Temporary Housing and Community Organization during a Disaster:
Experiences before and after the Great East Japan Earthquake

Yasunori Saito

A large-scale disaster inevitably gives rise to the problem of housing reconstruction. Disaster victims usually move from shelters to temporary housing to permanent housing. These relocation processes not only displace them from where they lived, but also sever their pre-disaster neighborhood relationships, which sometimes negatively affects their mental health. Disaster studies in the US have tended to focus on pre-disaster social inequalities such as class, race, and ethnicity, which can affect post-disaster housing reconstruction. In Japan, unattended deaths in temporary housing after the Great Hanshin-Awaji Earthquake in 1995 were seen as characteristic not only of existing socioeconomic differences, but also of the future of Japan's aging society. During reconstruction after the Great East Japan Earthquake in 2011, disaster-affected local governments tried to move the same community into the same temporary housing complex in order to avoid harming pre-disaster neighborhood relationships. However, at the same time, the large-scale utilization of rental housing as temporary housing isolated many victims, cutting them off from both relief supplies and information at the beginning. Through a brief review of disaster literature in the US and Japan regarding temporary housing, this paper focuses on the post-disaster social processes of temporary housing in terms of the decision-making of local governments regarding temporary housing management, the networking between volunteer groups and nonprofit organizations for improved support and coordination, and the organization of tenants' associations for autonomous activities. I introduce three cases from Sendai, a city in Miyagi Prefecture, in a latter section of this paper because Sendai was not only an area substantially affected by the tsunami, but also the destination of many victims who evacuated from other areas. Because municipalities of a certain size, such as Sendai, receive an inflow of evacuees in various situations, they will likely face similar problems in the event of large-scale disasters in the future.

1 Disaster reconstruction and housing

It goes without saying that food, clothing, and housing are essential to everyday life

(Hayakawa 1997). However, when a serious natural disaster occurs, people in disaster-affected areas are deprived of these necessaries. Food and clothing are provided for free by local governments or volunteer groups within a few days, and this is an important aspect of the post-disaster gift economy (Nagamatsu 2008). In this phase, altruistic activities such as volunteering and making donations complement the suspension of productive activities by private companies.

On the other hand, repairing and/or rebuilding houses takes a long time, so disaster victims have to stay in evacuation shelters for several days to several weeks, and sometimes even several months. These shelters are used as schools or civic centers in normal times, and thus have limited individual living space. Therefore, due to a lack of privacy, some people choose to leave shelters and stay with their friends or relatives.

Local governments begin to build temporary housing soon after a disaster. Victims are exempted from rent payments so that they may resume their household economic activities. As for recent disasters in Japan, the average duration of stay in temporary housing after the Great Hanshin-Awaji Earthquake was 5 years, and many victims of the Great East Japan Earthquake are still in temporary housing as of this writing, 5 years after the disaster.

In this way, victims move from shelters to temporary housing, and then from temporary housing to permanent housing. Here I present three issues in relation to temporary housing by briefly reviewing some disaster literature from the US.

First, the above-mentioned transitional phases were explained in detail by Quarantelli (1982), who divided the patterns of shelter/housing into the following four categories: emergency shelters; temporary shelters; temporary housing; and permanent housing. Among these, temporary housing includes mobile homes built by the Federal Emergency Management Agency, and rental apartments, for which victims are assisted with federal housing aid. A similar system was also introduced on a large scale in Japan after the Great East Japan Earthquake.

As Quarantelli pointed out, these phases are only ideal types for scientific conceptualization, and are not always followed in a linear, sequential fashion by the victims. However, these conceptual phases function practically as a normative model of

housing reconstruction. Therefore, if victims opt out of this form of "single track housing reconstruction" (Shiozaki 2009), they become latent and cannot be sufficiently supported by local governments or volunteer groups. In relation to this, Tanami (2012) described the living situations of victims who evacuated to outside Hyogo Prefecture after the Great Hanshin-Awaji Earthquake. Widespread evacuation after a large-scale disaster makes victims invisible.

Second, disaster studies in the US tend to focus on social inequalities, particularly "how pre-disaster conditions affect the post-disaster recovery operation in housing" (Quarantelli 1982: 80). As for temporary housing, middle class victims tend to prefer to live in mobile homes on their own property, while lower class victims are forced to live in mobile homes in trailer courts. On the other hand, upper class victims tend to favor living in rental apartments. In the US, housing that is reasonable for lower class victims is rare.

The situation is quite different between the US and Japan, but a similar income gap was seen after the Great East Japan Earthquake between victims in temporary housing and those in rental housing. According to an article in the *Kahoku Shinpō* newspaper dated January 21, 2013, the average income of households in temporary housing in 2011 was 2.2 million yen, while that of households in rental condos or apartments was 2.9 million yen. Therefore, victims who moved into rental housing by themselves from the very beginning were wrongly regarded as "victims who did not need temporary housing" because of their relatively high income.

Third, in the context of the psychosocial recovery of disaster-affected families, Bolin (1982) showed that not only the number of times moving from shelter to shelter or shelter to housing, but also the duration of stay, might adversely affect the mental health of disaster victims. He also pointed out that victims considered staying in trailer courts to be a stressful experience. Gleser (1981) suggested that trailer courts should be arranged in accordance with pre-disaster neighborhood patterns in order to promote emotional well-being and recovery while the government works to allot temporary housing.

After the Great Hanshin-Awaji Earthquake, the rapid deployment of temporary

housing resulted in the unattended deaths of victims. Therefore, the Japanese national and local governments attempted to move the same neighborhood association into the same temporary housing complex (referred to in this paper as the community-based entry system), and sent medical and psychological professionals into these complexes to examine the victims' physical and mental health. Various volunteer groups and nonprofit organizations (NPOs) also visited the victims to help them develop relationships with each other.

2 Temporary housing in past disasters in Japan

History and system

The history of temporary housing in Japan can be traced back to the Great Kanto Earthquake of 1923 (Maki 2012), which caused large-scale fires, especially in Tokyo Prefecture, and led to the loss of more than 300,000 homes and the deaths of 100,000 people. After the disaster, Dōjunkai, a foundation incorporated to supply housing as an affiliated organization of the Home Department, began to construct wooden barracks for the victims. A total of about 2,000 barracks were built by Dōjunkai. These temporary housing complexes were also equipped with welfare facilities such as a day care centers, public baths, and clinics, which seemed to be influenced by social work theory and practice that had flooded into Japan from Western countries at that time.

Temporary housing of this kind was also built during post-war reconstruction and in subsequent disasters such as the Great Niigata Fire of 1955 and the Ise Bay Typhoon of 1959. The Great Niigata Fire was the first case of adopting prefabricated temporary housing, and the "prefab" subsequently went mainstream.

The Mt. Unzen eruption in 1991 and the Great Hanshin-Awaji Earthquake in 1995 marked the turning point in terms of supplying temporary housing. After the Mt. Unzen eruption, temporary housing units were provided by the government to all neighborhood residents who were ordered to evacuate. Similarly, after the Great Hanshin-Awaji Earthquake, all who lost their homes and wished to live in temporary housing were able to do so, regardless of whether they were homeowners or renters before the disaster.

Institutionally speaking, the supply of temporary housing is based on the Disaster Relief Act enacted in 1947. The Ministry of Health, Labor and Welfare (MHLW) establishes temporary housing standards, and arrangements are handled on a prefectural level. In many cases, this prefectural authority is transferred to a municipality. Temporary housing standards are as follows:

(1) Temporary housing is provided to those whose home is completely destroyed and who cannot pay for a new home by themselves.

(2) Temporary housing units have a total area of about 30 m^2, and construction costs must not exceed 2,400,000 yen per unit.

(3) Construction of temporary housing must start within 20 days after a disaster.

(4) Victims can live in temporary housing for a maximum of 2 years.

In relation to past disasters, these standards are flexible, as is their enforcement. In addition, the following points are specifically considered. As for (1), city officials cannot sufficiently check victims' financial conditions and assess damage to their homes in the confused environment after a disaster. Therefore, since the Mt. Unzen eruption, all victims who wish to move into temporary housing are able to do so.

Regarding (2), temporary housing costs are higher in northern regions, where countermeasures against cold temperatures are needed. Indeed, after the Great East Japan Earthquake, the average cost of a temporary housing unit in Miyagi Prefecture was about 7,300,000 yen, which was about three times as much as the limit stipulated in the MHLW standards.

