論　文

Rebuilding Communities Following the Great East Japan Disaster:
Restoration of Ties among the Victims

Morio ONDA

1. Introduction

The earthquake and tsunami that struck northeastern Japan on March 11, 2011 not only caused extensive direct damage to local residents and their property, but also triggered a nuclear power plant accident bringing the terror and reality of radiation to the surrounding populace and beyond. The reconstruction of communities in Iwate, Miyagi and Fukushima Prefectures has posed enormous problems. While communities affected only by the earthquake and tsunami can perhaps be rebuilt physically and socially, it will be very difficult for people in the radiation-contaminated areas in Fukushima to restore their lives in their former locations.

The social bonds among both groups of sufferers have changed. Though some people have already redeveloped ties in the quake-tsunami only areas, others, especially those whose houses were not destroyed by the tsunami, have hesitated to communicate with less fortunate neighbors because of "survivors guilt" (Onda, 2013a). In Fukushima, the additional nuclear disaster inflicted quite another kind of damage on people. It was not only physical, but also more mental. Many people who fled the radioactivity had to evacuate to areas dispersed far and wide throughout Japan, weakening or even eliminating ties from their original communities. Further, the longer refugees have been living in temporary housing, the more they tend to rely on both public help and volunteers' help. They have been losing the intention of living new lives or rebuilding their communities. The refugees are losing hope and confidence in their governments. Because, in spite of having directly heard the concerns of the displaced through both public meetings and surveys, central and local governments have done little or nothing to alleviate refugees' social problems

to date.

This paper focuses on refugees forced to evacuate due to the danger of radiation and were still living in temporary housing 3 years later. The questionnaire was centered on community consciousness of refugees from the viewpoint of mutual help networks (Onda, 2006:2013b). Community consciousness before and after the disaster is explored. Representatives of those in temporary housing and administrators of the town were polled in a separate survey. In addition to discussing these conflicts in communities arising from the disaster, the research also explores the possibilities of rebuilding, focusing on how to cope with the "social demise of communities" that local people had formed and occupied all their lives. Finally, problems of community ties between refugee newcomers and longtime residents were posed and solutions were suggested.

2 . Methods

The study objective was to elucidate the transformation of mutual help networks in stricken communities in order to suggest new strategies for rebuilding communities following the enormous combined disasters (Giuffre, 2013). The data were gathered through questionnaires and in-depth interview surveys of the victims forcibly evacuated due to the danger of radiation. The questionnaires were conducted in March, 2014 in temporary houses where people from Namie Town fled from contaminated areas in Fukushima Prefecture and have been living. The interviewees were chosen as representatives among the victims and administrative staff of Namie Town. Selection was difficult because many refugees were not cooperative. Because many previous surveys conducted by different levels of government since the disaster resulted in little or no positive action by the authorities. Victims' attitudes often change according to the length of residence in supposedly temporary shelters, so the timing of surveys is an important factor in conducting disaster research (Bourque., Shoaf and Nguyen, 1997; Rodríguez, Quarantelli and Dynes, 2006; Rodríguez, Quarantelli, and Dynes, 2006). Disaster recovery can be divided into four overlapping stages: the emergency period, the restoration period, the replacement reconstruction period, and the commemorative, betterment and development reconstruction period (Haas, Kates, and Bowden, 1977; Ingram et al., 2006; Lizarralde, Johnson and Davidson, 2009; Tatsuki, 2007). This study covers the last two stages.

Eighty % of refugees were people over the age of 60 who were also unemployed.

The population of Namie Town is approximately 19,000 (2015). By the end of May, 2015 there were 14,574 refugees living in Fukushima Prefecture and 4,000 outside it. The central government has divided the contaminated area into three zone: the first where residents will have difficulty in returning home for a long time, the second where residents are not yet permitted to live, and the third where evacuation orders are ready to be lifted. The paper includes the results of 83 post disaster questionnaires of victims shown in Table 1. The methodological goal was to create a subset (the sample) from a larger set (the population) that was representative of the voices of the interviewees as a whole. The author also conducted in-depth interviews of two victims dislocated by radiation emission (Rubin and Rubin, 2005). Furthermore two staffs of central government were interviewed to represent administrative voices. The foci of the questionnaires were the practices of mutual help and community consciousness before and after the disaster (Knoke and Kuklinski, 1982). These answers were statistically analyzed by PC using multivariate analysis. The foci of the interviews supplementary to the questionnaires were the practices of communal help in the temporary houses and administrative policy to the refugees. The responses by hand-written notes were analyzed intensively according to purposeful categorization (Rubin and Rubin, 2005; Flick, 2014).

