A Study of Networking and Utilization of Resources for Long-Term Care Facilities in Flood Disaster Affected Communities

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Abstract: This research targeted five community based long-term care facilities in Tainan and the local chiefs of neighborhood; reference materials are the official disaster precaution data and foreign literature review. This research discusses how these long-term care facilities interact with the community network during flood. The goal is to find out a mode which could connect community organizations and community network under Taiwanese social structure. Taiwan has experienced several periods of community development and movements; the civil power is getting strong. However, the interaction and mutual-aid with long-term care facilities needs further establishment and reinforcement.

This research takes various research methods, including interview, on-site observations and analysis of literature. The results and literature review have similar findings about long-term care facilities’ relationship with community during flood. Although this issue ought to be emphasized and national disaster precaution system has gone deep into villages, care facilities still face many unsolved issues during disaster, such as uncompleted flood insurance, limits of community’s mobilization, and the support of government’s administrative order to mutual aid between care facilities. This dissertation is the first part of the 3-year research.

Key words: long-term care, community organization, community disaster precaution

1. Foreword

Disaster, means some fierce variation causing chaos in social order and needs assistance to return to normality. Disaster could be referred to two types, man-made disaster and natural one. Recent years, the death toll in natural disasters places on the top of all calamities in Taiwan (Hsieh & Chen, 2013).

In September, 2010, Typhoon Fanapi stroke Taiwan, and it caused serious damage in southern part of Taiwan. The next day after the typhoon, the news was headlined “In Gang-Shan Nursing Home, all the elders were soaked in water half of their body…” . This report reflected the impact the typhoon had on the elderly nursing homes. It said, “Pu-De nursing home in Gang-Shan Township of Kaohsiung County (Now in Kaohsiung City) was flooded; the flood made the residents in wheels confined in the water. These residents were rescued by the Red Cross
Society and Gang-Shan Fire Department (Li & Deng, 2012). The photo of these water-soaking elders in the report raise public’s attention to the disaster-dealing abilities of long-term care facilities.

The major clients of the long-term care facilities are the elderly and the disabled. In the category of disaster management, these people are defined as “the weak of evacuation” (or “disaster-challenged”). This group may include the elderly, the sick, the young, the disabled, and etc. Due to their difference in psychology, physics and health, they might lack judgement, delay in evacuation, or not be able to evacuate on their own. Therefore, they are in high risk of injury during disasters. Since 1970s, under these two conditions — the welfare countries’ finance condition got worse and those who were attended in a more humane way, many care facilities transferred from national size to community one (Popple & Stepney, 2011). There’s no exception in Taiwan. Small care facilities in community have grown fast these years in Taiwan where aging people are becoming a large number.

In 2011, National Fire Agency, ministry of interior, has put “Disaster precaution for the disaster-challenged” into the training courses for rescue workers. Its purpose is to equip those who make plans for the emergency or look after the elderly or the physically-challenged with the skills and knowledge in disaster handling and resilience (Deng, 2010). In Taiwan, care facilities do disaster precaution practice only to follow the order of the local police or fire department. However, long-term care facilities provide services mainly for the elderly and the disabled. These people in disaster managing work are “the weak in evacuation”. These two years in Taiwan, there has been heavy rain in a flash, which makes long-term care facilities face sudden flood and the facilities are threatened in providing security and care services. The experience of 88 Flood Disaster shows, when a natural disaster strikes an area, the assistance for the long-term care facilities normally needs outside rescuing-resources, such as fire department or the army. And this outside assistance usually takes more than ten hours to arrive. During the waiting period, the change of the disaster is unpredictable, and the long hours easily cause the casualty of elders.

Besides, the huge effect of a disaster can bring about severe casualties and chaos in a short time; it makes the original community organization and disaster-rescuing system collapse and not be able to operate. When facing this kind of urgency but slow process of follow-up rescue work, if there is no proper plan and practice, long-term care facilities’ rescue and assistance-needed could be easily ignored and forgotten. And, the elders’ casualty may happen. Just as it shows in the experience of Hurricane Katrina in the U.S., during the process of disaster, the elders staying in care facilities are the weakest group in surviving. Even in the U.S., it is also unavoidable that elders in care facilities pass away during the process of disaster (Warner & Travis, 2005). Therefore, except strengthening the disaster-dealing ability of the care facility itself, it is a must that community organization gets involved in the caring of elders’ security and life in the facility. And this kind of active integration into community disaster prevention system for the facility to obtain resources and play a part in the precaution and rescuing needs more efforts from the government to achieve the goal in both policy-making and regulating the facility in disaster prevention and rescue system.

From 921 Earthquake to Typhoon Morakot, the Government values life-reconstruction and disaster precaution in the basis of community, so in the disaster area, life-reconstruction center was set up to help community reconstruct and cultivate abilities in disaster precaution. At the same time, the mission of the center transfers from personal and family care in the beginning to the buildup of community organizations’ ability and mutual-aid network (Huang, Tsai & Chen, 2011). The book, “Safer Homes, Stronger Communities”, published by World Bank, on one hand, discloses the necessity of community’s involvement in disaster precaution and rescuing; on the other hand, it points out that community is not a piece of iron plate, but needs a lot of communication and
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organizations (pp. 301-302).