Regarding (4), 2 years is considered an insufficient amount of time to finish construction of public housing complexes or for victims to rebuild their own homes. After the Great Hanshin-Awaji Earthquake, temporary housing deadlines were extended three times due to delays in relocation to permanent housing. Similarly, after the Great East Japan Earthquake, deadlines were extended several times due to delays in land readjustment or decontamination.

Unattended death and the community

The Great Hanshin-Awaji Earthquake, a shallow 7.3-magnitude earthquake that had an epicenter in a major urban area, struck the southern part of Hyogo Prefecture in the early morning of January 17, 1995. This earthquake completely destroyed 100,000 homes and led to the deaths of 6,400 people due to fires and collapsing buildings. This earthquake was subsequently called an "inner-city disaster" because more than half of the dead were low-income elderly living in decrepit wooden houses. The cutting off of water, electricity, gas, and traffic also made daily life inconvenient for several months. Kobe, a famous industrial port city, the sixth-largest city in Japan, was severely damaged in this earthquake.

Immediately after the disaster, there were 300,000 evacuees and a maximum of 1,000 evacuation shelters. Local governments quickly began to construct temporary housing so that these shelters could be gradually closed. Although 48,000 temporary housing units were built in Hyogo Prefecture (30,000 in Kobe), the needs of victims were left unmet for several reasons.

First, many of the temporary housing complexes were located in the open spaces of suburbs distant from where victims used to live. In Kobe in particular, only 18 percent of the temporary housing units were built in developed areas. Second, the aged and the handicapped were preferentially selected, and other tenants were chosen impartially. As a result, temporary housing complexes tended to have primarily elderly populations with low levels of social interaction, leading to a large number of unattended deaths (*kodokushi*).

A doctor who opened a clinic in a temporary housing complex in Kobe defined *kodokushi* as the death of an elderly individual who was living alone in temporary housing with no one to attend to them (Nukada 1999). However, this type of death was not limited to the elderly. According to Nukada, middle-aged men living alone were also at an increased risk of unattended death, especially when they were estranged, unemployed, or had a chronic illness.

After the Great Hanshin-Awaji Earthquake, 233 unattended deaths occurred in temporary housing over a 5-year period, and these types of deaths have continued in

disaster public housing.[1] This demonstrates that people who are socially vulnerable before a disaster become even more vulnerable after a disaster.

To resolve these problems, local governments decided to add a meeting place to temporary housing complexes, where neighborhood associations and volunteer groups could hold exchange meetings and allow tenants to develop personal relationships with each other. In the context of welfare administration, care workers in elderly welfare facilities were appointed as life support advisors to consult with and provide assistance to people in need of aid in temporary housing.

Community organization in temporary housing under these disaster-related situations has been examined by Japanese sociologists. Shibata (1997) investigated the formation of tenants' associations in temporary housing (*kasetsu jichikai*) and their demands for improved living environments to local governments. Based on questionnaire surveys conducted on tenants, Noda (1997) showed that intimate relationships were quickly made through activities in meeting places, and that the lively activities of tenants' associations contributed to the formation of relationships with neighborhood associations. Yamashita and Suga (2002) identified three types of community organizations taking initiatives in temporary housing: volunteer groups, neighborhood associations, and tenants themselves.

Numerous studies have focused on early-stage relationships in temporary housing, while others have focused on the organization and development of volunteer groups. Mitsui (2004) researched a volunteer group providing care for victims in temporary housing 24 hours a day in order to prevent unattended deaths. Nishiyama (2005) illustrated how handiwork by victims and volunteer groups developed into community businesses and social enterprises by NPOs. However, few studies have focused on the transformation of relationships among tenants in temporary housing and between tenants and volunteer groups.

Making disaster-affected communities sustainable

The Chuetsu Earthquake struck the central mountainous region of Niigata Prefecture in the evening of October 23, 2004. This 6.8-magnitude earthquake completely destroyed

3,000 houses and killed 68 residents. Many roads were cut off by landslides, and 60 mountain villages became isolated, Yamakoshi Village in particular. The cutting off of lifelines and intermittent aftershocks caused up to 100,000 people to evacuate to shelters. These shelters included not only public, but also private spaces such as sheds, garages, and even cars. Evacuees living in cars led to the condition known as "economy class syndrome" (i.e. deep vein thrombosis).

Immediately after the disaster, local governments began constructing 3,500 temporary housing units, which were subsequently in habited by 10,000 victims. Considering the unattended deaths that occurred after the Great Hanshin-Awaji Earthquake, local governments, focusing on pre-disaster relationships, acquired temporary housing sites near where victims used to live, and attempted to move the same disaster-affected community into the same temporary housing complex. This strategy was enabled by the relatively small scale of the disaster, and the fact that it occurred in a mountainous region. Residents voluntarily offered sites for temporary housing by reconfiguring their land rights. Many of the temporary housing-related problems experienced in 1995 were improved in the aftermath of this earthquake.

The reconstruction process from this earthquake has been described in detail, with a focus on the operation of shelters by neighborhood associations, the revitalization of lives in mountain villages, and the dislocation from disaster-affected villages (Matsui 2008). However, unfortunately, neither Matsui nor other sociologists mentioned community organization processes in relation to temporary housing. Therefore, medium- to long-term changes in the relationships among tenants could have been overlooked.

Researchers in the field of urban management were the first to consider the meaning of the community-based entry system from the standpoint of personal relationships, rootedness in the land, and the continuance of agriculture and forestry (Furuya et al. 2010). Researchers in this field also pointed out the closed nature, exclusiveness, and mutual surveillance prevalent in community-based temporary housing (Hasegawa et al. 2007).

Their findings are as follows. Even though complexes were located next to one

another, the tenants in each complex did not interact with those in others. All social interactions were conducted within one complex. Meeting places were used exclusively by a few groups of tenants, so it was difficult for others to form new groups. Tenants who came from other areas tended to be isolated. Furthermore, deriving from their strong ties, tenants worried to much about how they would be seen in the eyes of their neighbors.

3 Housing after the Great East Japan Earthquake

*Complex disaster and widespread evacuation*

The largest catastrophe to ever hit Japan occurred on the afternoon of March 11, 2011. A 9.0-magnitude earthquake struck just off the Sanriku Coast, causing a tsunami more than 10 meters high that subsequently struck the Pacific coast of Japan. The damage from the tsunami was severe, especially in Iwate, Miyagi, and Fukushima Prefectures in the Tohoku region. The tsunami not only killed residents along the coast, but also caused a severe nuclear accident. A large-scale radiation leak occurred the day after the tsunami at the Fukushima Daiichi nuclear power plant operated by the Tokyo Electric Power Company. People living in the surrounding area were forced to evacuate, and most of the area was declared off limits. This is why the Great East Japan Earthquake is called a "complex disaster."

In this disaster, 400,000 houses were completely or partially destroyed, and more than 18,000 people were killed or missing. The cutting off of lifelines in many parts of Eastern Japan resulted in up to 400,000 evacuees. As of this writing, according to the Reconstruction Agency, more than 180,000 people are still living as refugees, and they will continue living in temporary housing for the foreseeable future because land readjustment and decontamination projects are still in progress.

One of the main characteristics of this disaster was the evacuation of victims to widespread municipalities and prefectures. Many victims moved from stricken to non-stricken areas, primarily from coastal to inland areas. In several towns and villages in Fukushima Prefecture, all residents were forced to evacuate to outside their municipalities after the nuclear accident (Yamashita & Kainuma eds. 2012). For example,

many residents and the town office in Okuma Town relocated to Aizuwakamatsu City in Fukushima Prefecture, while those in Futaba Town relocated to Kazo City in Saitama Prefecture. However, due to the scale of the disaster, evacuees relocated to numerous locations throughout Japan.

