



Community Formation Processes and Current Situation in Yuriage, Natori City, in Recovery from the 2011 Great East Japan Earthquake

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Community Formation Processes and Current State of Recovery in the Yuriage District of Natori City from the 2011 Great East Japan Earthquake

Abstract

The 2011 Great East Japan Earthquake was a large-scale and widespread disaster that claimed many victims and made the existing communities untenable. After the event, about 30,000 mass public housing units were built for recovery of the affected areas, creating new communities, different from earlier ones before the disaster.

The strength of a local community network in a newly formed city is important for victims who live there. However, it is different on a regional scale: some of the cities have been rebuilding their social network after the event and new communities have developed smoothly, while others have not.

In the Yuriage district area of Natori City in Miyagi Prefecture, housing reconstruction projects were completed between (month) 2016 and December 2018. The first new neighborhood association was formed in March 2019. Thus, it took a lot of time for new residents to establish a neighborhood association. Even though the association was newly established, there are still challenges in the process of organization and its reality after the loss of the existing community. Moreover, such information is rarely disclosed to the public.

The purpose of this study is to understand and clarify the processes and the reality of community formation after the restoration of Yuriage district to consider future operational issues.

The main findings are as follows:

- (1) Although some of the residents are aware of the necessity of community associations since the residents started living in Yuriage, they did not know how to form them. As a result, the government's short and intensive outreach to the community to create a neighborhood association and the connection of key people in the community with the government led to the establishment of the association, which resulted in the establishment of the Yuriage neighborhood association.
- (2) Although the government supported the establishment of the neighborhood association, the burden is very heavy on the chairman who manages the association after establishment. Even if the president of the neighborhood association is a key person with connections to various support groups, his management role in the organization should be decentralized.
- (3) Differences in residential histories as a result of prolonged evacuation has hindered the formation of a new community for the survivors as they begin to live in the newly developed and reconstructed city.

Keywords: disaster recovery public housing, temporary housing, apartments as emergency housing, raising land, the 2011 Great East Japan Earthquake



1. Introduction

1.1 Background and Purpose

Ten years have passed since the Great East Japan Earthquake struck Japan as of March 2011. Disaster recovery public housing has been built in the affected areas, which is the key to restoring the lives of the victims and consequently, a new community has been formed that is different from the one before the disaster. One of the important perspectives in post-disaster recovery for victims is building communities.

In the Great Hanshin-Awaji Earthquake (1995), "district community planning association for reconstruction" played an important role in revitalizing community activities. In particular, in Kobe City, "district community planning association for reconstruction" existed even before the disaster event, demonstrating the importance of citizen participation and the existence of self-governing associations in earthquake reconstruction.

After the Niigata Chuetsu Earthquake (2004), "district community reconstruction supporters" went into the affected areas to provide support for victims in the absence of a victim-oriented community development system.

Many studies on post-disaster housing and living environment were conducted in temporary housing and public housing for reconstruction. Miyasada, et al. (2012) [1] clarified the characteristics of residents, the evaluation of the living environment by residents, and the actual living conditions such as community and outing behavior during the reconstruction of housing four years after the Great Hanshin-Awaji Earthquake.

Furthermore, "individual support" to attend to the lives of each and every disaster victim in the affected areas is required. "Community support" is also needed to create a place where local residents can help and support each other, as well as to build connections and community so that disaster victims can find prospects for self-reliance.

Hirano, et al. (2014) [2] considered the overlap between the temporary and reconstruction periods as the "reconstruction complex period" and examined how to support disaster victims in it. They summarized the achievements of community support in the temporary period of resettlement and the problems in the method of self-reliance support required in the "reconstruction complex period," and pointed out the need for an intermediate support organization that can work across the board.

In May 2017, Miyagi Prefecture extended the period of provision of temporary housing from six to seven years, raising concerns in the prefecture about delays in reconstruction projects and various issues caused by the prolonged provision of temporary housing. In July 2019, the provision period was extended from nine to ten years.

In Natori City, Miyagi Prefecture, the provision of all temporary housing was completed in April 2020. In the Yuriage area, the damage was so severe that its urban development focused on local reconstruction through [3].

In the reconstruction land readjustment project, the supply of housing was the first step? However, depending on the timing for life resumption in the area, facilities other than housing necessary for daily life may not be in place, and communication among residents was insufficient. In December 2018, all the housing reconstruction projects were completed, and in March 2019, the first new neighborhood association was established in Yuriage after the earthquake. However, it took a long time to establish a community association in Yuriage, where urban development had been phased over a long period of time.

This study focuses on the experience of citizens in the Yuriage area of Natori City, and aims to clarify the process of formation of local communities in the area after reconstruction, as well as the actual situation and operational issues dealt by the newly established neighborhood associations after the earthquake.

1.2 About Yuriage District

Yuriage District is a port town located in the eastern part of Natori City facing the Pacific Ocean (Figure 1). It has long been known for its fishing industry as well as for its morning fresh market, bicycle sports center,



surfing, and other tourist attractions. Before the disaster, the population of Yuriage was 7101 (as of the end of January 2011). However, 753 people lost their lives in the disaster and the area was heavily damaged.