The first research was conducted surveying the following items: associations in daily life outside the family, people to consult about trouble in living, residents' consciousness of mutual help, attitude toward individuals in trouble, and mutual help in the future. In addition to these questionnaires, the following items were asked: conditions of community restoration (from the moment of displacement up to the survey), reasons of restorative stagnation, intention of returning to hometown, who would restore the community, and the future of hometowns. The interviews were conducted in July, 2015, after the questionnaire survey covering the following items: the conditions of temporary housing life (the changes and similarities from the beginning of displacement until the interview), bonds among the victims and connection to local residents in the new locations, public regional planning and possibilities of restoring communities.

Table 1 : Respondent Demographics

Gender Number	Male	Female								Total
	43	40								83

Age Number	20	30	40	50	60	70	80	Unknown		Total
	0	0	4	12	30	23	13	1		83

Area Number	Namie	Ikuyobashi	Uketo	Oobori	Karino	Tsushima	Other	Unknown		Total
	38	4	3	9	10	11	7	1		83

profession Number	Agiriculture	Self-employed	Employee	Public servant	Profession	Housewife	Temporary work	No occupation	Other	Unknown	Total
	10	16	10	1	0	2	6	36	0	2	83

Annual Income Per ¥1,000 Number	1,000 less than	1,000~2,000 less than	2,000~4,000 less than	4,000~6,000 less than	6,000~8,000 less than	8,000~10,000 less than	10,000~15,000 less than	15,000~20,000 less than	20,000 than	Unknown	Total
	24	17	20	4	0	1	0	0	0	17	83

Education Number	Elementary school	Junior High School	High School	Coolege or University	Graduate School	Other	Unknown		Total
	4	11	49	4	0	5	10		83

3．Mutual help networks as a measure of community consciousness before and after the disaster

3．1　Questionnaire survey: Community consciousness before and after the disaster

The result of the survey is as follows. Near 40 % of the refugees associated with daily were neighborhood followed by relatives excluding nuclear family. There were 17.5 % of refugees who had not been acquainted compared to only 4.8 % before the disaster (Chart 1) which is a reflection of feelings of isolation in the temporary houses. Over 70 % of the refugees consulted with their family when they were confronted with any trouble compared to 65 % before the disaster (Chart 2). The higher education the refugees had attained, the more intensive mutual help became as revealed by cross analysis. People who have less education are less apt to return thanks when they were helped by somebody. Nearly 40% of the refugees indicated that ties between local people became weaker than before the disaster. Some people complained that privacy was not protected in the temporary houses, they were not acquainted with residents, and their pre-disaster neighborhood were compelled to be scattered. One refugee respondent said that she had simply decided not to connect with people living in the temporary houses. Some people suffered from "the disease of no vital intention" that they would not live their lives by staying in houses and weakened mental and physical conditions. The collapse of community clearly resulted in heightened stress among the refugees.

	Neighborhood	Relative	Person in area	Business Associates	Other	None
Pre-disaster	39.6	27.7	14.5	10.8	2.4	4.8
Post-disaster	38.8	22.5	10	2.5	8.8	17.5
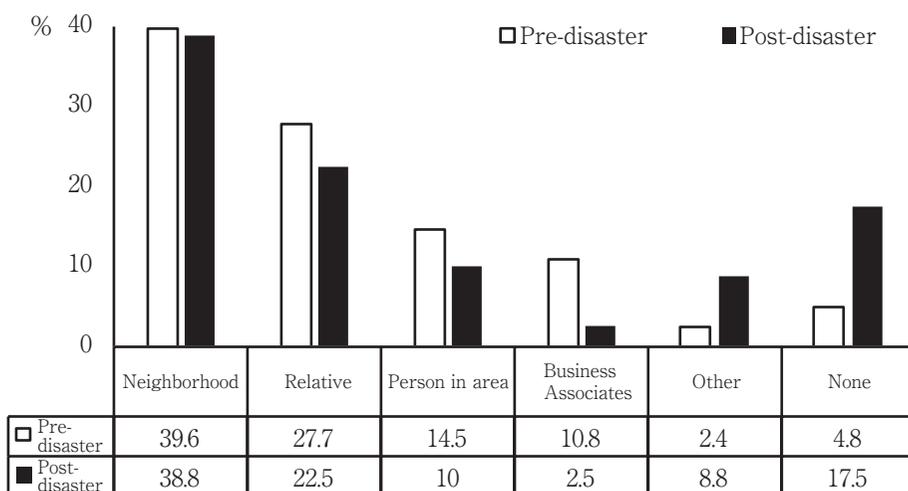
Chart 1 : Daily Life Associations Outside the Nuclear Family