Widespread evacuations over prefectural and municipal borders were most frequently seen in tsunami-affected areas. Kesennuma City in Miyagi Prefecture decided to construct temporary housing for its residents in neighboring Ichinoseki City, Iwate Prefecture, because large flat lands suitable for housing construction were insufficient around Kesennuma City.
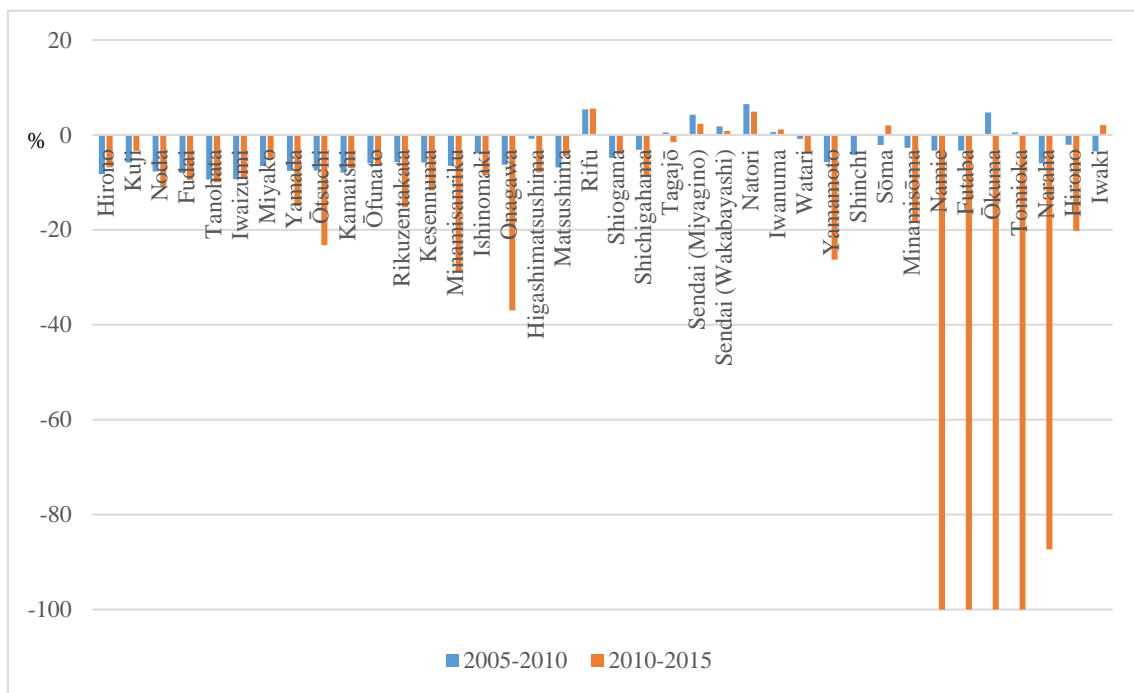
Source: National Census (2005, 2010, 2015)

Figure 1. Rate of population change in tsunami-affected municipalities

The large-scale utilization of rental housing as temporary housing contributed greatly to widespread evacuation behaviors. In other words, as was the case with temporary housing, victims could live in rental housing through public finance expenditures. Consequently, they migrated into prefectural capitals because these areas had a large supply of vacant housing; this largely contributed to the accelerated

depopulation of disaster-affected municipalities (Figure 1).[2]

New trends in temporary housing

A total of 52,543 prefab temporary housing units were used after the Great East Japan Earthquake (13,984 in Iwate, 22,095 in Miyagi, and 16,464 in Fukushima). Similar to past disasters, these units were mainly ordered from the Japan Prefabricated Construction Suppliers and Manufacturers Association (*purehabu kenchiku kyōkai*), a general incorporated association composed of major housing manufacturers. However, unlike past disasters, a new trend that occurred after this disaster is that orders were also placed with local construction companies that made wooden units using local lumber. Though less than 7,000 units of this type were ordered among all three prefectures, these wooden temporary housing units were more popular than prefab units among evacuees due to their higher perceived livability.

Regarding the social aspects of temporary housing, reconstruction from the Great East Japan Earthquake was said to have drawn on lessons learned from past disasters. Post-disaster temporary housing policies were no exception. For example, supportive officials from local governments that had faced serious disasters in the past advised officials in disaster-affected municipalities to make use of pre-disaster neighborhood associations and to form similar associations in temporary housing complexes. In addition, in order to prevent unattended deaths like the ones that had occurred after the Great Hanshin-Awaji Earthquake, the Democratic Party of Japan of the day established a governmental policy of moving the same disaster-affected community into the same temporary housing complex, which had also been attempted after the Chuetsu Earthquake.

It is true that tenants' associations were organized in over 90 percent of temporary housing complexes nine months after the earthquake, but the situations were quite different between small fishing villages and large urban areas. For example, in the case of Ishinomaki City in Miyagi Prefecture, which is famous for its fishing industry, close relationships that existed before the disaster could be maintained because small coastal villages such as Ishinomaki City were moved as a whole into small housing complexes.

On the other hand, large-scale complexes were composed of more than 1,000 housing units in urban areas, and tenants were chosen impartially by lot. This is partly because city-dwellers had fewer pre-disaster relationships than villagers, but mainly because city officials placed more importance on impartiality among the victims (interviewed in October 2014). Even if tenants' associations were formed in such complexes, they would typically lack collective unity.

As mentioned above, after this earthquake, victims who left shelters could enter rental condos or apartments as well as prefab temporary housing. This system is called "*minashi kasetsu,*" meaning that these rental housing units were later regarded as temporary housing units, or "*kariage jūtaku,*" meaning that victims could move into rental housing units rented in advance by local governments. In March 2012, there were a total of 54,774 of these types of units in Iwate, Miyagi, and Fukushima Prefectures (Table 1).

Table 1. Characteristics of temporary housing after past earthquake disasters

	Year	Prefab temporary housing		Rental housing	
		Number	%	Number	%
The Great Hanshin-Awaji Earthquake	1995	48,300	99.7	139	0.3
The Chuetsu Earthquake	2004	3,460	95.2	174	4.8
The Chuetsu Offshore Earthquake	2007	1,222	99.8	2	0.2
The Iwate-Miyagi Inland Earthquake	2008	73	77.7	21	22.3
The Great East Japan Earthquake	2011	52,543	49.0	54,774	51.0

Source: the Board of Audit (2012)

This was not the first time that rental housing had been used as temporary housing after a disaster in Japan, but it was the first time that rental housing had been used on such a large scale. The number of units used after the Great East Japan Earthquake was substantially higher compared with past disasters. This was particularly true in Sendai City, where the number of rental housing units reached 9,800, accounting for 80 percent of all temporary housing in the city. This is largely because Sendai City was a primary destination of evacuees from Iwate and Fukushima Prefectures, and therefore many rental housing units were needed to accommodate this large inflow.

Such large-scale utilization of rental housing is planned for future disasters such as a Tokyo inland earthquake or a Nankai Trough earthquake. The advantage of this is that by using existing housing stock, no new sites are needed for building temporary housing complexes, and thus housing can be supplied more quickly and efficiently to victims. Then, what problems remain in terms of rental housing? As seen in experiences after the Great East Japan Earthquake, it is difficult for tenants in temporary housing to interact with each other because rental housing units scattered throughout areas can easily become "unseen temporary housing" occupied by "unseen victims."

NPOs and community-based welfare

After the Great Hanshin-Awaji Earthquake, 1995 came to be called "the first year of the volunteer," because more than 1.3 million volunteers gathered in disaster-affected areas. Of course, not all volunteer activities in Japan started in 1995. As early as 1923, after the Great Kanto Earthquake, university students participated in volunteer activities such as the distribution of relief supplies and the preparation of evacuee lists; these types of activities subsequently developed into social work practices such as settlement movements (Noda 1995). After World War II, some university students joined workcamp in facilities for orphans, sick people, and the handicapped, and volunteer associations were founded in various regions.

In spite of this history, the response to the Great Hanshin-Awaji Earthquake was an epoch-making phenomenon where a great many young people who had not been involved in such activities began to take part in supplying food and water, teaching children and helping them with their schoolwork, and providing mental care to victims in shelters and temporary housing. Several researchers have described these activities as a "volunteer wave" or "volunteer revolution."

Under these circumstances, in December 1995, the Japanese government amended the Basic Act on Disaster Control Measures with the following phrase: "development of disaster prevention activities by volunteers." The government also decided in the middle of the 2000s that disaster volunteer centers should be set up by municipal social welfare councils in disaster-affected areas. Such institutionalization of

volunteer activities has both positives and negatives; although it may be efficient to prepare manuals for managing volunteer centers or to form networks beforehand in case of disasters, face-to-face relationships between victims and volunteers in the disaster site could be lost (Atsumi 2008).