Since the disaster, public facilities such as the Yuriage Community Center and the Yuriage Elementary and Junior High School were built, as well as commercial facilities such as Kawamachi-terasu and the Yuriage Port Morning Market, etc. Furthermore, the reconstructed town opening ceremony was held in May 2019 and a declaration of achievement in reconstruction was made in March 2020. As of the end of May 2020, the entire district has 2,974 residents (Figure 2). The district is characterized by a high aging rate compared to Natori City as a whole, with one out of every three residents being 65 years old or older, and a high percentage of residents working outside the district.



Fig. 1 – Location of Yuriage District, Natori City, Miyagi Prefecture

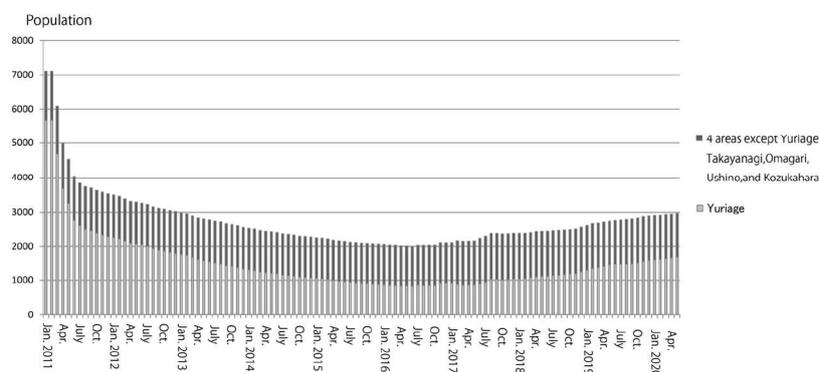


Fig. 2 – Population changing in Yuriage District (Jan. 2011-May 2020)

2. Method

2.1 Questionnaire survey to understand residents' livelihood activities

In order to understand the actual situation behind the issues of residents in public housing in Yuriage, a questionnaire survey was conducted two times in the West Housing Complex (the earliest disaster recovery public housing complex in Yuriage). The survey consisted of four main items: basic attributes of the respondents, environmental transition, housing style, and reconstruction community planning. The total number of units in the Housing Complex is 90, of which the first round was conducted in October 2016 for 25 units of Phase 1-1 detached type; the second round was conducted between February and April 2017 for 52 units of Phase 1-2 and 1-3 detached type. Door-to-door distribution was conducted to all target households, and a brief interview survey was also conducted during the visits to understand what problems they had to face in their living environment. Two types of questionnaires, one for households and the other for individuals, were conducted individually to all 60 households, and responses were obtained from 36 households (60%



response rate). The surveyed districts are shown in Figure 3, the questionnaire material for the individual and household questionnaires are shown in Table 1, and the basic attributes of the residents are shown in Table 2.

2.2 Literature review using Natori City Recovery Newsletter to understand the process of Neighborhood Association establishment

A literature survey was conducted by referring to the Natori City Recovery Newsletter (January 2012 to March 2020) published by Natori City in order to organize the trends leading up to the establishment of the neighborhood associations in Yuriage. In addition, in order to supplement the information from the perspective of local residents involved in community development, a survey on participation in the Yuriage Community Development Association (caretaker meeting, general meeting, Yuriage Town Opening Executive Committee, Natori Reconstruction Cultural Festival, and other related events) was conducted between July 2016 and January 2020.

2.3 Interview with stakeholders to understand Neighborhood Association management

An interview survey was conducted in January 2020 with the head of the Yuriage Central Neighborhood Association in order to understand its actual operation, which had already started their activities. In order to confirm the consistency of the textual data obtained from the interviews and to supplement the information on the situation in other areas, face-to-face semi-structured interviews were conducted in January 2020 with one staff member of the Reconstruction and Rezoning Division of the Natori City Disaster Reconstruction Department and one staff member of the Miyagi Reconstruction Collaboration Center.

2.4 SCAT analysis to find current problems on Neighborhood Association management

In order to extract the issues faced by the neighborhood association from the data obtained in 2.3, we conducted an analysis based on an analysis method called SCAT (Steps for Coding and Theorization). This method is suitable for the analysis of a relatively small amount of qualitative data, and since we used text data of one person, we thought it would be an appropriate method since it has explicit and formulaic procedures.