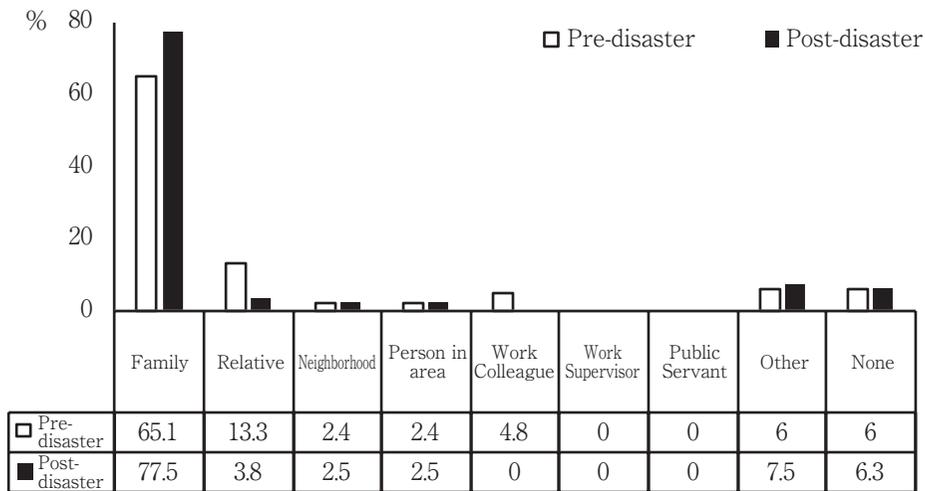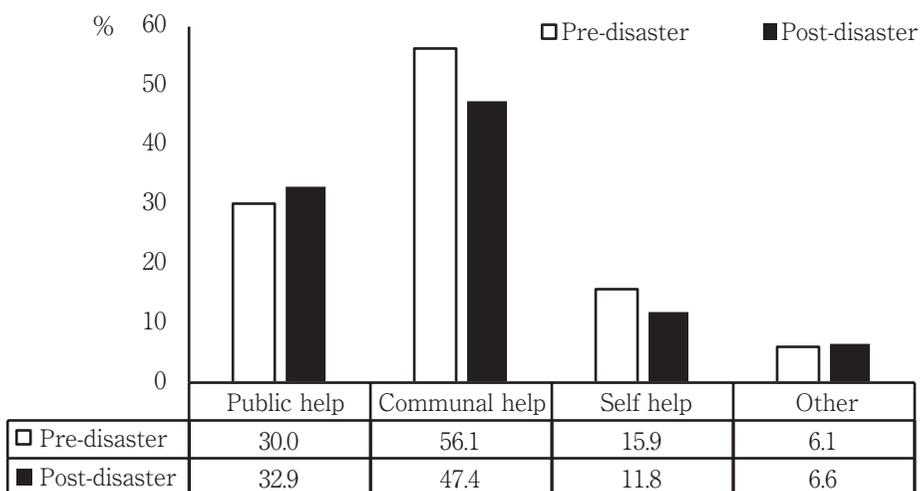|	Family	Relative	Neighborhood	Person in area	Work Colleague	Work Supervisor	Public Servant	Other	None
☐ Pre-disaster	65.1	13.3	2.4	2.4	4.8	0	0	6	6
■ Post-disaster	77.5	3.8	2.5	2.5	0	0	0	7.5	6.3

