

Cooperative States and Issues between Public and Private Sectors for Post-disaster Relocating Reconstruction: In a Case of Morakot Typhoon

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ABSTRACT: When the public sectors handle the reconstruction in the great number, how to make the correct policies and fulfill them in time is a difficult mission. In this research we analyzed the countermeasures of reconstruction and relocation after Morakot typhoon by literature review, and the interview was held to residents who have moved to permanent housing community. Through the research, it is found that the reconstruction plan was implemented under a concept of disaster mitigation, and to promote relocating reconstruction by cooperating with private sectors to construct permanent housings in several sites. However, in order to success and to progress the relocation program smoothly, to communicate with residents, to mitigate the influence occurred from relocation, and to take care, monitoring and evaluating would be necessary when we take consideration into relocation program.

KEYWORDS: Post-disaster Relocation, NGO-joint Reconstruction, Disaster Mitigation and Management

1. INTRODUCTION

Because of the development in urban, country sides, and sensitive areas, the vulnerability of areas above gets raised. Moreover, the change of environment and weather in the global makes nature disasters occur more frequently and broadly. When the public sectors handle the reconstruction in the great number, how to make the correct policies and fulfill them in time is a difficult mission. As the result, the cooperation between public sectors and private sectors is the one of important issues (ISDR, 2004). During the 6th to 8th in August of 2009, the Morakot typhoon damaged the south part of Taiwan. The Executive Yuan issued the Morakot Post-disaster Reconstruction Special Act and built the permanent housing for sufferers of typhoon by the cooperation with private sectors. In the study, we focused post-disaster relocation policy after Morakot

typhoon and gave the review of literature and interview with related sectors to discuss the policies of relocation and reconstruction by linking with public and private sectors to deal with the reconstruction in community after disasters and realize the process of post-disaster reconstruction countermeasure of permanent housing. The purpose is to make the status and issues clear in the action of relocation and reconstruction in the community.

2. RELATIONSHIP BETWEEN PUBLIC AND PRIVATE SECTORS IN POST-DISASTER RECONSTRUCTION

After the disaster, the most important part of emergent social system is disaster management system, such as public sector (including center government and local government) and private sector (community, non-profit organization,

non-governmental organization, and religion organization). Since the uncertain and emergency with the disaster, the dependence between organization gets more important and issues worth discussing becomes more. As the result, every organization usually cannot grasp the obligation and competent with the change of the environment. Therefore the proper action adopted by public and private sectors, such as negotiation with each other and mutual support system has an important influence on effectiveness of reconstruction. David M. Neal stated that the inflexible bureaucracy and policy cannot solve the problems caused by disasters, and only the flexible organization can handle the complicated reconstruction after the occurrence of disaster. We suggest building Emergent Human Resource Model which is organized by private organization and work for no profit purposes. EHRM usually deal with the mission more effectively than public sectors (Jiang and Tseng, 2002). The public sectors have poor integration with others after the disaster and make people change their confidence to private sectors and improve the effectiveness of reconstruction in the community.

2.1 Lessons from case studies

Loma Prieta Earthquake happened in 1989 in California in U.S. After the earthquake, the state government did a great job in the early stage and the residents also follow the order of government to process the evacuation. Private sectors, like Red Cross of R.O.C entered the damaged areas and made the relief action more effective. However, in the stage of relocation and settle-down, there were not adequate shelters accommodating refugees and lack of multi language for non-English American residents, therefore the low income family suffered the frustration and depression. The shortcomings of public sectors were shown in such situation. The lesson of Loma Prieta Earthquake was learned in

Northridge Earthquake in 1994, besides the relief action provided by Red Cross and the salvation army, the private sectors, such as NGOs, NPOs, CBOs (community-based organizations) also took part in the reconstruction of buildings and daily life for residents (Hung and Shao, 2004). The Katrina in 2005 also made significant the problems of leadership, correlation, accommodation, support, and system in public sectors. The reconstruction of buildings was done by local archeologists, designers, or nation-wide experts. Through the team work in community, the exchange of viewpoints given by residents in the community was done to make a practicable decision of reconstruction. Especially in the policy making in reconstruction, the opinions from residents were valued and put into practice by representatives from 13 areas. The budget and relief support given by the government were based on opinions of residents. The residents and teams of private sectors meet frequently to decide the specific issues in their own areas and open the information of meeting on the website regularly. The goals of reconstruction, clear budget were decided by regular meeting which can link the support team and local residents and exchange the information and make the support areas larger in related issues in schedule-making and ask for support with UNOP for the integration.