Like it says earlier in the paper, these years, due to the policy and trend of the care facilities’ integration into community, the location of care facilities being in communities, and the connection to community resources being put into the evaluation of the facilities, all the above trigger care facilities in holding more daily activities and practicing caring service with local organizations. So far, the care facilities interact more often with community, which brings more volunteers’ assistance from community into the facilities. Thus, facing the threat of disaster, care facilities should practice disaster precaution with community, so that the staffs in facilities get to know the possible resources in community; every organization and people in community can value the importance of disaster precaution and rescuing (Hsieh & Chen, 2013).

These years, after 88 Flood Disaster, the concept of disaster precaution in community has gradually prevailed under the government’s efforts. People reviewed disaster-potential areas in community and marked where the elders and single elders lived in advance. Besides, how to make use of volunteers in community to proceed prompt rescuing has grown into maturity. However, how to combine rescuing resources with long-term care facilities in the way of disaster precaution and rescuing still needs more discussion. Therefore, this study tries to explore the issue, targeting on the long-term care facilities suffering from flood disaster and its located communities. We try to understand what community supports these facilities got and the rescuing process during 88 Flood Disaster. We are studying long-term care facilities’ interacting methods and modes with community, and how these facilities interact with community. Whether they cooperate or help each other. Also, we are studying the obstacles and assistance the facilities encountered while trying to integrate into the community disaster prevention system. Finally, this study would discuss during the recovery period, how the facilities properly connect community resources, and utilize community’s power to proceed life reconstruction, so that the elders could maintain good social interaction in their community or in shelter.

This study mainly focuses on the facilities’ located communities; how the facilities could be brought into community disaster prevention system planned by the public sector, so that the community could provide enough resources to assist the elders facing the disaster. Besides, we hope to know if the established laws about protection methods and disaster precaution and rescuing system can provide the elders basic living safety, to make sure that the elders could get appropriate and continuous care and service, to maintain their living standards. Also, we try to understand if the local government and community organizations have the scheme in active contact and notification. In this way, they could control the whole situation about the elderly long-term care facilities and provide proper assistance (Laditka et al., 2008; Rhoades et al., 2008). Furthermore, we expect to find out, if the rescuing section has proper rescuing and evacuation plan for the elders in the facilities to avoid their danger during disaster (Brow, Heyer, & Polivka, 2007; Laditka et al, 2008). Our final theme is to know how to help long-term care facilities gain enough and proper resources when they are confined in flooding area but have no danger temporarily, so that they could go through disaster.

In a decade, many places in the world encounter calamities; among these calamities, flood disaster plays a major part. It happens in our neighboring countries, Japan and Philippines, countries distant from us, like India, the U.S., and etc. Due to different conditions in politics, economics and society, the interaction between facilities and communities shows in diverse ways in these countries. And their methods might offer something valuable for us to learn.

From the above studying origins and the review of related studies, we make our study purposes as following four parts:
(1) From the experiences of the five long-term care facilities suffering from flood, outline the interaction features and modes between care facilities and communities in Taiwan.

(2) Compare the network of long-term care facilities and communities in Taiwan to that of other countries experiencing flood (such as Japan, the U.S, and India). And propose some methods for Taiwan’s situation.

(3) In the way of empirical study, bring up suggestions and acting direction for the setting-up in resources network for mutual aid between long-term care facilities and communities.

(4) Give suggestions to national disaster precaution and rescuing in community, especially emphasize on the frail residents staying in long-term care facilities.

2. Literature

2.1 The Elderly Care Facilities in Aging Society Need to be Integrated into the Network of Disaster Precaution.

In an article, “Resilience analysis of the elderly care facilities when evacuating during flood” (Li, Li, Yang & Zhuang, 2013), it mentions that an aging society may bring problems of disaster management. In Japan, many district disaster plans have picked elderly care facilities with higher risk of disaster for emergency center as reference during disaster. In the U.S., Social Security Act makes it a rule that all elderly care facilities which join the national insurance plan need to have a disaster-dealing plan at hand. In Taiwan, in the past, many social-related public sectors focused on the mass’ evacuation, taking-in and settling-down, and the give-out of salvage charges. They had no specific rescuing plan for the disaster-challenged, such as care facilities. The article also brings up that formal social support network should cultivate facilities’ disaster-dealing resilience. This study suggests that Taiwan follows the example of Japan, to develop a culture in which the major assistance comes from facility itself (self-aid), and neighborhood (mutual aid); minor assistance lies in formal social support network (publicaid). This study also suggests that informal network’s effective mobilization in evacuating transportation and the arrangement of shelter could help the facilities evacuate in time. Another similar study also proposes that when coping with disaster, formal network cannot provide assistance at once; therefore, informal network plays a crucial role (Li, Li, Deng, Yang, Li & Guo, 2010). And, the article says that, since formal help cannot come in time, we need to depend on the neighbors’ help, like using the temple as shelter, taking the advantage of the good relationship with councilors or legislator, contacting reporters, to get prompt assistance. Here, the informal network is referred to two types. One is to provide prompt help in the community; the other is to utilize politics indirectly to drive formal resources’ coming in earlier.

2.2 Informal Network from the Neighborhood and Formal Network Are Both Indispensable.

The study made by Li Xiang-Jie and others in 2013, from several facilities’ experiences, points out that these facilities usually have mutual aid with local residents, temples and hospitals. And this informal relationship has its efficiency during flood; they help in moving out and taking in the elderly residents, decreasing the impact a disaster has on the facility. The informal support network also reflects on the preparation of food. For example, when Y care facility evacuated to Social Education Center, the staff found out that there was no food fitting the elders. They could only send an employee walking through water to the facility to get milk powder. Then, they used their informal but good relationship with other facilities, to cook for their elders, and transport salty porridge which fit the elders to the shelter. The above is an example that informal social network could supplement the few preparations of the formal social support network.
2.3 There Is A Gap in Making Manuals for Different Kinds of Disaster Precaution in Care Facilities in Japan.