Chart 2 : Persons consulted in times of trouble

After the disaster, on the issue of helping other people, the refugee agreement rate to participating in communal help was 47.4% and public help was 32.9% (Chart 3). Respondents reported that, before the disaster, they had participated in at a rate of 56.1% and public help at 30%. The rate of people who helped others when they could do so mentally and economically was 46.7% after with 57.8% before the disaster (Chart 4). The refugees had become preoccupied with their own lives and could not afford to pay attention to other lives. Over the half of the refugees forecast that mutual help
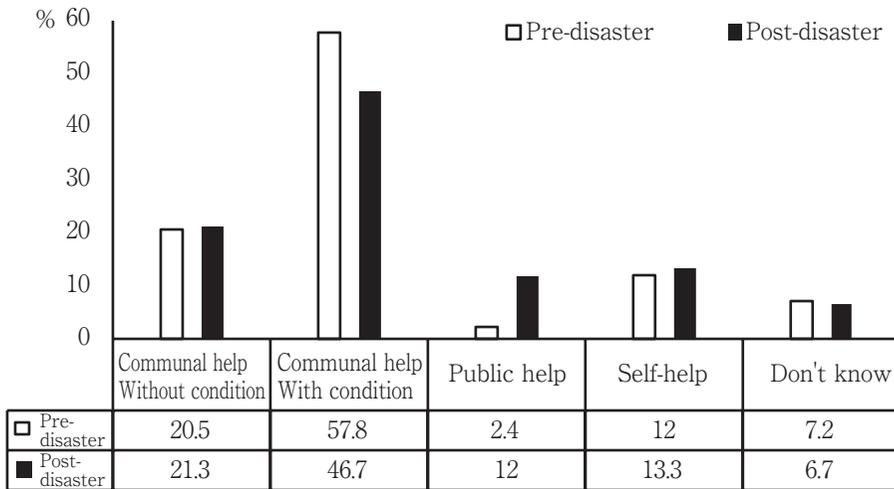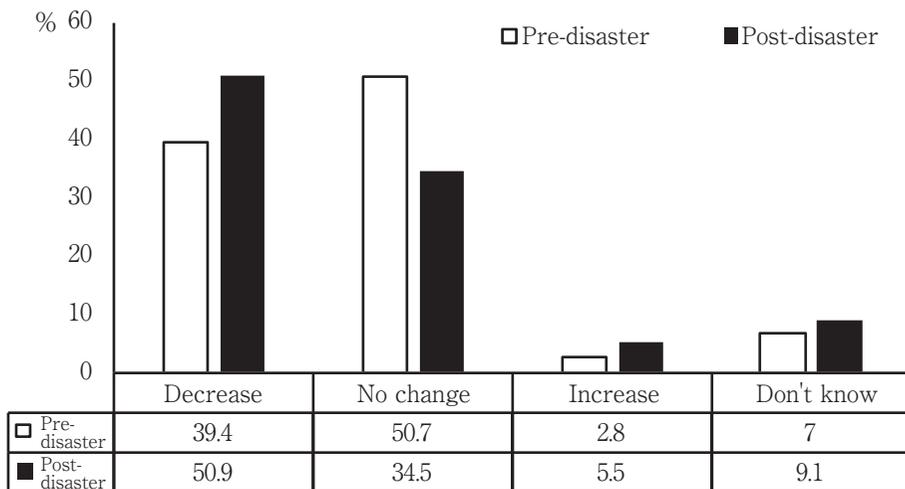
	Public help	Communal help	Self help	Other
☐ Pre-disaster	30.0	56.1	15.9	6.1
■ Post-disaster	32.9	47.4	11.8	6.6

Chat 3 : Consciousness of mutual help

	Communal help Without condition	Communal help With condition	Public help	Self-help	Don't know
☐ Pre-disaster	20.5	57.8	2.4	12	7.2
■ Post-disaster	21.3	46.7	12	13.3	6.7

Chart 4 : Attitudes of a person in trouble

	Decrease	No change	Increase	Don't know
☐ Pre-disaster	39.4	50.7	2.8	7
■ Post-disaster	50.9	34.5	5.5	9.1

Chat 5 : Mutual help in the future

would decrease in the future compared to 39.4% before the disaster (Chart 5). The hypothesis that mutual help would increase after the disaster does not apply to the residents of areas contaminated by radioactivity. After the disaster residents were compelled to relocate and live separately. Therefore the chance of reestablishing mutual help networks among residents from Namie Town had been lost.