Table 1 – Questionnaire survey questions

Category	Pattern	Questionnaire materials	Pattern	Answer materials	
Overview of residents' statuses	Household	Household composition before and after the disaster	Selection	1.Single,2.Couple,--- 4. Three generation family	
		Age when they started to live in Yuriage		1.-1945,2. 1945- ,--- 6. 1985-2011	
		Address before the disaster		1.1-chome,2.2-chome, --- 8.Koshinduka	
	Personal	Reasons for requesting disaster recovery public housing	Description	Free writing	
		Gender	Selection	1. Male 2. Female	
Age	1. -20,2. 20-29, --- 6.60-				
Changes in living environment	Household	Changes in living environment and its duration	Description	Floor plans, etc.	
		Floor plan of disaster recovery public housing	Selection	1. One-story house, --- 4.Two-story house	
	Personal	Frequency of communication with neighbors	Selection	1. Rarely,2. once a week,---5. every day	
		Specific details of communication with neighbors		1. Greetings, 2. small talk,---4. going out	
		Relationship with prior residents in disaster recovery public housing		1. Yes 2. No	
		Presence of relationship about temporary housing residents		1. Yes 2. No	
Concerns about life of disaster recovery public housing	Description	Free writing			
Way of living in disaster recovery public housing	Personal	Living comfortably	Description	Free writing	
		Purpose of outing and means of transportation	Selection	Purpose:Commuting to work, school, hospital, ... hobbies and entertainment	
		Actual conditions of shopping		Transportation: car, walk, bicycle, --- bus	
		Presence of the community center in Yuriage		Destination: Supermarkets and convenience stores in Natori city,etc.	
		Purpose and frequency of use of Yuriage Community Center		Frequency:Rarely,once a week,--- every day	
	1. Yes 2. No				
Interest in urban development for reconstruction	Household	Awareness of Yuriage Community Development Association	Selection	1. Yes 2. No	
		Cause of awareness about the association		1. Newsletters, --- 6. TV	
		Image of the association		Description	Free writing
	Personal	Presence of interest about the association	Selection	1. Yes 2. No	
		Expectations of the association		Description	Free writing
		The way how to get information about reconstruction		Selection	1.Yuriage Community Development Association, ---7. radio
Facilities to be need as soon as possible in Yuriage	1. Medical facilities, --- 4. park				



Table 2 – Basic Attributes of Residents in Yuriage

Outline	1st time		2nd time		Number of responses	
	Date	Oct. 2016	Date	Feb.- April 2017	Household	35
	Collection/distribution(%)	12/23 Households (52%)	Collection/distribution(%)	24/37 Households (65%)	Personal	63
Overview of residents' attributes	Gender		Age			
	male	(34%)	0-20	(0%)	40-49	(8%)
			20-29	(3%)	50-59	(11%)
	female	(66%)	30-39	(2%)	60-	(76%)
	Household composition (Before the disaster)		Household composition (After the disaster)		Number of changes in living environment	
	Single person	(3%)	Single person	(3%)	2	(18%)
	Couple	(50%)	Couple	(49%)	3	(61%)
	Parent and child	(24%)	Parent and child	(17%)	4	(12%)
	Three generation family	(3%)	Three generation family	(3%)	5	(9%)
	others	(20%)	others	(28%)		
	Age when they started to live in Yuriage		Address before the disaster			
	-1945	(31%)	1-chome	(15%)	6-chome	(32%)
	1945-	(34%)	2-chome	(3%)	7-chome	(15%)
1955-	(11%)	3-chome	(6%)	Koshinduka	(3%)	
1965-	(6%)	4-chome	(18%)	others	(6%)	
1975-	(6%)	5-chome	(3%)	*chome* means town block		
1985-2011	(11%)					
Reasons for requesting disaster recovery public housing			To return to Yuriage, etc.			

3. Questionnaire Survey

In this section, the relationship between changes in the way people live in the disaster recovery public housing and the district community is explained. The process of residents' environmental transition is shown in Figure 4. The final housing style was broadly divided into temporary housing and apartments as emergency housing.

The relationship between new residents and prior residents in the 2017 survey, organized by housing style, is shown in Figure 5. A relationship with a prior resident can be defined as being related by blood, such as family or relatives, or having some kind of acquaintance, even if they are strangers. In temporary housing, about 30% of respondents had a relationship with the previous tenants. In comparison with temporary housing, no relationship was confirmed in the apartments as emergency housing. This may be due to the fact that the residents in the apartments as emergency housing had almost no contact with the residents in the temporary housing. Next, we examined the continuity of the relationship between temporary housing and apartments as emergency housing (Figure 6). The percentage of respondents who answered that the relationship had continued was higher in the temporary housing. However, even among residents of temporary housing, there were opinions that they did not like the continuation of relationships from the time they moved into temporary housing.

For residents moving into the disaster recovery public housing for reconstruction in stages, it was necessary to provide consideration to residents who moved in at different times so they can interact with each other. In addition, there were some who felt uneasy because they had no way of knowing who was living next door.

In the disaster recovery public housing complexes in the early stages of reconstruction, there was an impact on socializing due to the type and duration of evacuation living, and it was assumed that the prolonged living in temporary housing became the basis for living after moving into the disaster recovery public housing. In addition, there was a decline in the awareness of mutual aid and assistance in the process of moving from temporary housing to disaster recovery public housing. Even in this situation, awareness of self-governing association is emerging, and it was confirmed that there were voices that said it would be better to have a self-governing association (neighborhood association) but did not know how to do so. Furthermore, there is a growing need for a place to interact with each other, and there is a need to establish a place where people can talk and consult on a daily life.

