Misuga	Higashi district (Sugawara St. 3 and 4 blocks)	04/2003
		Nishi district (Mikura St. 5 and 6 blocks)	03/2005
	Shinnagata & Takatori	Shinnagata station north district	In progress
		Takatori higashi the first district	02/2001
		Takatori higashi the second district	In progress
	Minatogawa machi Block 1 and 2		09/2002
	Kamimae cho Block 2 north		12/2000
Ashiya City	Ashiya West Side	The first district	05/2003
		The second district	05/2002
	Ashiya Center		In progress
Nishinomiya City	Morigu		10/2001
	Nishinomiya Kitaguchi station north east		In progress
Amagasaki City	Tsukiji		In progress
Awaji City	Tomijima		In progress

(Source: Hyogo Prefecture 2007: 9)

Table A.2: Disaster Restoration Urban Renewal Projects
(6 projects; 15 designated areas as of March 1, 2007)

City	Project Name	Designated areas	Completion (mm/yyyy)
Kobe City	Rokkomichi station south	The first district	04/2000
		The second district	03/2004
		The third district	12/2001
		The fourth district	09/2003
	Shinnagata station south	The fist district	In progress
		The second district	In progress
		The second district B	In progress
		The second district C	In progress
		The third district	In progress
		The third (Ohashi 4) district	In progress
		The third (Ohashi 3) district	In progress
Nishinimiya City	Nishinomiya Kitaguchi station north east		03/2001
Takarazuka City	Takarazuka station the second area (Hanano Michi)		09/2000
	Mefu Jinja station		03/2003
	Nigawa station		10/1999

(Source: Hyogo Prefecture 2007: 9)

Appendix B: Community Development Approach by Miyanishi Yuji

According to Mr. Miyanishi, community planning involves ways of enhancing

community capacity in order to achieve successful problem solving processes (Miyanishi

1986). Below is a summary (translation) of his article on "*Chiiki Ryoku wo takameru*

(community capacity building)" (ibid).

Community capacity consists of three main elements:

1) Community ability to increase resources;
2) Community's ability of governance; and
3) Residents' interests in their community.

These three elements were combined in Mr. Miyanishi's approach to community planning:

1) Community ability to increase their resources;
      a. Conditions of housing and living.
      b. Conditions of residents' networks.

It is critical for communities to accumulate their resources in order to solve
community problems. Community resources can be divided into two groups—
hardware and software. Hardware of community resources means public facilities,
such as streets, parks, and water and electricity services; public buildings, such as
schools, community centers, hospitals, stores and restaurants; and housing facilities,
such as various housing types and stocks. On the other hand, software of the
resources means the presence of community based organizations, such as
neighbourhood associations, women's clubs, or children's clubs that contribute to
renewing, regaining, stimulating, and reviving the community's existing resources.

2) Community's ability of governance.
      a. Levels of residents community activities.
      b. Level of residents' participation.

Community governance means the ability to perceive issues as common problems and
try to solve them as community efforts. To create and improve community ability of
governance, well organized community activities and high participation from the
residents are key. There are many ways for individuals to solve their problems. For
example, if an individual suffers from air pollution, they can directly go to talk to the
factory, take it to near by police or contact a politician to indirectly pressure the
factory and so on. In the case of Mano, the individuals went to their neighbourhood
association and the association took it as a community problem and saw it as their

responsibility to solve it. This is a very good example of how good community governance is exercised. It is also a sign of a high level of social capital since the individuals trust their neighbourhood association as the best source to solve their pressing problems. They may have been individuals' problems, but if communities can perceive individuals' problems as their problems and recognize the urgency to solve them, the members are willing to contribute and participate in problem solving activities. In order to create such awareness within communities, continual community activities by CBOs and efforts to involve people are critical.

3) Residents' interests in their community;
   a. Networking of neighbourhoods and other surrounded areas.
   b. Levels of interests and concerns for their natural and built environment

It is highly important for the residents to be interested in their community. If people are concerned and interested in any community issues, they will be willing to make efforts to solve problems and improve current conditions wherever possible. The more they know their neighbours, the more they can establish neighbourhood relationships. How much they care about their community can make a tremendous difference when it comes to community development. Their interests and concerns in their community are the source of energy to practice better community governance (Miyanishi 1986).

Appendix C: People of Machi-Communication (MC)

Table A.3: List of Key Actors in Machi-Communication

Role in MC	Name	Organization
Advisors	Endo Katsuhiro	Former president of a stock company
	Tanaka Yasuzo	President of wholesale business
President	Miyasada Akira	Graduate student of Kobe University
The steering committee	Inoue Kakuro	Urban planning consultant
	Imada Makoto	President of policy research institute
	Ueda Yushin	Chair of Plaza Five
	Urano Masaaki	Professor of Waseda University
	Ooyane Jun	Professor of Sensyu University
	Tanaka Mitsugu	Public urban development corporation
	Nozaki Ryuichi	President of an architecture company
The supporting committee	Kojima Tsutomu	Professor of Nagoya University
	Takeda Noriaki	President of an architecture company
	Hamada Jinzaburo	Urban planning consultant
	Miyanishi Yuji	*Machizukuri* planner
	Moritan Akio	Professor of Tokyo Economic University
Honorary advisor	Takamori Kazunori	President of a publishing company
Staff (full/part time)	15 to 20 staff members	