Another way volunteer groups and civil activities were institutionalized was the Act to Promote Specified Non-Profit Activities in 1998. Some groups from the National Institute for Research Advancement (*sōgō kenkyū kaihatsu kikō*) and members from the Coalition for Legislation to Support Citizen's Organization (*shimin katsudō o sasaeru seido o tsukuru kai*) had started to research public interest activities by citizens from the first half of the 1990s. The Great Hanshin-Awaji Earthquake accelerated this movement, leading to discussions with the Liberal Democratic Party regarding the legislation of civil activities.

After this act came into force, the number of NPOs steadily increased year by year, eventually exceeding 40,000 in 2010. In addition, the government reformed the public interest corporation system in 2008, and existing corporations/foundations became general/public incorporated associations/foundations. Both NPOs and associations/foundations such as these played a major role in reconstruction after the Great East Japan Earthquake.

The change of power to the Democratic Party of Japan in 2009 promoted collaboration between government, companies, and citizens under the name of the "New Public." This notion, influenced by the concept of New Public Management, implies that citizens are not only consumers, but also providers of public services. The Great East Japan Earthquake led to an increase in the amount of subsidies and grants to NPOs, after which, more than a few NPOs shifted from being charity-oriented to being business-oriented. It can be said that community businesses and social enterprises that attempt to solve social problems utilizing a business model are currently in their heyday.

Meanwhile, because of not only the Long-Term Care Insurance System, but also the newly enacted Social Welfare Act, the year 2000 marked a turning point in the sphere of social welfare. The Social Welfare Act attempted to shift welfare in facilities to welfare in communities, stating in the introduction that it would promote social welfare

through community-based welfare.

Of course, this does not literally mean that community-based welfare began in 2000. Keeping in step with the aging society in Japan, from the 1980s to the 1990s, welfare commissioners and neighborhood associations in various regions started working on visitation activities and exchange meetings for the elderly in need of care, people with disabilities, and mothers raising children. Physical and mental conditions known through prior visits were shared with professionals such as public health nurses and welfare workers, and subsequent meetings included tea parties, lunch dates, and recreational activities.

These social support networks were created within school districts, so the main agents were neighborhood associations. However, participation in this type of organization was steadily declining due to an increase in the number of elderly and two-income households. Therefore, NPOs that engaged in welfare services and community development gradually came to play an increasingly important role in these grassroots activities as a pillar of the local community.
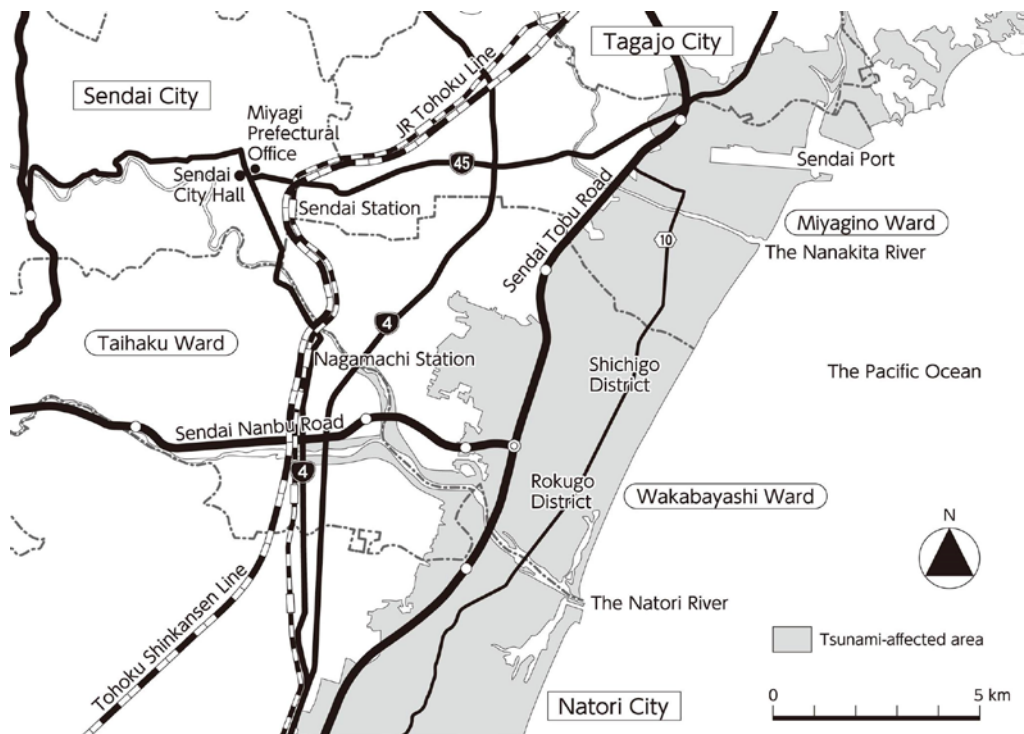
4 Case study: Temporary housing in Sendai City

Figure 2. Map of Sendai City

Coordination of support activities

The Great East Japan Earthquake caused serious human and material losses in the Sendai metropolitan area, which is composed of 14 municipalities and has a population of more than 1.5 million. Sendai is the capital city of Miyagi Prefecture and the largest city in the Tohoku Region. It is home to numerous branch offices and subsidiary firms. In Sendai alone, the tsunami after the Great East Japan Earthquake killed more than 900 people and completely destroyed about 8,000 houses in rural coastal areas in Miyagino and Wakabayashi Wards (see Figure 2). The tsunami severely affected agriculture in the Sendai Plain, one of the top rice farming areas in Japan.

In this section, I present a case study of Sendai City to examine the decision-making process of local governments and (support) activities for/by victims in temporary housing.[3] This case is particularly important because reconstruction processes depend largely on regional characteristics and disaster situations, and because "just as there is little understanding of the relationship of temporary sheltering to temporary housing, there is a similar lack of knowledge about the connection of temporary to

- 16 -

permanent housing" (Quarantelli 1982: 77).

Soon after the earthquake, the city government drew up the "Sendai City Earthquake Disaster Reconstruction Plan," and started construction of eight temporary housing complexes in Miyagino Ward, nine in Wakabayashi Ward, and one in Taihaku Ward. These complexes were to comprise 1,505 housing units. Based on experiences in the Great Hanshin-Awaji Earthquake and the Chuetsu Earthquake, city officials worked to enable the same tsunami-affected community to move into the same complex. The city government initially chose tenants using a community-based entry system, but other tenants were later chosen from individual households. Therefore, the community-based entry system was not used exclusively in this city as it was in other municipalities.

According to the city government, the number of temporary housing peaked at 12,009 in March 2012, comprising 1,346 prefab units, 825 public housing units, and 9,838 rental housing units (Sendai City 2016). The reason why rental housing occupied such a large majority of temporary housing in this city was that many people evacuating from other areas moved into rental housing. The number of tenants in temporary housing has gradually decreased due to their relocation to permanent housing (Figure 3).
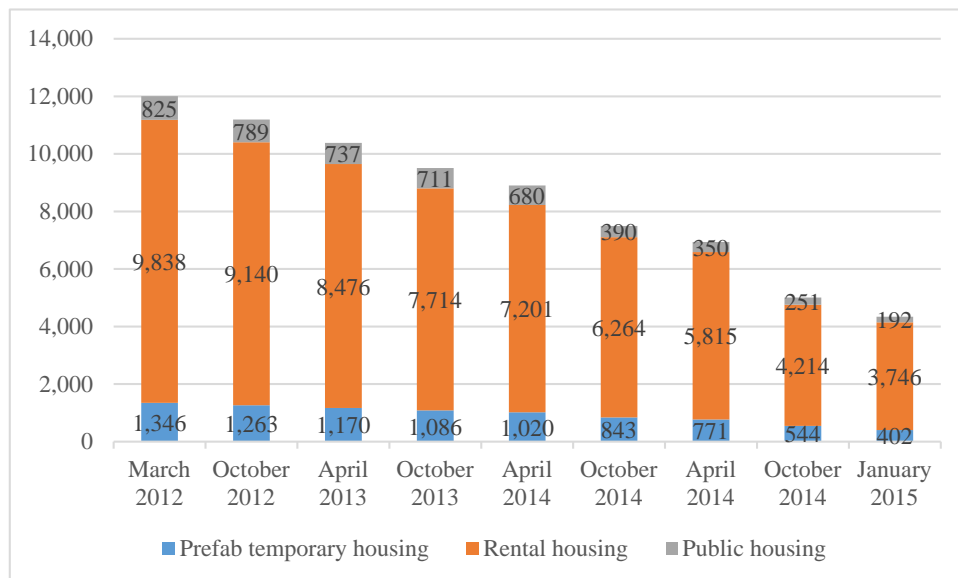
Source: Sendai City (2016)

Figure 3. The number of temporary housing units in Sendai City

In Sendai City, each ward adopted a different principle of supporting victims in temporary housing complexes. In Miyagino Ward, support activities were coordinated by tsunami-affected neighborhood associations. In Wakabayashi Ward, two new networks for supporting victims were organized through cooperation between volunteer groups, NPOs, and government officials. On the other hand, in Taihaku Ward, which is located in the inland and had no tsunami-affected areas, support activities were coordinated by an NPO at an early stage, as services for tenants were outsourced by the city government.