Besides, after the Great Hanshin Earthquake of 1995 in Japan, the Hyogo Prefecture was charged most of reconstruction, but the NPOs and NGOs also get involved in the relief action. After 1 year of the earthquake, the population of volunteers was about 1,380,000. Comparing to the inflexibility of Hyogo Prefecture, the private sectors played the important roles in the reconstruction during the period of post disaster. The merits made the related laws issued by the government integrate the resource whined in private organizations (Hyogo Prefecture, 1997).

After the reconstruction, the private sectors were also left in the community to develop and support the community from housing to life and build the bridge between residents and public sectors (Shao, 2007).

The reconstruction for Chi-Chi Earthquake of 1999 was focused on rebuilding of tribes. The purpose is to recover the culture and social regulars and made the residents settle down. The government provided two choices for natives. One is reconstruction of original site and the other is relocation to new sites. The reconstruction was adopted in areas suffered damage seriously and the will of natives was respected. 70% of tribes (23 in total) were reconstructed in advance based on their will, and 7 tribes among them decide to relocate to other sites, and 16 ones were reconstructed in original areas. The public sectors decide the location, make the procedure simple, and recruit of land (Shao, 2008). 921 Earthquake Relief Foundation also provided the subsidy for homeless residents for the by those related laws and practices. Besides, the committee was arranged by local residents to communicate with public sectors, and making the fixed process for reconstruction more flexible and solving the dispute between two sides when processing the relocation of tribes.

According to the statement given above, the cooperation between public sector and private sector can be collected into several principles as follows:

(1) The public sectors are charged with the obligation for reconstruction and integration with resources. Taking U.S. and Japan for instance, based on the opinions of residents, the private sectors provide the schedule to meet the characteristics of local in three stages by short term, mid-term, and long-term. In Chi-Chi Earthquake, the government of Taiwan provided the master plan of reconstruction

and committee was arranged by damaged residents and NGOs provided the schedules in damaged communities.

(2) The role of private sectors and NGOs are set to support the public sector to push the reconstruction and to build the bridge to communicate the residents and officers. Furthermore, the Chi-Chi Earthquake Relief Foundation provide the service to help residents apply funds to rebuild their houses and solve the problem during the reconstruction. The private sectors also provide the mid-term and long-term schedules to process reconstruction.

(3) The ideas and opinions given by residents for reconstruction, arrangement and adjustment were open to everyone by internet to grasp of the process and link with other resource.

3. DAMAGED SITUATION FROM MORAKOT TYPHOON AND THE RECONSTRUCTION POLICY

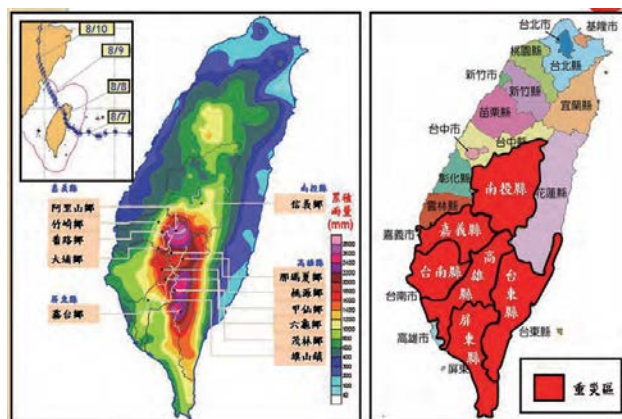


Figure 1 Rainfall for Typhoon Morakot and mainly damaged areas

Source: Morakot Post-disaster Reconstruction Council, 2001

3.1 Conditions of disaster

The Typhoon Morakot hit Taiwan on 8th, August in 2009, and brought the failing of rain extremely in Chai, Tainan, Kaohsiung and PingTung areas, especially in Ali Mountain, 2,854 mm of rainfall in

72 hours was recorded which was 80% of average rainfall in 1 year (See Figure 1). The damage caused by the typhoon includes serious collapse of mountain, flood, break of communicated road, and villages were buried and destroyed in Jiaxian and Liouguei districts. 146,739 households took the evacuation, and caused 510,668 people taking refuge, 699 people died and lost contact, and 4 persons got injured. Damaged areas contained 11 townships, cities, and 175 districts in total, and loss of 1,998 hundred million Taiwan Dollars which included direct loss of 1,896 hundred million Taiwan Dollars and indirect loss of 101 hundred million Taiwan Dollars (Chen, 2011).

The emergent management center was raised to the highest level on 6th, August in 2009 and in order to assist the local relief action, the relief center in southern Taiwan on 9th, August. Moreover, to strengthen the communication and coordination between organizations, the relief center was also built in Kaohsiung. The meeting held by the Construction Committee of Administration Ministry to deal with the relocation and reconstruction of communities and 8 damaged areas were taken care by related divisions of central government designed to promote reconstruction in the post period of Morakot Typhoon in 11th, August. Morakot post-disaster reconstruction council of executive yuan was set up on 24th, August to deal with all details of post-disaster administration and the first team meeting was held to discuss the reconstruction of post Morakot. Furthermore, the related laws were claimed on 28th which was the law base for all relief activities and reconstruction (See Table 1).