(as of June 1, 2002. Source: Monthly Machi-Commi June/Special edition)

Appendix D: Financial Management of Machi-Communication

With no exception, NGOs/CBOs in Japan depend heavily on funding from
government and private funding agencies. However, because funding availability varies from
year to year and depends on the projects, it is hard to predict how much funding an
NGO/CBO can receive in the next year. The president of MC said that the year 2002 was
really exceptional as they received such a large amount of funding. Although MC has close
to 200 members who support them, the size of the support has been relatively small, and it is
difficult for MC to purely depend on membership fees to run the organization. Donations
have been one of the larger parts of their income; however these are getting smaller every
year. Their project income from some activities such as disaster workshops for school
students contributes a fairly large amount to their total income (see Table A.3).

Table A.4: Machi Communication Income

Income (Yen[78])	2000	2001	2002	2003
Donation	¥1,712,370	¥1,110,390	¥487,905	¥638,500
Membership	¥930,000	¥755,000	¥966,000	¥947,000
Funding	¥200,000	¥4,919,208	¥7,689,580	¥9,463,700
Project Income	¥1,774,273	¥1,203,536	¥1,890,432	¥1,295,572
Other	--	¥1,069,266	¥1,858,819	¥2,045,653
Total (Yen)	¥4,618,643	¥9,148,292	¥12,892,736	¥14,390,425

(Monthly Machi Commi 10/2001; 05/2002; 10/2003; 06/2004)

Their budget is always tight just like any other CBOs, and therefore, they have to
depend on volunteers who can devote their time and energy without being paid. Yet, there
are not many people who can live without being paid, and therefore, MC is often
understaffed. To make this worse, they spend a large amount of time writing up funding
applications as well as reporting back to the funding agencies when the funding is over. They

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[78] US$1 = 118.62 Yen (as of 07/30/2007).

are always busy in order to meet the deadlines (interview with Mr. Miyasada: 08/09/2003).

Although people's recent willingness to contribute to civil activities can be viewed as a part

of a civil society movement, organizations playing key roles in such a movement still suffer

from lack of funding. Unlike certain CBOs and NGOs in North America, which often have a

wide range of funding sources particularly from private industries, CBOs and NGOs in Japan

still need more time to actually establish the financial stability required to manage the

organizations (interview with MC-A1: 08/19/2003).

Appendix E: Letters of Ethical Review Approval

The University of British Columbia
Office of Research Services and Administration
**Behavioural Research Ethics Board**

Certificate of Approval

PRINCIPAL INVESTIGATOR	DEPARTMENT	NUMBER
Dorcey, A.H.J.	Comm & Regional Planning	B02-0316

INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT
UBC Campus ,

CO-INVESTIGATORS:
Ohara, Etsuko, Comm & Regional Planning

SPONSORING AGENCIES

TITLE
Community Planning for Disasters: Understanding People's Vulnerability and Recovery From the Great Hanshin-Awaji Earthquake

APPROVAL DATE	TERM (YEARS)	AMENDMENT:	AMENDMENT APPROVED:
03-04-08	1	April 14, 2003, Consent forms, English & Japanese	APR 2 2 2003

CERTIFICATION:

The protocol describing the above-named project has been reviewed by the Committee and the experimental procedures were found to be acceptable on ethical grounds for research involving human subjects.

Approval of the Behavioural Research Ethics Board by one of the following:
Dr. James Frankish, Chair,
Dr. Cay Holbrook, Associate Chair,
Dr. Joe Belanger, Associate Chair

This Certificate of Approval is valid for the above term provided there is no change in the experimental procedures

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The University of British Columbia
Office of Research Services and Administration
Behavioural Research Ethics Board

Certificate of Approval

PRINCIPAL INVESTIGATOR	DEPARTMENT	NUMBER
Dorcey, A.H.J.	Comm & Regional Planning	**B02-0316**

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UBC Campus ,

CO-INVESTIGATORS:
Ohara, Etsuko, Comm & Regional Planning

SPONSORING AGENCIES

TITLE:
Community Planning for Disasters: Understanding People's Vulnerability and Recovery From the Great Hanshin-Awaji Earthquake

APPROVAL DATE	TERM (YEARS)	DOCUMENTS INCLUDED IN THIS APPROVAL:
JUN 1 3 2002	1	

CERTIFICATION:

The protocol describing the above-named project has been reviewed by the Committee and the experimental procedures were found to be acceptable on ethical grounds for research involving human subjects.
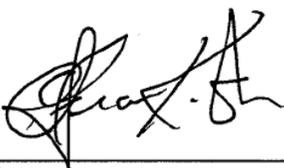
Approval of the Behavioural Research Ethics Board by:
Dr. James Frankish, Chair

This Certificate of Approval is valid for the above term provided there is no change in the experimental procedures