3.2   Questionnaire survey: Factors influencing reconstruction of communities

The options about the reconstruction of communities were sought with following

results. Over 80% of refugees answered the recovery was bad. The worst content was the contamination of nuclear accident. The next was housing, the third relocation of family, and the forth compensation of the accident. The cause of the stagnation was attributed to the insufficient action of the central government by over 70% of refugees. The next was the prefectural government and the third the town government. Analyzing through Hayashi's quantification methods Ⅲ, organizational activity of residents was extracted as the component 1, regulation of administration as the component 2, and lack of reaction by the administration as the component 3. Therefore it is important for residents to reinforce activity of organization more strongly and for the central and local administrations to react for the refugees sincerely deregulating procedures of the compensation for the accident by communication with the refugees deliberately. Furthermore using structural equation modeling (SEM) on the condition that the explaining factor is the three above described and the explained factor is the unsatisfaction with the present condition of recovery (Hoyle, 2012), the result is that lack of reaction by the administration was the most influential factor to determine for the worse condition of reconstructing communities, the second regulation of administration, and the third organizational activity of residents according to absolute values of the equation (Chart 6).

The intention to return to hometown was 24.7% of the respondents, 40% of the refugees cannot decide whether to do so, and people who did not intend to go back was 35.1%. The longer they live in temporary houses, the less intention to return to hometown becomes. Vis-à-vis the intention to live in a temporary community where residents can use public housing, medical, nursing-care, and education services, the number of people who could not decide to do so reached nearly half (47.9%). Living in public housing was expressed by 30.1% and not to do so was by 13.7%. Many felt at a loss living there. 36.4% of the refugees felt a weaker sense of community through relocating. They were afraid that their original landscape was definitely changed by the atomic accident because no one could live there now. 15% of the refugees hoped that a new consciousness would be born in their resettled environments. Some expressed such pessimistic opinions as; they had suffered from the accident even though there were no nuclear power plant in Namie Town, that only elderly people would live there if it were possible to go back, that their town would disappear in the future, that houses could not be suitable for living because there were many rats in the houses, and that there was no certainty of ever returning home.

0.00
1

Dissatisfaction with the present condition of recovery

1 → Present condition of recovery ← 1   0.48

-0.17

Organizational activity of residents — 0.34

1   Activity of residents' association ← 1   0.57
0.83   Residents' association ← 1   0.31
0.94   Reduction in sense of solidarity ← 1   0.11
0.65   Lack of sense of impending crisis ← 1   0.58

0.38

0.91

Regulation by administration — 0.03

1   Activity of residents' association ← 1   0.57
0.91   Regulation of administration ← 1   0.16
0.59   Lack of communication ← 1   0.65

Lack of reaction by the combined administrations — 0.00

1   Activity of residents' association ← 1   0.57
0.55   Lack of reaction by central administration ← 1   0.70
0.89   Lack of reaction by prefectural administration ← 1   0.20
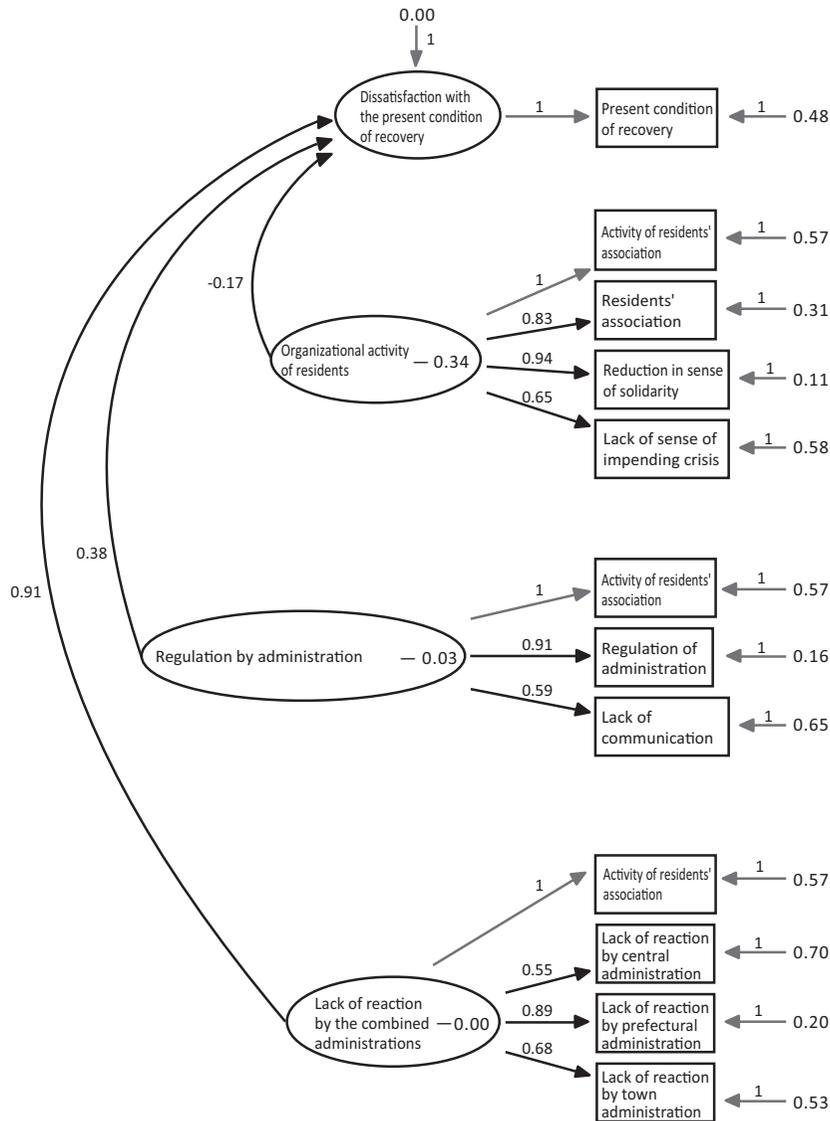0.68   Lack of reaction by town administration ← 1   0.53