Ever since the Great Hanshin Earthquake happened in 1995, the government started to develop a disaster prevention plan in Hanshin in 1996. Its purpose was to raise people’s autonomous ability in disaster precaution within a community; the executive object was set in a community about one elementary school’s student number, which were about 5000 to 6000 people. And in Hanshin there were about 170 elementary school districts. Every district carried out the plan based on the original social welfare organizations, but there were more organizations participating, including community autonomous government, women’s society, elders’ club, children’s association, negotiation meeting for people’s livelihood and children’s committee, parents’ meeting in elementary school, teenagers’ problem association, volunteer fire fighters’ organization, civil enterprises, etc. (Instructive manual of community disaster precaution, 2008). In 2011, after the huge earthquake in eastern Japan, in the 3 counties in east-northern part, almost 100% facilities made manuals for fire precaution, but only 70.1% facilities made manuals for earthquake precaution. Fewer facilities, about 3.6% facilities (18 facilities) made manuals for tsunami precaution. And if we take evacuation training as one part of disaster prevention instructions, we would find that 97.8% facilities held fire evacuation training. As to earthquake evacuation training, about 46.3% facilities did; only one facility practiced tsunami evacuation training. Around 38.8% facilities made manuals about equipment’s management after disaster. The manuals’ type differs by the facilities’ types (Iue, Kamiyoshi & Ishii, 2012). All the above shows that in Japan the elderly care facilities all set disaster prevention plans, and they have different plans by the types of disaster, like fire, earthquake and tsunami. However, only one facility practices tsunami evacuation training, which shows insufficiency in tsunami prevention training. Besides, facilities normally would make equipment’s management manual in case of disaster. A study about tsunami’s impact on Rikuzentakata in Japan after 311 Earthquake indicates that communities without autonomous disaster prevention organizations couldn’t totally develop prevention function. Some communities even with autonomous disaster prevention organizations still develop limited function. The reason is that they don’t have clear mission for each group; therefore, we find that setting up groups and making each group members clear mission is as crucial as setting up volunteering organizations (Rikuzentakata, 2014).

2.4 When Experiencing A Huge Disaster, It Is More Important to Have Cross-District Network.

In the study called “Integrated investigation into seniors’ welfare in complex disaster area” (2011), it indicates that when facing disaster, a collaborative system consisting of administrative sector, local hospital and neighboring communities needs to be set up; also, support for specific type of area should be limited. As a result, an organization with network from other administrative areas can bring its function into full play, such as “East-Northern, great Kanto earthquake collaborative support network” and “Thunder Bird”. The supportive organization by cooperation with different vocations has to be established. The employees could play their roles as nurses, caregivers, and faculty trainers. Besides, they could play as councilors for people to consult life hereafter. From this kind of system, the study finds that care facilities for the elders in disaster-affected area lack supportive employees as caregivers. Some NPOs and volunteer groups become huge power to the support of facilities in disaster-affected area. The study hopes that the system could be started from individual group to individual facility, and finally, in any area, an integrated network consisting of supportive information and shelter-needed facilities can be generated.
2.5 Intimate Partnership Helps the Continuity of Long-Term Reconstruction after Disaster.

Furthermore, in the eastern-Japan earthquake, we could see what the physical and hygiene supporting situation is in the disaster-affected area, Otsuchi and Kamaishi, one year after the earthquake. The supports could be classified into material assistance and medical one. About the material assistance, traffic issue once again raised people’s attention. To make outside support come into the disaster-affected area and accelerate the reconstruction, the priority job went to the traffic’s reconstruction. As to the medical assistance, originally the responsibility lied in public sector; however, due to the whole town being destroyed, the public sector couldn’t handle all the medical information, and the traffic network was cut off. Besides, the disaster-affected area was distant from the supportive side. It took the medical group over one week to reach the affected area. What’s worse, some medical group had no idea where to send the medical materials, thus there was a tremendous delay in delivering medical assistance. More issues were about the residence, individual’s life preparation and work. And the biggest concern came with time passed by; it was the gradual indifference to the earthquake. The indifference influenced the continuity of supporters and the later-on long-term work in people’s mentality. Thus, to make medical group’s assistance proceed easier, it is a must to build up a closer partnership between all the governing units, hygienic units and medical groups. And it is crucial to gather all disaster-related information. (Iseki, 2015)

2.6 Mutual Aid with Community Could Help Reverse the Facility’s Position in the Community.

In a survey about the take-in in the elderly care facilities and the staff’s evacuation in 2012, it points out that the role of care facilities in community and the support to the care facilities is a big issue. In a studying activity about special nursing home for the elderly, it shows that if there are no interaction and information exchanges in daily life, it is hard to take rescuing actions. That means disaster precaution lies in daily interaction and a result from accumulated experiences. Through studying activities, these facilities could make contact with one another. When a disaster happens, these facilities gain material, donation, and human resources more easily. One local facility accommodated over 50 escapees; these escapees brought their blankets, heaters, food and more materials with them, and they used this facility’s space at day time. Thus, the study found that the preparation of the equipment and storage-goods in a facility must take the staff and residents into consideration; the amounts may not be only for the residents in the facility (Miura, Yamaguchi, Ishii & Iue, 2012).