Let us now look at the case of Wakabayashi Ward. After the disaster, Sendai City assigned six officials to Wakabayashi Ward to support the formation of tenants' associations in temporary housing and the rebuilding of houses in tsunami-affected areas. In addition, the ward government employed 10 part-time staff members and stationed them in shelters and temporary housing complexes as caretakers. Their formal tasks were limited to acting as liaisons with the ward government, overseeing the maintenance of temporary housing units, and coordinating activities in meeting places; however, in practice, they provided informal support to tenants' associations and care to people in need.

In addition, the Department of Community Development in this ward helped volunteer groups and NPOs form a network called Rokugō Shichigō Comi-Net. Rokugō and Shichigō are names of tsunami disaster-affected districts, and Comi-Net is a combination of community and network. From May 2011 to March 2015, this network coordinated offers of support activities from groups in other areas, held exchange meetings in temporary housing, and published booklets regarding history and tourism in these districts (Saito 2015).

The Wakabayashi Ward Social Welfare Council also established "Roundtable Meetings for Reconstruction (*Fukkō no Wa Mītingu*)" with volunteer groups, NPOs, welfare commissioners, and welfare service suppliers, in which methods for supporting victims in temporary housing, caring for tsunami-affected children, and promoting community development around temporary housing complexes are discussed bi-monthly.

The reason why both Wakabayashi Ward and the Wakabayashi Ward Social

Welfare Council created such a network was because from their standpoint, the Great East Japan Earthquake and the subsequent emergence of numerous volunteers and NPOs marked a turning point in regional revitalization and community-based welfare. Therefore, these two public institutions became involved in organizing networks with the expectation that they would become agents of community development in the near future.

This leads to the following question: Were activities in temporary housing complexes well-coordinated by officials, caretakers, associations and networks? Below I summarize the trends among 3,101 activities that were carried out in temporary housing complexes in Wakabayashi Ward from July 2011 to December 2012. These data were originally compiled by caretakers in complexes in a report submitted to the ward office, so I analyzed it with ward officials. Although these data were not acquired through a sociologically structured format, they do provide useful information regarding medium-term changes in activities carried out in temporary housing complexes.

First, substantially more activities were carried out in large complexes than in small ones, and in community-based complexes than in household-based ones.[4] As shown in Table 2, the number of activities per month was 64.6 in A complex and 54.0 in B complex (both A and B were large-scale, community-based complexes). On the other hand, the number of activities per month was 14.0 in C complex and 23.9 in D complex (both C and D were medium-scale, household-based complexes). As shown in Figure 4, the number of activities steadily decreased in A complex, while the number of activities in F complex remained at a low level. Unfortunately, insufficient data were collected from the early stage for D complex, but the number of activities in D was thought to have decreased, similar to the trend observed in A complex.

Table 2. Types of temporary housing and number of activities in Wakabayashi Ward

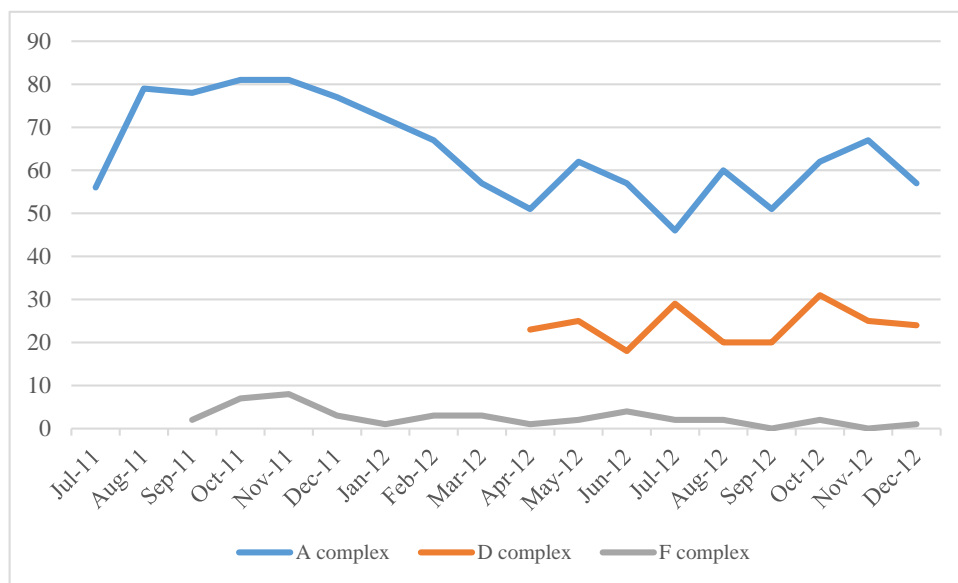|	Maximum number of households	Entry system	Number of activities per month
A complex	197	community-based	64.6
B complex	194	community-based	54.0
C complex	95	household-based	14.0
D complex	92	household-based	23.9
E complex	90	mixture	19.0
F complex	24	mixture	2.9
G complex	19	household-based	1.7
H complex	15	mixture	2.3

Figure 4. Number of activities in selected temporary housing complexes from July 2011 to December 2012

Second, comparing activities in 2011 with those in 2012, changes were seen in both the temporary housing activity content and providers. As shown in Figure 5, the proportion of "health exercises or consultations" and "hobby activities" increased, while that of "distribution of relief supplies" and "teaching children" decreased. The increase of "health exercises or consultations" represents tenants' concern with unattended deaths in temporary housing, and that of "hobby activities" means the development of personal relationships among tenants. Regarding providers, an increase in the percentage of "tenants themselves" seemed to complement the decrease in "volunteer groups/NPOs" (Figure 6). It can be said that activities by the outside of temporary housing promote
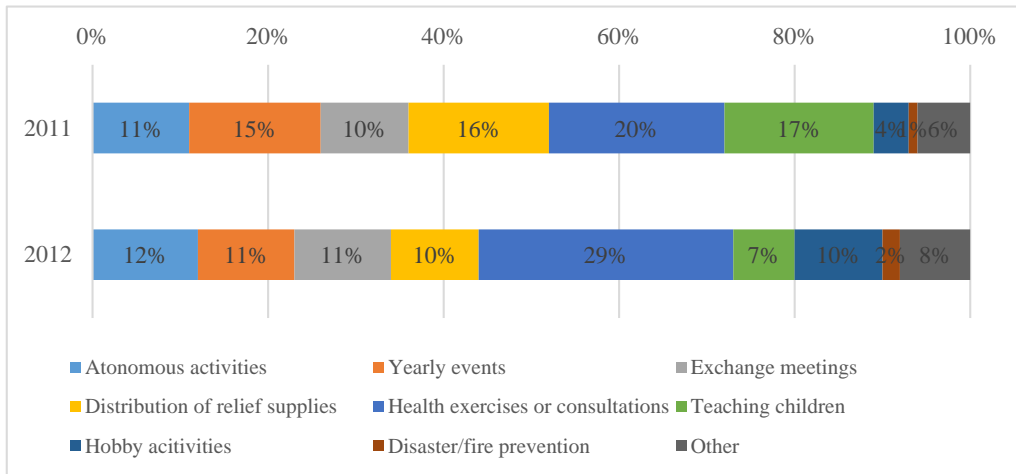
those by tenants themselves.