Chart 6 : Stagnation factors of recovery by structural equation modeling

3.3　Some voices through interview survey

A former president of the residents' association in the refugee location also said that the reason why the refugees would not answer questions was that they felt none of the many research surveys turned out to be fruitful for them. Despite this, central and local governments should listen to the voices of refugees through surveys (Bourque, Shoaf, and Nguyen, 1997; Quarantelli, 1999). Putting people at the center of a disaster

and development should be emphasized by the governments (Collins, 2009). The official added that there were weak ties in temporary houses because they did not always live according to their former neighbor's unit, and not only material support but also mental rebuilding, including social relations with other residents was important for the refugees. The refugees have tended to rely on public help and the outside help of volunteers more and more since the disaster. The former president suggested that volunteers should not think it a good idea to help the refugees too much, lest their actions serve to undermine refugees' former sense of self-reliance. He insisted that local government should not be unduly influenced by either the central government's or the Tokyo Electric Power Company's views of the situation, but form their own perspective and support their constituents accordingly.

　The acting president of the resident's association (formerly its vice-president) said that residents were naturally expected to be acquainted with their neighbors in the former town, but their refugee housing neighbors were strangers. He added that some people hoped to restore and reconstruct their regional town in the future, but many people were discouraged at present conditions. Most people who were enthusiastic about rebuilding communities had left the refuge. There is a gulf between longtime residents and newcomers from Name Town. The longtime residents of a town where newcomers came from Namie Town complained of unfair about the compensation to the sufferers for damages by the nuclear power accident. Feelings of unfairness are prevalent also among the refugees from even the same town. When a refugee newcomer, according to Japanese custom, greeted and gave towels to longtime residents as a token of arrival to a new town, the towels were silently return to front of the door of the newcomer's house the next day. After another newcomer chucked out rubbish at a garbage designated neighborhood disposal site, it was not collected, but placed by neighbors at the gate of his house the next day. Another newcomer found the words "Get Out" scribbled on his car. Local people felt that their hospitals, city halls and supermarkets were overburdened because of the arrival of refugees.

　Such harassment was not limited to Fukushima Prefecture, but found in other places as far away as Tokyo hosting the disaster refugees. A sign saying "Go back" was hung on one refugee's door, and a note saying "Go back" was put into the postbox of another. Yet another found the air let out of a tire on his car. Local gossips suggested that refugees were using large shopping bags in the supermarket because they were getting such generous funding from both public and private sources. Unfortunately there has been no channel of communication between newcomers and

longtime residents, leaving them isolated in their new locations.