Similarly, in another article, “The Exercise Manner in a Complex Area for the Cultivation of Social Workers in 2013 — an Interview with Relevant People Going through Eastern Japan’s Earthquake and Koshigaya’s Experience”, the interview contents show “the importance of social reliance to a care facility”. It explains that if a care facility could take in more elders from nearby area, the facility would be viewed as “a friendly and safe place”, and it would be accepted by local residents. More report indicates that when residents of nearby area get assistance from the facility, they wouldn’t make complaints about long-term care facility any more (Nishikawa & Mori, 2013).

From the above two studies, we find that, in the disaster experience of Japan, a facility could be a safe shelter in the community; it could take in local residents, and residents and staff from other facilities. It may not only be the one accepting assistance from others. When one facility could provide its space and equipment, it won’t be a burden to a community. It could be one positive organization which help and interact with community. Taiwan could take this assisting mode for reference. The care facility could participate in local activities, contact the chief of neighborhood actively, and discuss cooperating methods in disaster precaution. When there is disaster prevention practice, the facility could also take part in the practice. The disabled or elders could evacuate to which
long-term care facilities nearby. In this way, a facility would get higher chances to be rescued when a disaster happens.

2.7 A Plan Needs to Be Practiced Again and Again to Work Well.

From the influence of Hurricane Katrina in 2005 to the elderly care facilities in the U.S., based on what the administrator of Louisiana care facility said, it takes huge amount of human resources during disaster to protect the residents’ safety. However, some residents might go through sickness or death. In August of 2012, Hurricane Issac stroke New Orleans in the U.S., and it caused flood. Many facilities experiencing the disaster indicate that whether a disaster plan could succeed in protecting residents lies in repeated practices for many years. Also, more factors for its success are the key staff’s efforts, close contact with emergency center, which could offer related information and material, such as the weather condition, question-answering, transportation’s build-up, fuel for generator, or food. Take Emergency Status System of Florida for example, it requests all care facilities provide information like key employees, evacuation plan, electricity capacity, and special residents’ needs for the state government.

A disaster study for several decades, written by E. L. Quarantelli (1997), finds that following five steps could help care facilities build up resilience when facing disaster, or even become a stronger one.

(1) Connect with outside world: Connect with the organizations which could provide the facility necessary information and services; followings are the major ones: electricity company, law enforcement organization, and emergency management organization.

(2) Evaluate risks and resources: Use interior and outside environmental knowledge; this part is based on the cooperation with outsiders.

(3) Predict problems and develop a plan which could solve problems: Use evaluations of risks and resources.

(4) Experiment on the plan: Exercise the plan repeatedly, and bring up unpredictable weaknesses.

(5) Evaluate the execution of the plan and use the results to improve the disaster plan, develop extra responding abilities and gain resilience.

In a study of American Health and Human Service Sector in 2012, it indicates that based on Federal Law, although most care facilities have developed a disaster plan and training methods, the plan still couldn’t include all the crucial issues, such as reliable transporting system, the cooperation with emergency management organization, and decide to evacuate from the facility or stay in it. 24 facilities which take part in the study mention that the difficulty in executing the plan due to the incorrect information in the plan. And, the plan cannot predict problems happening later on. Besides, it is better that the officials from emergency management organization could help carry out the plan, evacuation and resilience. Also, cooperation with “providers” is equally important, like Electricity Company. However, the above cooperation is not an easy task. Federal Government could only order care facilities to do such cooperation, but relevant organizations may not respond to the facility. Due to the system of decentralization in the U.S., the governing unit is the state government or local judiciary organization.

FHCA (Florida Health Care Association) suggests that, a care facility should cooperate with at least 3 shelters. One of them had better locates 50 miles from the facility. Some facilities actually create their own shelters. For example, they might have cooperated with the Church for a long time, and the Church has its own gymnasium with a kitchen and bathroom for shower. Another example is that, the facility purchases an abandoned hospital with a generator and water-supply system (Charles, 2014).
3. Research Method

3.1 In-depth Interview

The selection condition of the organizations is that they have to be the long-term care facilities which are located in Taiwan or Chia-Yi area, and they have suffered from 88 Flood Disaster. The interviewees include the chief of these facilities’ neighborhood, and the interviewees from the facilities are the person in charge, the director, the social worker, and the cashier. In total, we interview four facilities, two chiefs of neighborhood, one volunteer, and one president of a care association. Please check Table 1 for the details of the interviewees. Our interview outline covers eight subjects, as follows: the flooding simulating map, the distance between the facility and rescuing organizations, formal volunteer organizations in and outside of the facility, the interaction with community, social network, how local people look at the facility, how the facility reacted during the flood and after the flood, and relevant insurances of the facility. Through these subjects, we expect to find out the details happened in the facilities during 88 Flood Disaster.

3.2 Participant Observation

We select five long-term care facilities located in Tainan or Chia-Yi, which have suffered from 88 Flood Disaster. Then, we take part in their disaster precaution and keep a record, especially during the raining season and typhoon season.

3.3 Literature Review

We collect and compare data from Japan and the U.S. What the similarities and differences are between long-term care facilities’ community network and utilization in Japan, the U.S. and Taiwan.