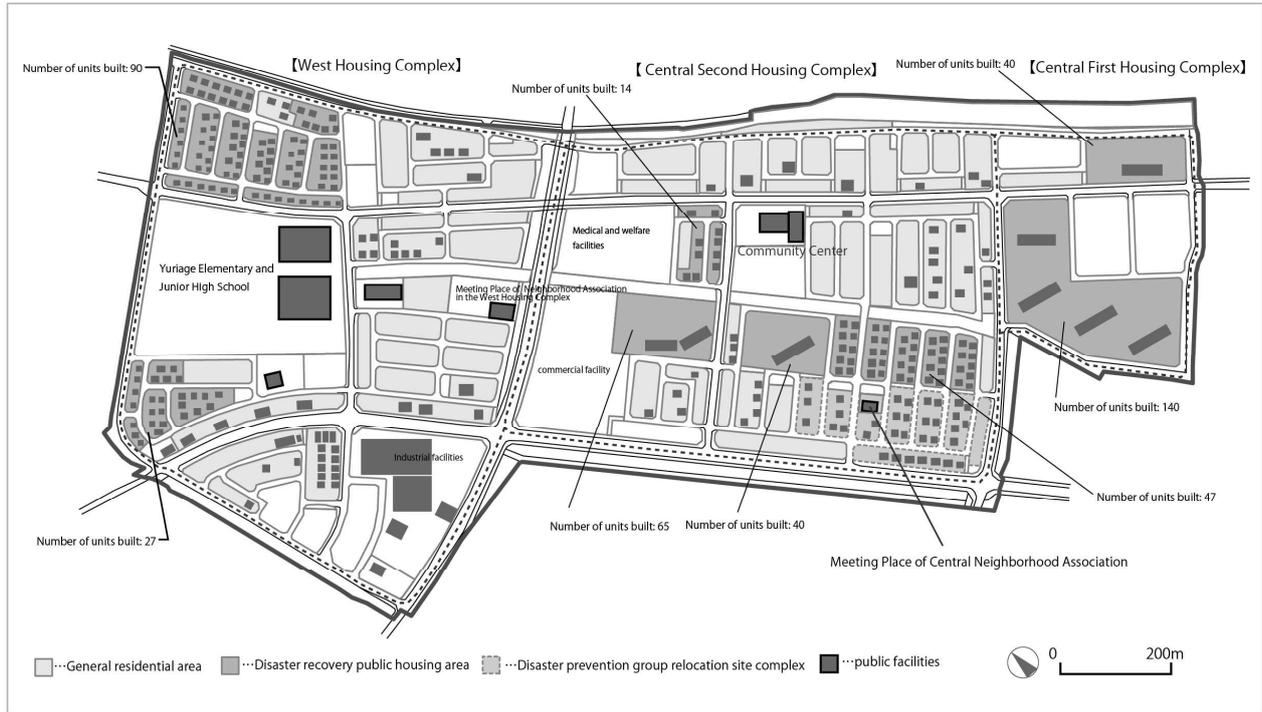


Fig. 3 – Overview of the residential area in Yuriage District, Natori City

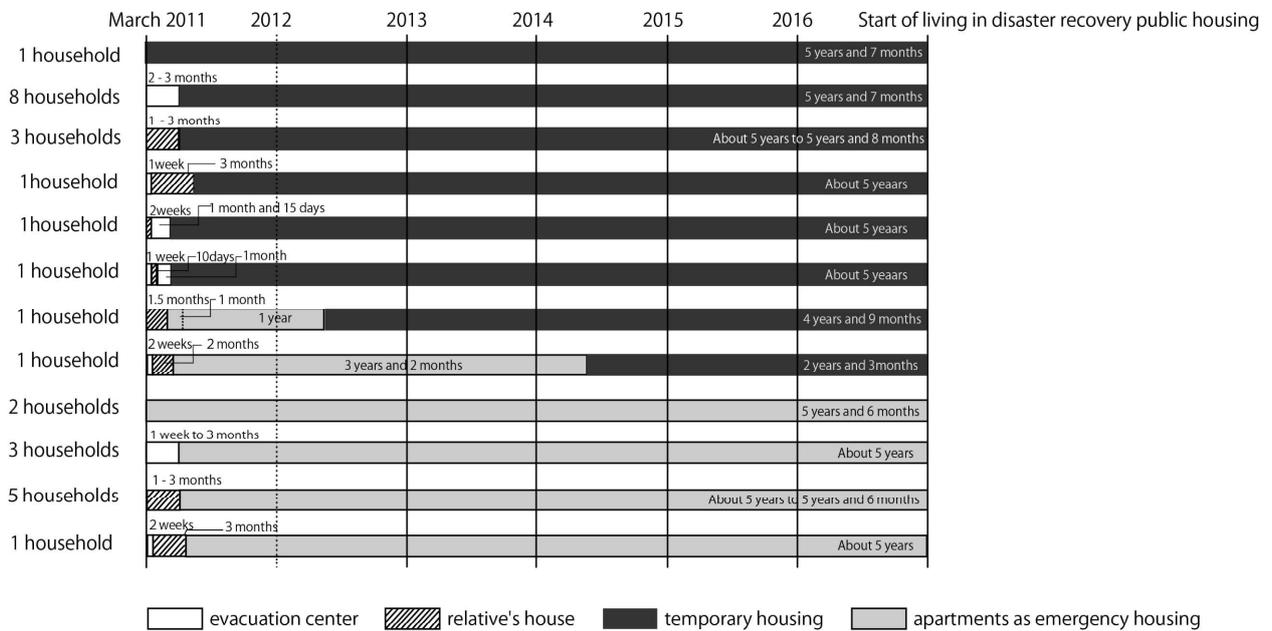


Fig. 4 – Environment changing process

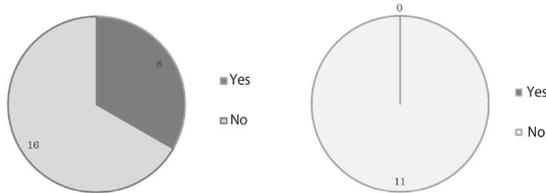


Fig. 5 – Relationship with prior residents in disaster recovery public housing

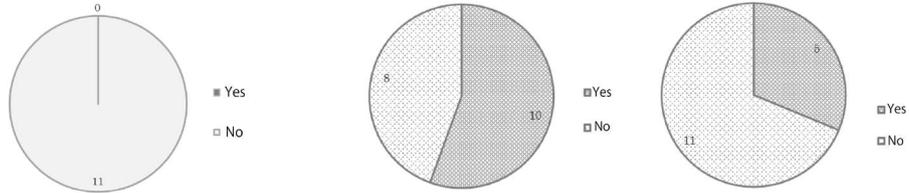


Fig. 6 – Presence of relationship about temporary housing residents

4. Process of Neighborhood Association Establishment based on Natori City Recovery Newsletter

As of January 2021, all the neighborhoods in Yuriage have established their own neighborhood associations: The Neighborhood Association in the West Housing Complex, the Central Management Association in Central first Housing Complex, and the Central Neighborhood Association in Central second Housing Complex (fig.3).

4.1 Kamimachi Neighborhood Association in the Past

The Kamimachi Neighborhood Association was the only neighborhood association in Yuriage area that had continued to exist after the disaster. After the disaster, most of the households were living in temporary housing dispersed in Natori City, so the community was divided into four areas and each area was maintained as much as possible. Later, in order to rebuild the new neighborhood associations in West Housing Complex, the divided communities began to merge.

The association didn't hold any major events since the disaster. One of the reasons for this was that the neighborhood association was divided into four areas and new residents were constantly arriving due to the phased development of the area, making it difficult to keep track of the residents. Therefore, after the earthquake, the president of the neighborhood association was the main person who continued to maintain the framework of the existing neighborhood association. The president has been participating in the salons and soup kitchen training for disaster prevention organized by the government and other support groups, as well as in the Yuriage Community Sports Festival held by the community center. On the other hand, the Yuriage Elementary and Junior High School, which serves as the community hub, was built in 2018 in the west area of the city, giving residents a place to gather and hold events for children and face-to-face meetings.