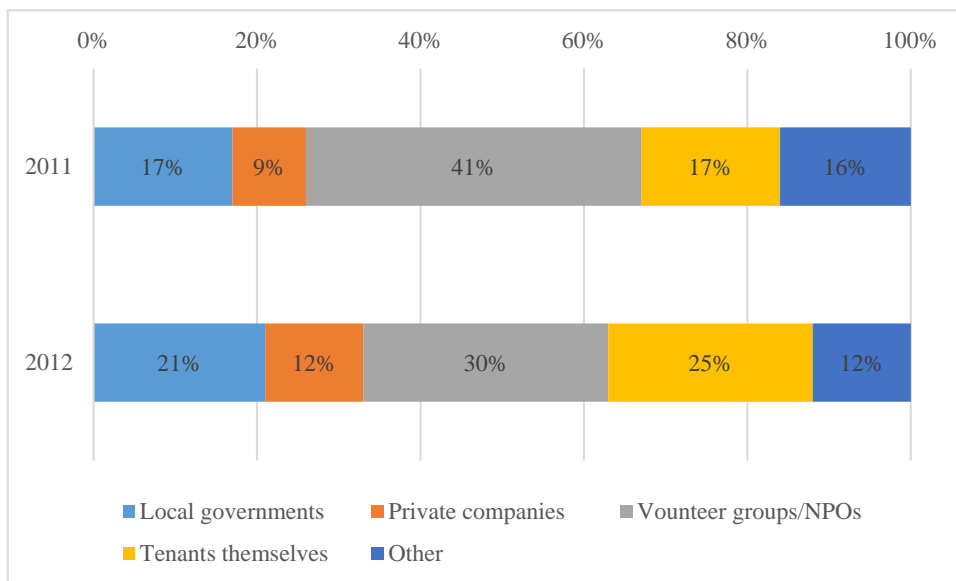**Figure 5.** Types of activities in temporary housing

Figure 6. Activity providers in temporary housing

Problems in rental housing

As mentioned above, this was not the first time that rental housing had been utilized as temporary housing. Some 170 units were provided for victims after the Chuetsu Earthquake in 2004. Since then, a number of prefectures entered into agreements with the real estate industry regarding the utilization of rental housing in the case of a large-scale disaster. These agreements included items such as the provision of information on

and the free intermediation of rental properties.

Table 3. Temporary housing in the disaster-affected prefectures

	Prefab temporary housing		Rental housing		Public housing		Total
	Number	%	Number	%	Number	%	
Iwate Prefecture	13,984	73.8	3,722	19.6	1,236	6.5	18,942
Miyagi Prefecture	22,095	44.5	26,050	52.5	1,507	3.0	49,652
Fukushima Prefecture	16,464	38.1	25,002	57.9	1,746	4.0	43,212
Total	52,543	47.0	54,774	49.0	4,489	4.0	111,806

Source: the Board of Audit (2012)

After the Great East Japan Earthquake, the MHLW issued several notifications regarding the flexible enforcement of the Disaster Relief Act. They expanded the number of rental housing units that could be used as temporary housing and declared that rental housing entered arbitrarily could be retroactively regarded as temporary housing. In the beginning, the disaster-affected prefectural governments of Iwate, Miyagi, and Fukushima Prefectures thought that rental housing could be used to complement temporary housing in case of delays in the construction of temporary housing. However, contrary to the expectations of officials, rental housing eventually accounted for over half of all temporary housing in the three prefectures (Table 3).

In Sendai City in particular, rental housing accounted for almost 80 percent of all temporary housing because abundant rental condos and apartments were available. However, the city government was late in assigning these 9,800 units as rental housing. In fact, it was not until 6 months after the earthquake that the headquarters for disaster reconstruction in Sendai City knew the complete picture.

At the time, inequalities in support between victims in temporary housing and those in rental housing became evident. What was the nature of these inequalities? In temporary housing complexes, tea parties and recreational activities were held weekly, and necessities such as food and clothing were distributed free of charge by NPOs and other companies. The meeting places for those in temporary housing were stationary bases. On the other hand, even though NPOs and companies also wanted to support victims in rental housing, they were unable to do so because they did not know where

such victims were located. This is the problem mentioned above of "unseen victims in unseen temporary housing" (Saito 2014).

A victim who lived in rental housing looked back on those days as follows:

"…(n)eighborhood relationships were quite changed by my moving into a rental housing unit. When I went to a tea party in a temporary housing complex, a tenant said to me, 'This event is only for tenants in this complex, not for people in rental housing.' Tenants in the complex looked united, so I hesitated to join their groups." (interviewed in March 2014)

Similarly, another victim said:

"…(v)ictims in rental housing seemed rejected by those in temporary housing. No one from temporary housing has ever asked me to 'Please join our tea party.' People sometimes say that wealthy people prevented others from moving into rental housing, but they are mistaken. There were plenty of relief supplies in temporary housing. I wanted to go there to get some, but I couldn't." (interviewed in September 2011)

To address this situation, the city government conducted a door-to-door survey on the needs of victims in rental housing, and requested that the Sendai City Social Welfare Council, an organization affiliated with the city government, develop a support program. As a result, the Sendai City Social Welfare Council, which was subsidized by the government and employed about 40 staff members, established the Community Mutual Support Center (*Chiiki Sasaeai Sentā*) in December 2011.

The role of this center included providing information on the distribution of relief supplies and visiting activities to the elderly, the handicapped, middle-aged individuals living alone, and single-parent families in rental housing. Therefore, in Sendai City, the Community Mutual Support Center was put in charge of supporting tenants in rental

housing, while each ward government was put in charge of supporting those in temporary housing.

In addition, in cooperation with welfare commissioners, neighborhood associations, volunteer groups and NPOs, the Community Mutual Support Center held monthly tea parties for the elderly living in rental housing in various locations of the city. It also held specialized exchange meetings for evacuees from a certain area, for example, a tea party for the former residents of Kesennuma City, Minamisanriku City, and Fukushima Prefecture. This was because widespread household-based evacuees from these areas needed a place where they could be acquainted with one another.

In contrast, tenants in rental housing lacked stationary bases that could be used as meeting places for activities, and therefore seldom formed groups of their own. In a few cases, the formation of groups was the result of organization by women's pre-disaster networks. It seems evident that all-purpose organizations such as neighborhood associations had difficulty in seizing the initiative in coordinating the different needs between victims in temporary housing and those in rental housing.

Here, I take up the case of *Wakamatsukai*, a group founded in September 2011 by women in their 40s and 50s who had lived in the Arahama area, Shichigō District, and entered rental housing for fear that their children and the elderly in poor health would cause trouble to others in temporary shelters. Limiting its membership to victims living in rental housing, they held weekly study sessions for children and tea parties for the elderly with support from NPOs and private companies. The number of members grew to about 150, and membership was expanded to evacuees from other areas. The leaders of *WakamatsuKai* said, "We wanted to hold events similar to those in temporary housing complexes" (interviewed in February 2014).

While the activities in temporary housing were to a certain degree managed by officials and caretakers, the tenants in rental housing still had to manage activities by themselves. Although they received some subsidies for their activities from the ward government, these funds were not enough to rent a stationary base. This represented a constraint condition for victims in rental housing in that they lacked a venue for their publically assisted activities.

Victim-designed care system and public housing

The first temporary housing complex in Sendai City was completed in Taihaku Ward in late April 2011, which was as early as a month and a half after the earthquake. Taihaku Ward itself had no tsunami-affected areas, but a large-scale open space, named "Asuto Nagamachi," had been reserved for urban redevelopment. City officials decided to build the first complex there due to convenient transport and the proximity of large commercial centers.

However, at the beginning, the Asuto Nagamachi Temporary Housing Complex was "unattended temporary housing" because it was located right in the middle of an urban redevelopment area, so tenants could not depend on neighborhood associations for support, and because officials in Taihaku Ward, divided between the city and ward governments, were behind the curve on the improvements required for temporary housing environments.

At first, similar to other complexes, tenants were selected using the community-based entry system; however, contrary to the expectations of city officials, the number of applicants for this complex was very small. Moreover, in spite of the community-based entry system, relationships were not rooted in pre-disaster communities, but fostered in evacuation shelters. The number of community-based households was limited to 37, while the remaining 200 households did not know each other's faces until the entry into temporary housing.

As a result, relationships became unstable more or less because wealthy people who had more stable lives and poor people who had problems such as social withdrawal and mental disorder came to live together in this complex. Trouble seemed to occur between next-door neighbors one after another. The chairman of the tenants' association reported that, "This complex looked like a slum at that time" (interviewed in December 2013).