Table 1 The Interviewees

<table>
<thead>
<tr>
<th>Code Name</th>
<th>Organization/Located Area</th>
<th>Post in facility</th>
<th>Date of Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Yongkang Dist. Tainan City</td>
<td>Boss A11, Director A12, Nursing Assistant A13</td>
<td>2014.11.3</td>
</tr>
<tr>
<td>B</td>
<td>Madou Dist. Tainan City</td>
<td>Director B11, Charge nurse B13, Social Worker B12, Nursing Assistant B14</td>
<td>2014.12.29</td>
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<tr>
<td>C</td>
<td>Anna Dist. Tainan City</td>
<td>Person in charge C11</td>
<td>2015.3.6</td>
</tr>
<tr>
<td>D</td>
<td>Xikou Township, Chiayi County</td>
<td>Casier D11</td>
<td>2015.3.13</td>
</tr>
<tr>
<td>E</td>
<td>Xuejis Dist. Tainan City</td>
<td>Head of facility E11</td>
<td>2015.5.29</td>
</tr>
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<td>Volunteer</td>
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<td>Head of neighborhood</td>
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</tr>
<tr>
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<td>Head of neighborhood</td>
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</tr>
<tr>
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<td>Xuejis Dist. Tainan City</td>
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<td>2015.7.2</td>
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<tr>
<td>F1</td>
<td>Tainan Long Term Care Development Association</td>
<td>President F1</td>
<td>2015.4.27</td>
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4. Research Findings

4.1 National Disaster Prevention System Has Gone Deep into Villages, But Not So Deep into Long-Term Care Facilities.

Taiwan government made “Disaster Prevention and Rescue Act” in 2000. (The latest revised edition was made in 2012). It regulates all kinds of disaster prevention and rescue methods for organizations. From central government to county and city government, and to township level, all these public sectors practice disaster precaution based on this Act. Article 25 indicates that the ones who need to do disaster prevention and rescue practice areas follows: all institutions, staff of public utilities, residents, public and private schools, groups, companies and factories. Article 31 regulates the punishment and enforcement in disastrous area; in item 6, it shows that when governments of all level set up emergency center, each commander in disastrous area has to appoint following missions. The missions include commanding, supervising, coordinating organizations: national troops, fire department, police officers, related government institutions, public utilities, civil defense groups, disaster prevention and rescue groups and disaster volunteer organizations. The purpose of the above missions is for rescuing work. And about the responsible sections for these disaster prevention and rescue organizations and plans are various, from central government to local one. When then public find disaster or coming-disaster, they should inform fire department or police institutions, the chief of the village or neighborhood, or the assistant of the village or neighborhood.

From the manual of community disaster precaution made by Disaster Prevention and Rescue Committee of Executive Yuan, we find that community groups which join precaution include community organizations (like village or neighborhood offices, community development associations, ma-ma's societies, senior societies, producing and marketing classes, etc.), administrative organizations (like local government, emergency management organizations, public utilities, etc.), civil organizations. And civil organizations could be divided into two types. One type is built up by administrative organizations, such as neighbor watching and rescuing teams, phoenix volunteers, female fire prevention promoting teams, community patrol teams, etc. The other type is ordinary civil organizations; they are non-profit organizations, professional groups (like union of structure technicians, union of doctors), disaster prevention and rescuing professional teams (like International Headquarters S.A.R., The Red Cross Society), religious groups (like Christianity, Buddhism, Taoism), educational organizations (like junior high school and elementary schools, associations of teachers), and enterprise groups (like community or local stores, factories, industry and commerce groups, unions of workers). The above depicts clearly who should receive prevention and rescue trainings and practices, compared to the general instructions planned by the central government. The disaster prevention and rescue plan in county and city government has clearer caring methods. Take Tainan government for instance; since 2011 county and city governments combined as one government, they made the disaster prevention and rescue plan. In the plan, it points out that the government should first collect lists covering the elders living alone in the community, the ones suffering from serious sickness, and residents staying in elderly care facilities or hospitals. In this way, these people’s rescuing and assistance would be seen as priority. And the Social Affairs Bureau is asked to have following name list at hand: the physical-disabled, the elders living alone. This name list would be provided to emergency center in each district, in order that these people have the priority to be evacuated. And Department of Health needs to know the patients in hospitals and coordinates where to transfer. Similarly, in 2010, based on the conclusion from “The Conference of Evacuation in Potential Disaster Areas”, when there is typhoon alert on the ocean or heavy rain
alert, the chief of village or neighborhood should have the name list of minority (patients, elders, children, and the physically-disabled) and the list of disaster-potential households.

Under Ministry of Interior, in the evaluation items of elderly care facilities, the request for public safety specifies that the facility’s insurance has to include public accident and fire disaster. And the insurance range and limit has to meet the regulations. For the request of fire precaution, it includes organizing self-protective team, practicing the precaution, regular training of fire administrator for basic and advanced levels, marking evacuating routes and emergency exit, and being checked by fire department. The purpose of regulations in evaluation items is to reduce the facility’s risk burden, and confirm its residents’ safety. However, in evaluation items, there are no regulations about flood, such as flood evacuation method, precaution procedures, and flood disaster insurance. The way to deal with flood and fire is very different. For instance, normally, on one time, fire happens in one care facility, and fire fighters could all gather to do the rescue. But, if flood happens, especially huge flood, many places needed to be assisted. And due to flood, the traffic would be inconvenient, and that increases difficulty in rescuing. Then, when flood comes, how can long-term care facilities cope with it?