4.2 Process of the Neighborhood Association re-establishment in the West Housing Complex

The process of establishing a neighborhood association in West Housing Complex is shown in Figure 7. Since the residents started to move into the disaster recovery public housing complexes, Natori City conducted soup kitchen training for disaster prevention in cooperation with the Ties of Yuriage Executive Committee. The president of the Kamimachi Neighborhood Association and the residents of the disaster public housing complexes have been shopping and cooking together. Natori City also held four face-to-face meetings with residents from September 2018 to June 2019. After that, in August 2019, the "Nishi Area Exchange Team" was established by the Reconstruction Department of Natori City and more than 20 local residents to organize events and revitalize exchanges in the area after the Summer Festival held on August 31. When the festival was organized by Natori City, about 40 people participated in the event, but since the launch of the team, the number of participants has exceeded 100, indicating that the event has been well received by the local residents. In April 2020, the Yuriage West Neighborhood Association established, about four years after the first residents moved in June 2016. The Neighborhood Association had 200 households as of April 2020, and Mr. K, the president of the Kamimachi Neighborhood Association, continues to serve as the new association's head.

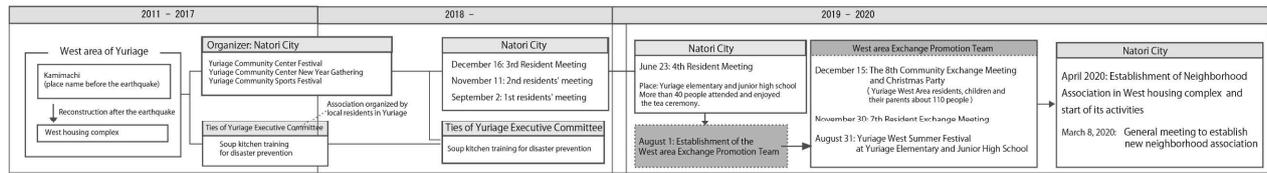


Fig. 7 – Process of the Establishment of Neighborhood Association in the West Housing Complex

5. Interviews and SCAT Analysis

In this chapter, we take a closer look at the statement of Mr. S, the head of Yuriage Central Neighborhood Association.