Facing these troubles, people who moved into the complex through the community-based entry system took the initiative in organizing a tenants' association. The formation of numerous hobby groups such as the exercise club, the karaoke club,

and the handicraft club, contributed greatly to this organization process. Eventually, more than 10 clubs were organized in this complex, all of which were made by their wills or based on the advice of outside volunteer groups; the number of members belonging to each club ranged from five to 20.

By naming these groups "clubs," leaders of the association attempted to make activities in temporary housing visible to those who had not joined, and to make these small groups related to one another. The informal organization of hobby groups complemented the formal organization of the tenants' association, which reminds us of Granovetter's famous proposition, "the strength of weak ties" (Granovetter 1973).

The tenants' association, named the "Asuto Nagamachi Temporary Association," officially launched in March 2012. It was rare after the Great East Japan Earthquake that this kind of association was organized by the initiative of tenants rather than by the activities of the local government or the utilization of pre-disaster neighborhood associations. The chairman of the association promised its members that unattended deaths in the complex would be prevented, and that the path from temporary to permanent housing would be determined. These two declarations became the primary missions of the association (Saito 2016).

First, from the beginning, services were provided for tenants by an NPO composed of support groups for the handicapped and homeless. Utilizing the Emergency Job Creation Program of the MHLW, this NPO, which aimed to support victims' livelihoods through employment, enlisted 50 victims to work as temporary housing complex supporters. These supporters visited victims' homes and checked their conditions every day. These services enjoyed a good reputation among the tenants.

However, as is often the case with civil activities, this NPO gradually changed its direction from supporting victims' livelihoods to supporting the employment of needy people in general, so the number of supporters and their visits to victims' homes gradually decreased beginning in 2012. To compensate for the reduction in these activities, the leaders of the association had to construct a care system on their own. Through consultations with medical and psychological professionals, they set up a health counseling program, including mental health, in cooperation with local hospitals and

universities. They also began holding a monthly care conference on the physical and mental conditions of tenants with officials from the Taihaku Ward Healthcare Center.

Second, leaders of the association started to consider where victims would live after they left temporary housing, as more than 70 percent of the residents were 60 years of age or older, and 40 percent in the Asuto Nagamachi Complex were single elderly individuals. In addition, more than 50 percent of the residents were unemployed (Arai 2015). Judging from their social and economic stratifications, their choices of residence after temporary housing were limited solely to disaster public housing. According to the chairman, their slogan was "Let's move into disaster public housing together."

At the same time, some evacuees from other areas wanted to maintain relationships through the activities of the hobby groups mentioned above. This is because they could not return to where they had lived before disaster due to delays in land readjustment or decontamination. However, after the Great Hanshin-Awaji Earthquake, tenants in disaster public housing were selected by lot, and relationships in temporary housing were cut off. Therefore, the leaders began to discuss the ideal conditions of disaster public housing complexes in consideration of the decision process of tenants.

Usually, officials from the Department of City Planning make a plan for public housing after a disaster based on the Act on Public Housing, so it was unusual in this case that the victims did so themselves. This is because the city government only proposed a method for part of the disaster public housing complex, and decided to purchase complexes constructed by private companies.

Supported by architectural professionals in local universities and design offices, some 90 tenants in the complex discussed layouts of public housing dwelling units and a meeting place for half a year or longer, and then submitted to the city government their original plan, which considered the formation of face-to-face relationships from the standpoints of those who had lived in temporary housing for a few years.

Though their proposal was not ultimately accepted, it was decided that three disaster public housing complexes would be built in the Asuto Nagamachi area near their temporary housing complexes by private companies. The tenants' group therefore

changed their policy from the planning of disaster public housing to the decision process of tenants, requiring city officials to allow groups composed of several households in temporary housing to enter the same disaster public housing complex together. As a result of their organization and the subsequent introduction of a community-based entry system, similar to that used in temporary housing, more than 60 households moved into three complexes in Asuto Nagamachi.

5 Conclusion

Temporary housing became a social problem in Japan in the 1990s after a series of unattended deaths occurred in the aftermath of the Great Hanshin-Awaji Earthquake. In these serious situations, disaster-affected local governments placed staff such as life support advisors in temporary housing complexes, and volunteer groups started visiting activities and exchange meetings. These systems and practices were also successful in disaster public housing complexes.

Other local governments facing subsequent disasters took advantage of these lessons as a model of supporting victims in temporary housing. They even went further and made it possible for disaster-affected neighborhood associations to move into the same complexes, in an attempt to maintain the continuance between pre- and post-disaster communities. However, unattended deaths in temporary housing still occurred after the Great East Japan Earthquake, numbering as many as 200 over a 5-year period.

The above-mentioned cases in Sendai City seem to raise some questions about community organization in temporary housing.

First, it is impossible for local governments to fully implement a community-based entry system, particularly in urban areas. Hence, complexes composed of household-based evacuees inevitably appear. Even if a community-based entry system is implemented, cases in which multiple communities in the same complex come into conflict with each other over rules such as trash disposal and automobile parking will arise, and in turn, the solidarity of pre-disaster communities will deteriorate because of differences toward the way of housing reconstruction. From this standpoint, the

community-based entry system is no more than a presupposition.

It is true that many problems can occur in a large-scale complex, but this does not mean that a small-scale complex is without problems. Large-scale complexes tend to have many more activities than small-scale complexes because volunteer groups and NPOs are more inclined to visit large-scale complexes. Then, do tenants in small-scale complexes feel isolated because they have limited opportunities for interaction with each other? Even though support activities by volunteer groups and NPOs are coordinated by officials, caretakers, and support networks, there is a limit to this coordination because it is not easy to change the targets of support activities.

Second, the Japanese government plans to utilize rental housing on a large-scale in future disasters because urban areas have many vacant apartments but space available for the construction of temporary housing is limited. However, conflict did occur between victims in temporary housing and those in rental housing over the unequal distribution of relief supplies after the Great East Japan Earthquake. Evacuees from other areas were, in a sense, forced to be "refugees" because they had neither relationships nor information in an unfamiliar place. Therefore, countermeasures for these types of conflicts and problems in temporary housing need to be examined in advance.

In addition, a controversy regarding "performance in kind or cash benefits" began with the utilization of rental housing as temporary housing. This is partly because administrative processes were delayed in Miyagi Prefecture due to the enormous number of applications from victims, and partly because housing aid to needy people came to be discussed. However, the question remains whether rental housing supplied to disaster victims and housing aid given to needy people should be discussed in relation to one another.

Third, regarding the community-based entry system, what exactly does "community-based" mean? Does it refer to post-disaster associations or groups formed in temporary housing, as well as pre-disaster neighborhood associations? If so, it is also necessary to consider using the community-based entry system for disaster public housing complexes. It is true that victims live in temporary housing just temporarily, but they live not only in housing, but also in a local community in which their housing is

located. Although disaster public housing tenants are impartiality selected by lot in many cases, policies should be implemented that encourage the maintenance of relationships fostered in temporary housing.

By the way, in the evening of April 14, 2016, a big earthquake occurred in Kumamoto Prefecture, the middle part of Kyushu region. In this area, earthquakes are wrongly thought to be infrequent regardless of existence of active faults, so houses and buildings got behind in earthquake-resistant construction. A 6.5-magnitude foreshock and a 7.3-magnitude main shock hit mountainous villages as well as residential suburbs. This Kumamoto Earthquake severely damaged more than 10,000 houses and killed 50 residents as of this writing. The latter figure includes deaths by "economy class syndrome" seen in the Chuetsu Earthquake in 2004.

In disaster-affected areas, disaster volunteer centers were set up by municipal social welfare councils, and a lot of volunteers and nonprofit organizations are heading there to support victims' lives. Because of the delayed construction of prefab temporary housing (which is scheduled to be completed in the middle of June), Kumamoto Prefecture decides to provide victims with rental housing for free as in the Great East Japan Earthquake in 2011, and some prefectures of Western Japan with their public housing. The estimated number is: 2,100 prefab temporary housing units, 2,100 rental housing units, and 2,700 public housing units (of course, this figure is in flux).