So far, based on the revised regulations of manual on evacuation map in 2009 by disaster prevention and rescue committee of Administrative Yuan, each township office in Taiwan needs to have evacuation maps of village or neighborhood. The map has to show all relevant resources in the village and township, disaster-potential area, and shelters. In this way, during disaster, the director could use the resources flexibly. An evacuation map is to put all rescuing information into it; the major parts are potential area and evacuating routes. Following four maps are the evacuation maps of the districts in Tainan and Chia-Yi which have suffered from 88 Flood Disaster. All the maps mark disaster potential area and evacuating routes, locations of shelters. On the left side, it is a list of emergency contact information, including city government, district, fire department, police stations, emergency contact, shelters’ phone number and address. On the bottom, there are illustrations for roads, signs and equipment. We find that care facilities for the disabled and the elders are included in the equipment. Also in the map, we find that evacuating routes’ destination is the shelter for flood, the activity center. Elderly care facilities are also marked in the routes. Similarly, Zhong-Min Neighborhood in Madou District of Tainan, Dian-Dong Neighborhood in Anna District of Tainan, and Chai-Lin Village in Xikao Township of Chiayi County draw the map in the same way. But, Long-Tan Neighborhood in Yongkang District of Tainan doesn’t put long-term care facilities in its map. According to the list of Tainan elderly nursing home and long-term care facilities, the total number is 113. However, only 14 facilities are marked in the map; they are put in the map of Anna district, Madou district, Guantian district and Jiangjun district. That’s 12.39%. It explains that the law of Taiwan has made township offices prepare evacuation maps for villages, but care facilities are mostly ignored in the map.

4.2 Flood Insurance and Flood Practices Are Not Viewed As Real Needs in Facilities.

In the regulations of elderly care facility’s setting-up, fire insurance and fire precaution and practices are specified. And to meet the request of evaluation, care facility prepares fire insurance, but not other insurances. As to the disaster practice, recent years, under the supervisor’s request, the practice becomes a complex-disaster one. But, fire is different from flood. Normally, fire happens in one care facility, and the fire fighters could gather to one place to do rescuing. But flood, especially huge flood, may spread in many places. And it made the traffic become inconvenient; special transportation might be needed. More rescuing difficulty has to be solved. Therefore, a complex-disaster practice is necessary. However, most care facilities still lack the ability to make disaster practice based on their experiences of facing flood. Besides, they could buy flood insurance to reduce their
financial risk. Now most disaster practices are for the government’s evaluation paper work.

Map of Evacuation 1 Hsieh-An Neighborhood in Madou District, Tainan City

Map of Evacuation 2 Dian-Dong Neighborhood in Anna District, Tainan City
Now we only have public incident and fire insurance. (B11)

We have earthquake insurance. (C11)

We buy fire insurance! (But we didn’t buy flood insurance.) (D11)

Yes, we have insurance, but not for flood. Most of us buy fire, earthquake insurance. We didn’t expect such
serious damage caused by flood. (E11)

We started the practice last year… they asked us to do complex-disaster practice, earthquake and fire. Last year, we put flood in our practice. In the past, fire happened more often. We did the practice with fire department. They sent life boats here, and we followed our emergency rescuing procedures. We went into the life boats. We tried to go up to the 2nd floor. Our residents stayed on 2nd floor and higher floor; no residents stayed on 1st floor. We made the residents stay on 2nd floor and higher floor. When we couldn’t handle the situation, we go to other shelters. (D11)

We have procedure for flood rescuing. But the so-called procedure means that, when flood comes, we would contact the supervising organization. There is an informing system. This is only our paper work. Actually, we would inform general affairs team, and evacuate everyone to shelters. But, this is only when we couldn’t settle them here; we go to Tai-Zi temple. (B11)

We do something to natural disaster. If there is something happened, we would organize teams for different missions. (B11)

It is Social Affairs Bureau. It has an example for facility’s natural disaster rescue plan. (B11)

To meet the government’s request, we had an evacuation plan for flood and landslides in 2013. We did the disaster practice with the government. (E11)

It’s about fire disaster. But now we unite with fire department, practicing flood and earthquake. Maybe it’s because an earthquake may trigger fire. Therefore it’s a complex practice. (E11)

He asked us to organize our firefighting team, asking us to show him, once a year. But we organized the team once in half a year. The public sector checked what we did once a year. This was for fire. Nothing was done for flood. We didn’t fill-in the chart during flood. In fact, we should have more preparations for flood. I think flood is more terrifying than earthquake. As you can see, it may not rain for long, and then suddenly we have super heavy rain. The government should educate us the game’s rules and coping methods. In this way, everything should be fine. (F1)

Our government has transformed fire practice in earlier times into a complex natural disaster practice. However, facility’s practicing attitude and emphasizing level is still based on the fire mode. No care facility knows how to evacuate residents correctly when facing flood. So far each care facility utilizes its own mode to do disaster precaution. Suffering from flood, these care facilities started to plan their evacuation. A correct evacuation needs following considerations: each facility’s disaster location, the number of floors in the building, and proper shelters. These care facilities have realized the serious damage flood may bring, but they expect the government could assist and plan for them in professional part. So they would know if they are doing the evacuation correctly.

4.3 Due to the Limits PF Volunteers, the Chiefs PF Neighborhood Didn’t View Care Facilities’ Rescuing as Their Responsibility.