5.1 Storyline of the Central Housing Complex community

The 30 texts obtained from the interview with Mr. S were analyzed by SCAT to obtain the themes and constructs corresponding to each text.

The 30 texts were grouped into six categories, with topics being:

- (1) The establishment of the Yuriage Central Neighborhood Association
- (2) Utilization of the Meeting Place
- (3) Activities of Voluntary Disaster Prevention Organization
- (4) Problems to maintain Neighborhood Association activities
- (5) Impact of environmental changing process on community formation
- (6) The future of Yuriage

The story line was described according to the aforementioned classification, quoting Mr. S's statement (Table3).

Table 3 – Example of Mr. S's textual analysis

Example of Analysis using Mr. S's textual data					
Textual data	1. Notable words in textual data	2. Rephrasing of words in textual data	3. Paraphrase using words that are not included in textual data	4. Themes and Concepts	Category
<p>Question: Isn't the community divided between those who lived in temporary housing and those who lived in apartments as emergency housing after the disaster?</p> <p>Mr.s: I think that's very important. It's only when I came here that I realized that everyone used to live in Yuriage before the disaster, so if you talk to them, they will understand you, they will understand where you are from, they will understand you. But before that, what they are afraid of the most is the connection they had during the temporary housing period. Because the temporary housing has been there for too long, the community they created during the temporary housing period has become very strong. Even when they want to have a tea party or hold an event at the neighborhood association, they end up having gatherings only with the people from the temporary housing. Then, people who came from temporary housing in other areas with fewer people, or people who were in apartments as emergency housing, could not easily join the circle. This is not to say that it is not possible to build a community in temporary housing, but it is important to think about how to make the most of it when building a new community somewhere else.</p>	<p>He didn't know that until I came here/ His concern was the community in temporary housing/ He thought he lived in temporary housing for too long/ When he was in temporary housing... It was getting really strong./ It's not easy to be a part of a group of people who are only in temporary housing/ Otherwise, the next town planning will be really difficult.</p>	<p>He didn't have a chance to know about it until he himself started living in the reconstruction area/ Prolonged living in temporary housing/ Strengthening of community in temporary housing/ Isolation case/ If it is not taken into account, community building will be hindered</p>	<p>Presence of information depending on when the residence is initiated/ Living in temporary housing for 6-8 years/ Strength of previous communities influence socializing in new residential areas/ Isolation of a few people/ It takes time to establish and then manage a self-governing organization</p>	<p>Influence of different residential environmental changing process on the formation of new communities / Concern about future victims in other disaster in Japan</p>	<p>Creating new communities</p>

5.2 Yuriage Central Neighborhood Association

The Yuriage Central Neighborhood Association (about 300 households as of January 2020), the first neighborhood association in Yuriage after the earthquake, was established on March 9, 2019. Mr. S, the first president of the association, is a native of Yuriage and had been living in Yuriage before the disaster. He



experienced at least two environmental transitions, spending six and a half years in the Medeshima East Temporary Housing Complex before rebuilding himself in the Central second Housing Complex.

5.3 Process of the Central Neighborhood Association establishment

The process of establishing the neighborhood association is shown in Table 4. In order to establish a neighborhood association in the Yuriage Central Second Complex, Natori City first held a meeting for exchanging opinions to understand the awareness of the residents and to find people who could take charge of community activities. Next, the city held a workshop for the meeting place at the same time and informed the residents that they would have to manage and operate the center. Mr. S was also the president of the volunteer association. The reason for the establishment of the neighborhood association was that they needed to secure financial resources to carry out activities such as exchange meetings in the community, and in order to receive grants. To create an opportunity for strangers to interact with each other, the volunteer group held several tea parties. The number of participants gradually increased from about 18 households at first, and the scope of activities gradually expanded. The number of participants increased with each meeting. In April 2019, the new meeting place was built and put into use as the base of the neighborhood association.