It is certain that victims had better move from shelters to temporary housing as soon as possible under the intermittent aftershocks. However, at the same time, I'm afraid that these ad hoc housing reconstruction policies would accelerate widespread evacuation of victims and harm their pre-disaster neighborhood relationships. After the Great East Japan Earthquake, those who evacuated from other areas could easily become "unseen victims" in unfamiliar places or scattered rental housing, and constructing relationships between them and their supporters demanded a large amount of time. We should remember that the number of disaster-related deaths is larger than that of deaths directly by disaster in Fukushima Prefecture in the context of the widespread evacuation after the nuclear accident.

Notes

[1] Disaster public housing is a kind of public housing, but the eligible for moving in it are limited to disaster victims. The rent of disaster public housing is lower than that of public housing in general.

[2] Due to the nuclear plant accident, Namie Town, Futaba Town, Ōkuma Town, Tomioka Town, and Naraha Town were designated as restricted area, the rate of population change from 2010 to 2015 recorded -100.0%. In Naraha, residents started to return to their hometowns since September 2015.

[3] My fieldworks in Sendai City started in June, 2011, including community work in tsunami-affected areas as well as research and study about the social process of disaster reconstruction. The following case study is based on them.

[4] "Household-based" means that victims evacuating from various areas individually moved into temporary housing, not collectively.

References

Arai, Nobuyuki, 2015, "Tachiiki syusekigata kasetsu jūtaku no komyunitī to jichi no keisei katei: Sendai Asuto Nagamachi kasetsu jūtaku o taishō ni [The Building Process of Community and Self-Government in the Temporary Housing that Gathered from Various Disaster Areas: Case Study on Asuto-Nagamachi Temporary Housing in Sendai]," *Bulletin of Tohoku Institute of Technology Regional Cooperation Center*, 27(1):21-32.

Atsumi, Tomohide, 2008, "Saigai borantia saikou [Rethinking Disaster Volunteers]," Mashiho Suga, Yusuke Yamashita, and Tomohide Atsumi eds, *Saigai Borantiaron Nyūmon [The Introduction to Disaster Volunteers]*, Tokyo: Kōbundō, 84-105.

Bolin, Robert, 1982, *Long Term Family Recovery from Disaster*, Boulder: University of Colorado, Institute of Behavioral Science.

Furuya, Takashi, Munenari Inoguchi, Keiko Tamura, Go Urakawa, and Haruo Hayashi, 2010, "Niigata-ken Chuetsu-oki jishin go no Kashiwazaki-shi ni okeru ōkyu kasetsu

jūtaku kyōkyū to nyūkyo jittai [Ex-post Analysis for Location/Allocation of Temporary Housing Unit and Demand after the Niigata-Chuetsuoki Earthquake]," *Journal of Social Safety Science*, 12:41-51.

Glaser, C. Goldine, Bonnie L. Green, and Carolyn Winget, 1981, *Prolonged Psychosocial Effects of Disaster: A Study of Buffalo Creek*, NY: Academic Press.

Granovetter, 1973, "The Strength of Weak Ties," *American Journal of Sociology*, 78(6): 1360-80.

Hasegawa, Takashi, Akihiko Iwasa, Shun'ichi Shinkai, Masahiko Shinozaki, Atsuko Yasutake, Ken'ichi Kobayashi, and Atsushi Miyakosi, 2007, "Ōkyu kasetsu jūtaku ni okeru kyojyū kankyō kaihen to sono shien: kasetsu kafe ni yoru jissenteki kenkyū [Research and Support of Temporary Housing of Disaster: A Practical Study by "Temporary Café"]," *Journal of Architecture and Planning*, 622:9-16.

Hayakawa, Kazuo, 1997, *Kyojū Fukushi [Housing and Welfare]*, Tokyo: Iwanami Shoten.

Maki, Norio, 2012, *Saigai no Jūtakushi [Housing Monograph of Natural Disaster]*, Tokyo: Kajima Shuppannkai.

Matsui, Katsuhiro, 2008, *Chuetsu Jishin no Kioku: Hito no Kizuna to Fukkō he no Michi [The Memory of the Chuetsu Earthquake: Human Relationships and Reconstruction Process]*, Tokyo: Kōshi Shoin.

Mitsui, Sayo, 2004, *Kea no Shakaigaku: Rinshō Genba to no Taiwa [The Sociology of Caring: A Dialogue with Clinical Fields]*, Tokyo: Keisō Shobō.

Nagamatsu, Shingo, 2008, *Gensai Seisakuron Nyūmon [The Introduction to the Disaster Reduction Policy]*, Tokyo: Kōbundō.

Nishiyama, Shiho, 2005, *Borantia Katsudō no Ronri: Borantia kara Sabushisutensu Shakai he [The Logic of Volunteering: Voluntarism and Subsistence]*, Tokyo: Tōshindō.

Noda, Masaaki, 1995, *Saigai Kyūen [Disaster Rescue]*, Tokyo: Iwanami Shoten.

Noda, Takashi, 1997, *Saigai to Shakai Shisutemu [Disaster and the Social System]*, Tokyo: Kōseisha Kōseikaku.

Nukada, Isao, 1999, *Kodokushi: Hisaichi Kobe de Kangaeru Ningen no Fukkō*

[*Unattended Deaths: Human Recovery in Disaster-Affected Kobe]*, Tokyo: Iwanami Shoten.

Quarantelli, Enrico, 1982, *Sheltering and Housing after Major Community Disasters: Case Studies and General Conclusions*, Disaster Research Center, Ohio State University, Columbus, Ohio.

Saito, Yasunori, 2014, "Minashi kasetsu to seikatsu shien: Higashinihon Daishinsai Sendai-shi ni okeru saigo 3 nenkan no seido to katsudō no tenkai [Rental Housing and Life Support: Systems and Activities in Sendai City after the Great East Japan Earthquake]," *Fukkō*, 10: 35-45.

Saito, Yasunori, 2015, "Fukkōshien katsudō kara mita gyōsei shisutemu to shimin shakai no saigo: 'Rokugō-Shichigō Kominetto,' 'Wakabayashi-ku Fukkō Ōentai' he no kakawari kara [Administrative System and Civil Society after the Disaster: through the Participation in 'Rokugō-Shichigō Comi-Net' and 'Reconstruction Supporters in Wakabayashi Ward']," *Shinsaigaku*, 6: 245-65.

Saito, Yasunori, 2016, "Kasetsu jūtaku ni okeru komyunitī keisei o saikou suru: Higashinihon Daishinsai Asuto Nagamachi kasetsu jūtaku ni okeru seikatsu kadai to nettowāku no tenkai [Rethinking Community in Temporary Housing in the 2011 Great East Japan Earthquake: Disaster Victims' Life Problems and Support Networks]," *Annals of Regional and Community Studies*, 28: 61-75.

Sendai City, 2016, *Sendai Fukkō Ripōto [Reconstruction Report in Sendai City]*, 38.

Shibata, Kazuko, 1997, "Kasetsu jūtakugai ni okeru jichikai katsudo no genjō [Tenants' Activities in Temporary Housing Complex]," Kobe University Research Society of Earthquake ed., *Kutō no Hisai Seikatsu [Distressing Livelihood in Disaster]*, Hyogo: Kobe Shimbun Sōgō Shuppan Center, 129-37.

Shiozaki, Yoshimitsu 2009, *Jūtaku Fukkō to Komyunitī [Housing Reconstruction and Community]*, Tokyo: Nihon Keizai Hyōronsha.

Tanami, Hisae 2012, "Hanshin-Awaji Daishinsai ni okeru kengai hinansha [Evacuees to outside the Hyogo Prefecture in the Great Hanshin-Awaji Earthquake]," Disaster Reduction and Human Renovation Institution ed., *Hanshin-Awaji Daishinsai ni okeru Sumai no Saiken: Ronsetsu to Shiryō [Housing Reconstruction in the Great*

Hanshin Awaji Earthquake: Explanations and Materials], 16-27.

Yamashita, Yusuke and Mashiho Suga, 2002, *Saigai Borantia no Shakaigaku: 'Borantia=NPO' Shakai no Kanōsei [The Sociology of Disaster Volunteers: The Possibility of Volunteer and NPO]*, Kyoto: Minerva Shobō.

Yamashita, Yusuke and Hiroshi Kainuma eds., 2012, *Genpatsu Hinanron: Hinan no Jitsuzō kara Sekando Taun, Kokyō Saisei made [The Theory of Evacuation from the Nuclear Accident: The Reality of Evacuation, Second Town, and Restoration of Hometown]*, Tokyo: Akashi Shoten.