Daily, there are volunteers from school and church providing their services in these long-term care facilities being interviewed. And what they serve is mostly doing performance to make the elderly happy. However, when it comes to rescue during flood or clean the environment after the flood, volunteers are not mentioned. The three villages being interviewed actually mobilize volunteer organizations with different abilities. These volunteers’ missions are usually keeping the environment clean or paying attention to the elderly. Only one chief of neighborhood says that, when disaster happens, volunteers assist in delivering materials or decontaminating the environment. And the other two chiefs say that, each household encounters flood, so all the residents need to clean their own household environment. That’s why the volunteers couldn’t provide assistance for care facilities. One
chief think that, when a care facility knows the coming of disaster, they should prepare human resources to help evacuate the elders to other safe areas, instead of waiting for others’ rescuing.

Volunteers in each neighborhood have diverse capacity. The chiefs don’t take the rescuing of care facilities as their responsibility. But, in Disaster Prevention and Rescue Act from central government, it mentions that when people find disaster or coming disaster, they should inform the chief of village or the assistant of village. Back to the Disaster Prevention and Rescue Plan made by Tainan City government, it also says that rescuing and assisting the elderly care facilities is top priority, and the chief of village or neighborhood should have a name list of high-risk minority at hand. From central to local government, the rules are quite clear.

He would deliver lunch boxes. There is a volunteer team in our village; their mission is to clean the environment. (C11)

We have volunteers from Tzu-Chi organization; they help make lunch boxes. And we borrow an iron cart to deliver the boxes. (C11)

After disaster, our volunteers help them. What the community can do is to help them clean the environment, decontaminate the environment. (B21)

When disaster happens, we couldn’t provide much help. To be honest, if the disaster hit only one place, we might send more volunteers. But the disaster spread in the whole area; each household might need help and clean. It is difficult to use community to provide a lot of assistance. If they know a disaster is coming, they should ask help for more people. These people could help them evacuate residents in facility. They should search help for these people in advance if there is possibility in evacuation. (C21)

I don’t think we have volunteers for them. Everyone needs to take care of his own household. (A21)

Volunteers couldn’t even take care of their own stuff. (D23)

About volunteers…we have some from school. For example, Ji-An Elementary School is nearby, and we use the school to hold our activities. The principal would join our activities. They have many club activities, like dancing dragon and lion, instrument performing, some other performance, and the elders’ caring. Li-Ming High School is also nearby; the students assist us in feeding the elders, or walking with the elders in wheelchairs. About half a year, or a semester, we cooperate with another school, Tseng-Wen Vocational High School. The students of the school are our volunteers as well. (B11)

Nan-Kwang Senior High School asks the students to be one-day volunteer; and they are led by school drillmasters. We, Kai-Yuan Temple, belong to Yiguandao in religion, and some school drillmasters serve here for Yiguandao. They know we are here, so they would bring their students of volunteer club to be volunteers here. The students come over here to server the elders. (D11)

More and more people from Church participate in the facility’s activities. Originally, they come once a month; now, they come here twice a month. We invite students from junior and senior high schools to sing. Also, they love street dance, so I invite them to perform street dance for the elders. (F1)

Zhong-Zhou Elementary School, the principal is quite nice. The school makes their six-grade students come to our facility every year. They come to our facility, pay regards to our residents, assist in feeding the elders, walk with those in wheelchairs, and dance for them. Last time, each elder got a rice roll after the activity and they could enjoy it in their own room. (E11)

4.4 Mutual aid between Long-Term Care Facilities Works Well during Disaster, But It Needs the Government’s Active Policy.

Under the government’s rule, the shelters are mostly in schools, activity centers or temples. However, for the
residents from long-term care facilities, these shelters may not suit them due to their special needs in caring. Besides, if the roads to the shelters are blocked, residents may not evacuate smoothly. Thus, these care facilities utilize their personal network to look for nearby and suitable shelters. That’s why daily interaction with outside world is quite important. Long-term care facilities in Tainan usually hold their annual members’ meeting end of a year. The meeting is for members to talk with each other, exchange their ideas or problems on facility’s management and rules of government. They would become each other’s supporting system. They also contact one another by corresponding software; when there is disaster, they could send out “Mayday”, and others would try to help in providing different things, like transportation, space, food, human resources, or even their own home.

In Chia-Yi, the one in charge of facility D mentions that about their cooperation with other long-term care facilities, they start from contracting with another facility. Later on, more facilities sign the contract. They get consensus through contracts, including providing space and human resources. When disaster happens, it needs more help, not only from other facilities’ support. During the process of evacuation, the elders might have more medical needs due to illness; therefore, these long-term care facilities cooperate with near hospitals and dialysis clinics.

Yes, we have contacts and interaction. At that time, they are a new facility, only taking in a few residents. I ask the one in charge, if we could borrow their place. They are enthusiastic, so we go over their place. They also bring some blankets for us. (B11)

Our experience last year was based on daily contact with some facilities and we built up quite good relationship. (B11)

We don’t have a paper contract with one another, but I bet the facilities in Tainan have great interaction. As long as we “line” our problems, there would be a lot of reactions to the problems. (F1)

Each household is suspended water supply, but not my house. Therefore, about seven to eight facilities get water from my house; some employees even take a shower at my place, for ten days. Ha. …………. (F1)

We cooperate with several care facilities, and we also contact some temples, Chai-Lin Elementary School, and some hospitals. We sign a mutual-aid contract with them. (D11)

Some facilities sign similar contracts with them as well. When there is an emergency, we support one another. Mostly we are from Chia-Yi County and Chia-Yi City. Since last year’s complex-disaster practice, we get consensus that we need to sign contract with each other. Originally, we contracted with one or two facility in Da-Li; later, all of us signed contracts. (D11)