Table 4 – Process of the Central Neighborhood Association establishment

Date	Activities	Organizer
7.29.2017	Meeting to exchange opinions on the establishment of a new community	Natori City
8.19	Meeting to exchange opinions on the establishment of a new community	Natori City
9.2	Meeting to exchange opinions on the establishment of a new community	Natori City
10.27	Explanation of the construction of the new meeting place	Natori City
11.11	The 1st Resident's Face-to-Face Exchange Meeting	Natori City
11.28	Meeting to exchange opinions on the establishment of a new community	Natori City
1.10.2018	Meeting to exchange opinions on the establishment of a new community	Natori City
2.23	Meeting to exchange opinions on the establishment of a new community	Natori City
3.7	Meeting to exchange opinions on the establishment of a new community	Natori City
3.27	Meeting to exchange opinions on the establishment of a new community	Natori City
4.15	The 3rd Resident's Face-to-Face Exchange Meeting	Natori City
5.11	Establishment of volunteer association	Natori City and volunteer association
5.14	Applying for grants for community development	Natori City and volunteer association
6.16	The 4th Resident's Face-to-Face Exchange Meeting	Natori City
6.29	The 2nd meeting of the Residents' Volunteer Association	Volunteer association
7.9	The 1st tea party	Volunteer association
7.20	The 3rd meeting of the Residents' Volunteer Association	Volunteer association
7.27	Meeting of the Residents' Volunteer Association (only council member)	Volunteer association
8.25	The 5th Resident's Face-to-Face Exchange Meeting and Summer festival	Natori City
9.7	The 4th meeting of the Residents' Volunteer Association	Volunteer association
9.21	The 5th meeting of the Residents' Volunteer Association	Volunteer association
9.29	The 6th Resident's Face-to-Face Exchange Meeting	Natori City and volunteer association
10.6	Piano dedication ceremony	Natori City and volunteer association
10.9	The 6th meeting of the Residents' Volunteer Association	Volunteer association
10.18	after-party by residents	Natori City and volunteer association
10.29	The 7th meeting of the Residents' Volunteer Association	Volunteer association
11.9	Conducting surveys of local residents	Volunteer association
11.10	The 7th Resident's Face-to-Face Exchange Meeting	Natori City
11.14	The 8th meeting of the Residents' Volunteer Association	Volunteer association
11.18	Gathering between residents and students	Natori City
11.22	Reception by local residents	Natori City
12.6	The 9th meeting of the Residents' Volunteer Association	Volunteer association
12.8	Ceremony to hand over the keys to 65 disaster recovery public housing	Natori City
12.18	The 10th meeting of the Residents' Volunteer Association	Volunteer association
12.22	The 8th Resident's Face-to-Face Exchange Meeting	Natori City
1.11.2019	The 11th meeting of the Residents' Volunteer Association	Volunteer association
1.25	The 9th Resident's Face-to-Face Exchange Meeting	Natori City
3.9	Establishment of Central Neighborhood Association	Natori City

5.3.1 Utilization of the Meeting Place

The Yuriage Central Neighborhood Association operates the meeting place. The average number of events per month from April to October is seven. In addition to the monthly use of the meeting place by external support groups such as local social welfare council, it is also actively used by local residents for cherry blossom viewing, walks, movie watching, and other events. Moreover, a monthly schedule of events is prepared by the neighborhood association, and flyers are distributed to each household. This kind of detailed information



sharing, unique to the community, has been successful in encouraging households that tend to stay at home to participate.

5.3.2 Activities of Voluntary Disaster Prevention Organization

Mr. S is also the president of the organization and has conducted one disaster drill in the neighborhood association. The organization chart is shown in Figure 8.

Mr. S did not know that the voluntary disaster prevention organization was positioned in the neighborhood association, and he also did not know what the voluntary disaster prevention organization itself was. Currently, the officers of the neighborhood association have been working together for about half a year to deepen their ideas and cooperate with the Disaster Prevention and Safety Division of Natori City, and as of January 2020, the organization chart, rules, and list of officers have been completed.