4. Rebuilding communities through unity and trust

4.1　Cohesion of communities

There are big problems of coordination between newcomers from Namie Town and long established residents in Iwaki City of Fukushima Prefecture. Because of the influx of refugees who can afford to build new houses from the compensation received from disaster-ruined property, land prices have risen. Established residents have been claiming that the refugees are careless, negligent, and ignorant of how to live with neighbors and even regard them as dangerous to have in the community and have been apt to harass the newcomers in ways previously described. This behavior has been likened to witchcraft, a convenient finger to point at the newcomers from Namie town in hopes they would somehow disappear (Giuffre, 2013, pp.109-140). This might be said "a modern-day witch-hunt." The result has been a significant weakening of community cohesion. Cooperation and harmony are important in a community whether people are longtime residents or newly settled. The development of social movements aimed at integrating the changing community is necessary to unite and build trust between members of both groups.

The refugees from the nuclear accident should not forget hometown's identity based on society and culture (Boen and Jigyasu, 2005). However, it might be realistic that they make ties in new towns. Group solidarity is important (Hechter, 1987). It makes collective or community power (Olson, 1965). Community ties as social networks should be built among all kind of residents (Crow, 2004), which accumulates social capital (Coleman, 1990; Woolcock. and Narayan, 2000; Nakagawa and Shaw, 2004; Bridger and Alter, 2006; Hawkins, and Maurer, 2009.), especially among the newcomers, slowly giving them community power. (Etzioni, 1996; Putnam, 2000). It is necessary to unite all residents through improved communication and activities of small groups.

The bond among residents should contribute to reduce the uncertainty of the future and the sorrow of the losses from the disaster. Furthermore the bond between separated refugees is necessary for maintaining consciousness of home town. It results in maintaining community cohesion (Haas, Kates and Bowden, 1977; Forrest and Kearns, 2001; Moody and White, 2003). Volunteers of NPOs could intermediate between longtime residents and newcomers as catalysts. Although such volunteers' ties with the communities they are helping may be weak, they can play

a role connecting the links among the residents who relocated anywhere in Japan (Granovetter, 1975; Burt, 1992). It would be preferable that these connections should be revived and maintained by the refugee themselves. Because only they can truly share their sorrows better than anyone. Ties to others, social networks, play an important role in shaping residents' identities (Giuffre, 2013, pp.141-175). The first step is to give the newcomers the chance building a community through participation in small groups together with established residents. This can be the start of a critical renewed community resilience (Aldrich, 2009: 2012; Berke, Kartez and Wenger, 1993).

4 . 2　Government Action

The local governments have been struggling to reconstruct communities for the refugees. An official of Namie Town said that staffs for reconstructing communities were engaged in refugee mental care protecting elderly people who have been living alone outside the prefecture by The Ministry of Internal Affairs and Communications. The communicators, who are selected from established residents, are trying to bridge the gaps between refugees and longtime residents in Fukushima Prefecture via the Reconstruction Agency. They who are called "ties staff" have been playing a role of catalyst for both interaction among newcomers and between newcomers and longtime residents, aiming to strengthen the power of mutual help and to maintain their merging communities. However, the outcome of the mediation remains in doubt. He said that the most important task was to remove uncertainty about the future among the refugees and create a roadmap for restoring sustainable communities by clarifying the data of recovery indicators and the information about the procedure (Berke, Karte and Wenger, 1993; Monday, 2001; Beniya, 2007).

Another official of Namie Town also said that staffs for reconstructing communities in Fukushima Prefecture were engaged in mental care of the refugees. The local government has been posting notices to the refugees about the plans for restoring communities. The residential units awarded in public permanent housing should be based on residential units existing in previous housing destroyed by the disaster. This is difficult for the government to accomplish because officials cannot simply reject other candidates who are also eager to live in permanent public houses.

Central and local governments have been accelerating the pace of uniting communities where refugees have relocated. As noted above, the Ministry of Internal Affairs and Communications has named supporters for rebuilding communities inside and outside of Fukushima Prefecture, the Reconstruction Agency staffs for community

interaction in Fukushima Prefecture, and Fukushima Prefecture consultant for supporting life. They continue to act positively hearing the voices of refugees for the long-term planning (Alesch, Arendt and Holly, 2009). According to the questionnaire survey, 27.6 % of refugees said that the central government should be the agent of reconstruction while 23.8% thought the town should be responsible, and 10.3% believed the prefecture should do it. All the respondents felt that public help was indispensable for reconstructing communities.