Gathering, we hold an annual gathering end of a year. This is held by the association. We have an annual members’ meeting, so it becomes a reunion occasion. Everyone could get closer. (F1)

We cooperate with Sin-Lau Hospital in Madou, and Chi-Mei Medical Center in Chiali. They are the bigger organizations. Smaller one is Shin-Ho Clinic (Dialysis Center). (B11)

Last time when we evacuated, we asked help from one facility in Chiali. The bosses actually have interaction with each other. (E11)

Nevertheless, to make this mutual aid between facilities have greater effect, active involvement by the public sector is necessary. If the government gives the care facilities more flexibility, not requesting a space standard, allowing settlement on the floor when there is not enough beds. Since smaller care facilities have almost no empty beds, in an emergency, floor is suitable space for usage.
4.5 Long-term Care Facilities Could Be Shelters to Take in More People.

When disaster happens, long-term care facilities are usually viewed as the ones needed to be assisted. However, during the interview, we find that long-term care facilities could also be shelters to take in more residents or elders. The one in charge of long-term care facility C is from local community, who has lived in the community for a long time and is familiar with the neighbors. Therefore, when disaster happens, the villagers ask help from Facility C. Facility C is willing to help and take care of them. Equally, the bakery in the community would give out bread for the elders of the facility. Long-term care facility D contracts with the township office; the emergency contract says that facility D would provide evacuating space, and they both expect to help each other. Facility D hopes that the township office wouldn’t forget their existence and would offer them necessary materials.

There are many elders living alone. During the flood, we got a phone call: “Sir, we are flooded! I would take my mom over to your facility. I said: “OK, bring her here. You may take her home until the end of the typhoon.” To be honest, neighbors are important. During the flood, there’s certain route to our facility being blocked. Then, how can we seek help from others? Thus, we could only find neighbors to help us. The so-called transporting procedure is difficult. (C1)

On that day, each district here was critical. Last time, we showed the visitors the serious situation everywhere. At that time, our village was still OK. Some bakeries gave us bread. Then we gave bread to others. I felt quite warm. Most of us are local people; we have lived here for a long time and we get along with each other. (C1) Assistance….we do have an emergent evacuation contract with the township office. To follow the contract, we would provide them a shelter space, and the township office could offer us some materials… This is mutual aid. (D11)

The government regulates that long-term care facilities can take in certain number of residents; they are not allowed to take in more than the standard number. The president of Facility F worries that this would make other facilities dare not to take in more people and get fined. So they may refuse to help other facilities. During disaster, the government could use the facility’s space, like the hall, to evaluate take-in standard number. After all, it is more suitable to evacuate to neighboring long-term care facility instead of the activity center.

Take 88 Flood Disaster for instance, Yong-Kang and Guang-Shan were flooded. Do you think who could help accommodate their residents? I don’t think there is any. Why? At that time, the government said, as long as there’s safe space in the facility, residents could evacuate to that facility. But, what the government meant was “empty bed”. That’s almost impossible. A newly-open care facility might have twenty empty beds; for other facilities, it’s impossible to have that many empty ones, at most two or three empty beds. If a facility have five empty beds, that’s a worse situation. If there are five people evacuating to the facility, who could help take care of these five people? But the facility’s residents could evacuate to a nearby facility’s hall, for example, there is a care facility near Yong-Kang Tsz-Shan Nusing, about seven to ten minutes. The hall of this care facility is safe; then, residents from Tsz-Shan could evacuate to the hall. This way, every facility would be able to take in residents from other facilities. They would definitely support others in this way. (F1)

5. Conclusion and Future Studying Aspects

This study originates from assuming a community long-term care facility could interact closely with the community, and make good use of community resources; then they may have better disaster precaution, rescue and evacuation during flood because of mutual aid with the community.

In literature reviewing part, we sort past studies into following conclusions:
(1) The elderly care facilities in aging society need to be integrated into the network of disaster precaution.
(2) Both informal network of community and formal network from the government are indispensable in disaster precaution.
(3) There is a gap in making manuals for different kinds of disaster precaution in care facilities in Japan.
(4) When the disaster is huge, cross-district network becomes more critical.
(5) Intimate partnership helps the continuity of long-term reconstruction after disaster.
(6) Mutual aid with community could help reverse the facility’s position in the community.
(7) A plan needs to be practiced again and again to work well.

From the relevant regulations, plans, webpage data, the interview information from long-term care facilities suffering from flood these years in Tainan and the interview with local chief of neighborhood, this study is concluded in following findings.

(1) National disaster precaution system has gone deep into villages, but not so deep into long-term care facilities.
(2) Flood insurance and flood practices are not viewed as real needs in facilities.
(3) Due to the limits of volunteers, the chiefs of neighborhood didn’t view care facilities’ rescuing as their responsibility.
(4) Mutual-aid between long-term care facilities works well during disaster, but it needs the government’s active policy.
(5) Long-term care facilities could be shelters to take in more people.

This study targets on the analysis of official disaster precaution relevant literature, interview information of small care facilities suffering from flood in Tainan and the interview with local chief of neighborhood. The results and literature review have similar finding about long-term care facilities’ relationship with community during flood. Although this issue ought to be emphasized and national disaster prevention system has gone deep into villages, there’s still more waiting for further study and develop, such as uncompleted flood insurance, limits of community’s mobilization, and the support of government’s administrative order to mutual aid between care facilities. The above issues need future investigation and efforts of workers in community.

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References
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