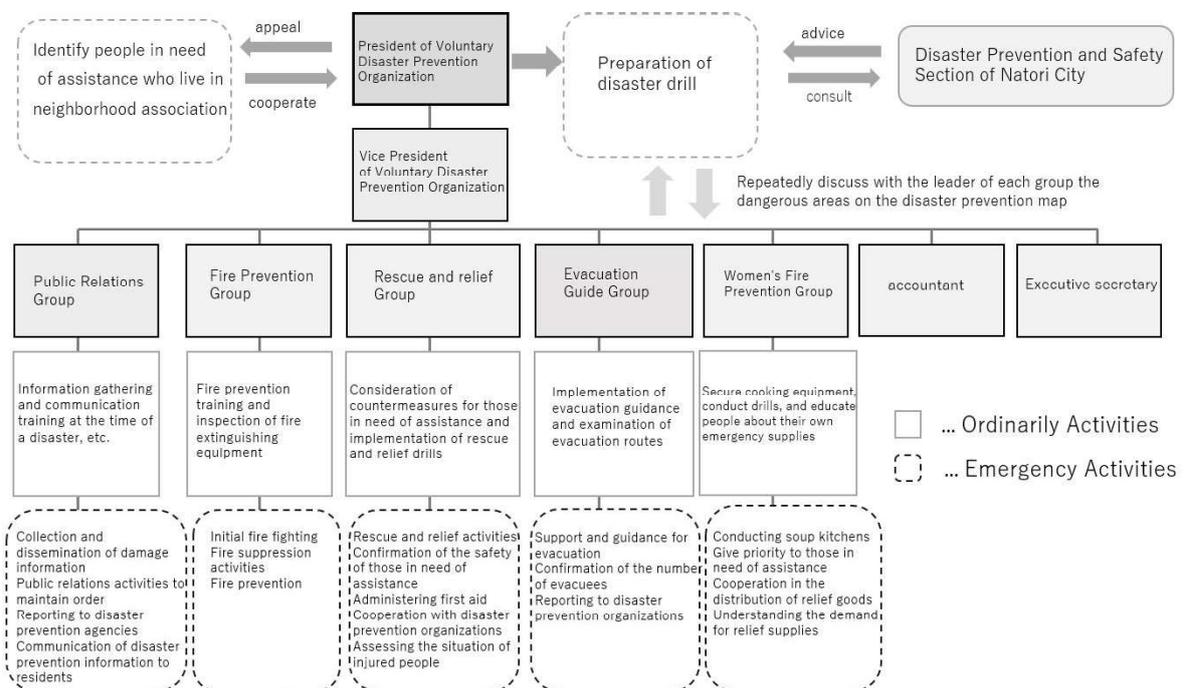


Fig. 8 –Map of voluntary disaster prevention organization in Yuriage Central Neighborhood Association

5.3.3 Problems to maintain Neighborhood Association activities

The president of the neighborhood association himself had been living in temporary housing for six and a half years, and it was only when he came to the area where local reconstruction was taking place that he experienced the gap in perception of community due to the difference in environment changing process between temporary housing and apartments as emergency housing. The residents of the Central Neighborhood Association, despite their differences in the environmental transition process, were originally from the same area before the disaster, so it is possible for them to get to know each other by talking about their experiences. However, since the residents have been living in temporary housing for a long time, the communities and connections formed during their stay in temporary housings are very strong, making it difficult to create new communities.

As of January 2020, this tendency still remained, and it is thought that it will affect the management of the neighborhood association in the future, so it is an issue that needs to be resolved as soon as possible. It is desirable that the meeting place itself is used by local residents, however Mr. S pointed out a problem here: there is no professional resident staff at the meeting place. In the case of temporary housing complexes, there was always a secretariat and professional staff at the meeting place to provide smooth support to the residents. It also served as a link between outside support groups and the disaster victims. The Central Neighborhood



Association is located in Yuriage, a newly developed area of the city (not in a normal residential area), which makes it easier to connect with various organizations. At the same time, the head of the neighborhood association handles most of the administrative procedures, interviews, and meetings. The head of the neighborhood association is self-employed, and the ratio of his work to that of the neighborhood association is 3:7. One of the reasons for this is that there are many elderly people living in the district, and inevitably, many of them are not used to using computers or e-mail to communicate, making it difficult to find someone to take on the role. In addition, the head of the neighborhood association has strong connections with various support groups and organizations during the time he or she lives in the temporary housing, and plays a key role as a contact person with outside groups. It would be undesirable if the frequency of use of the meeting place decreases due to the loss of connections with other organizations when the chairperson is replaced, and there is also a limit to the extent to which the government can respond.

5.3.4 Impact of environmental changing process on community formation

Yuriage Central Second Complex is a mixed district with detached disaster recovery public housing and self-built housing. Therefore, it is possible that there are more types of environmental changing processes that each local resident has, or that there is a bias. In addition, as mentioned in the questionnaire survey in Chapter 3, it was known that whether the residents had moved into temporary housing or apartments as emergency housing just before moving into the disaster recovery public housing was a major turning point in the environmental changing process. Additionally, this interview survey confirmed that it was actually an obstacle to forming a new community.

The head of the neighborhood association himself had been living in temporary housing for six and a half years, and it was only when he came to the area where local reconstruction was taking place that he experienced the gap in perception of community due to the difference in living history between temporary housing and apartments as emergency housing. The residents of the Central Neighborhood Association, despite their differences in the environmental transition process, were originally from the same area before the disaster, so it is possible for them to get to know each other by talking about their experiences. However, since the residents have been living in temporary housing for a long time, the communities and connections formed during their stay in the temporary housing complex are very strong, making it difficult to create new communities. As of January 2020, this tendency still remains, and it is thought that it will affect the neighborhood management association in the future, so it is an issue that needs to be resolved as soon as possible.

6. Conclusion

This study clarified the community issues just after moving into the disaster recovery public housing in Yuriage, and the process of establishing the neighborhood association and its operational issues. On the other hand, the differences in victim's environment changing due to the prolonged evacuation hindered the formation of new communities. If there is a concern about prolonged evacuation in Japan due to some kind of disaster in the future, it is necessary to pay attention to this issue in advance and to take measures to prevent the original community from dispersing or to consolidate the dispersed communities.

In addition, the Yuriage Central Neighborhood Association, which is very active due to the characteristics of its president who is the key person, needs to have its own support staff to help the many local residents who are not accustomed to the operation of a community organization. Furthermore, since only the president of the Central Neighborhood Association was interviewed in this study, it is necessary to survey the actual operation of the other two neighborhood associations in the district in the future.

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