4.3 Self-help by residents

The refugees should take care not to become too dependent on outside volunteer support. Similarly, volunteers must take care not to feed their own egos by unconsciously pushing refugees to accept their support. In order to rebuild a community, self-reliance is also important. The refugees have to do the necessary daily tasks, such as refuse removal, by themselves. The support should lead to reenergizing the capabilities of the refugees (Gardoni, and Murphy, 2008). Communal help creates self-help of the residents (MacIver, 1917; Delanty, 2003). Strong self-help among residents includes the norm of reciprocity (Gouldner, 1960; Sugden, 1984). Rebuilding self-help in a regional society could pressure the governments and community power structures to spur government action. While planning of reconstruction involves longtime residents, refugees should participate in planning as best they can (Abbott, 1995, Kweit and Kweit, 2004; Ganapati and Ganapati, 2009). Superficial design of communities as outer layer by the central and local government is not sufficient. It is important for local people to take full advantage of mutual help networks as spontaneous social order in deep layer for rebuilding sustainable communities (Chart 7).
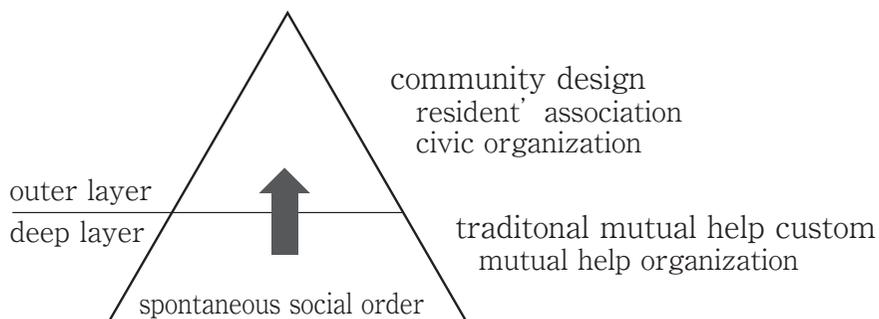

Chart 7 : Rebuilding sustainable community

5 . Conclusions

The proposition that bonds become stronger in stricken areas after disaster does not always apply. As a result of these enormous disasters in this case bonds fluctuated and collapsed. The interview survey of the refugees a half year and one year after the 2011 events disaster confirmed the weak ties among refugees (Onda, 2013a). The ideal of a regional plan is a region of the residents, by the residents, and for the residents. Judging from survey results, central and local governments do not successfully reconstruct communities. Residents from Namie Town are dissatisfied with government efforts and uncertain future. Reconstruction communities through the policy of permanent housing for the refugees is most urgent (Oliver-Smith, 1990:1991). Rebuilding a community is not reformation but restoration (Birch, 2006).

The survey showed that the refugees living in temporary houses felt the basic life and material support was enough, but metal care was lacking. Good mental health promotes a zest for living and self-empowerment. The stronger bonds among residents before the disaster were, the larger loss of ties became. Some elderly people who were eager to go back to their hometowns died in temporary housing. The mental support must come from carefully selected refugees as well as outsiders. Community ties between newcomers and established residents must be constructed in a regional society. Making a commons, including not only land but also social activities and institutions maintained by all residents, is one way to build this new solidarity (Ostrom, 1990).

According to the analysis of structural equation modeling (SEM), the principle factors in the dissatisfaction with the present condition of recovery were the lack of quick reaction by the administration, the deregulation of administration, and the organizing activity of residents. Governments must interact with both newcomers and longtime residents. The balanced trinity of public help to reconstruct "temporary town," communal help among residents for community empowerment and self-help leading to self-empowerment is indispensable.

The difference in treatment by governments between public and private refuges was unfair (Rawls, 1999: 1971). The former got a lot of material support and food to the refugees. At the first stage of the emergency period, it is important for the helper to maintain the fairness in supporting all refugees. There are different needs at different stages, one, two and more years after the disaster. There are also particularly vulnerable people, for example those who need sign-language or foreign language

interpreters. Several surveys of fruitful data from residents should not be ignored but rather acknowledged as "unvoiced voices" to not only the governments but also all parties involved in recovery. Public opinion can impel new actions of rebuilding communities and community ties are indispensable for coping with the "social demise of communities."

Acknowledgement

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