Table 1 Timeline of central governmental response and decision making for reconstruction

Time	Response and decision making	Notes
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2009.8.6	To set up highest level of central emergency center	To grasp damage information and to progress rescue
2009.8.9	To set up relief center in southern area	To assist the local relief action
2009.8.10	To set up Kaohsiung relief center	to strengthen the communication and to discuss relocation works
2009.8.11	To set up damaged area service team	To coordinate central governmental divisions to assist 8 damaged areas
2009.8.19	To establish Morakot post-disaster reconstruction council	As an specific organization to deal with all details for post-disaster reconstruction
2009.8.24	To set up southern office of Morakot post-disaster reconstruction council	To assist the local reconstruction
2009.8.28	To announced Morakot post-disaster reconstruction special act	As the basic law for reconstruction
2009.9.4	To announce principles for post-disaster aboriginal relocation	To decide rules for relocation which is “moving within village”, “moving within township”, and “moving nearest proper location”

2009.9.6	Regional reconstruction master plan was pass the review	upper guidelines with land conservation for reconstruction
2009.10.9	To be drafted by the Council for Economic Planning and Development	To guide local reconstruction plan including civil infrastructure plan, community reconstruction plan and industry reconstruction plan

3.2 Reconstruction strategies

To deal with the situation in damage areas from rainfall and complaint procedure from residents, the government made the policy to keep the nature environment to meet the change of weather, crisis management, planning of integration for rivers, and cooperation between related institutions which can save the time to protect refugees from second danger when disaster occurs. Based on the policies, the measures were provided under the protection from the second damage of land preservation when process reconstruction and regular re-settle down and strengthen of management of areas and build strategies for communication with local residents. The statements above were put into practice by the principles for relocation of native tribes and schedule of land-preservation used for reconstruction. In order to promote the relocation program, the principles of relocation for tribes was announced on 4th September, and the Regional Reconstruction Master Plan was passed the review on 6th September, 2009 and to be drafted by the Council for Economic Planning and Development on 9th October, 2009 (See Figure 2).

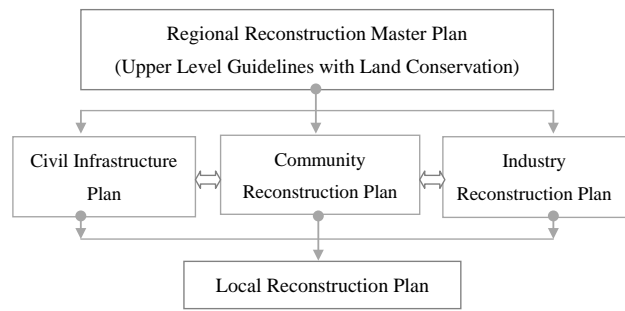


Figure 2 Framework of post-disaster reconstruction

4. COUNTERMEASURE OF PERMANENT HOUSING FOR RESETTLEMENT

After Morakot typhoon, the policy of government was based on relative laws to adopt measures for emergent accommodation of refugees and settle-down in a short term and mid-term. Three measures were provided to residents for community reconstruction, it included rental housing with family, reconstruction for purchase, and official reconstruction. Because residents were native in most case, and the reconstruction of tribes should be considered their tradition and culture background by local residents, the rental housing with family was chosen in most cases. To learn from Chi-Chi Earthquake about the problems of housing loan, the laws issued for housing-building charged by charity groups and religious organizations were also be claimed on 25th, August. The laws set the procedure including that government provide the land and make simple for housing building charged by charity groups and religious organizations. This procedure is a good example that the cooperation made between public sector and private sector for reconstruction. There were 3,452 housings (37 areas in total) constructed by the cooperation until 8th, August in 2011.

4.1 Assessment for safety of sites

In order to make sure the weakness of areas with sensitive environment and to meet the need of

reconstruction of community in the next step, it is essential to evaluate the weakness of environment. As the result, reconstruction committee process many evaluations on environment of the tribe areas native lived from 10th, September in 2009 to 22nd, June in 2010. The environment which should be evaluated includes areas with limited development (such as weakness of ecology, resource and landscape), previewed damage areas, public lands, and lands belonged to Taiwan Sugar and facilities nearby. There were 291 locations in total involving Taichung, Nanto, Yunlin, Chiayi, Tainan, Kaohsiung, Pingtung, and Taitung, and 160 areas among all considered dangerous where there were 62 native zones and 98 non-native zones (Morakot Post-Disaster Reconstruction Council, 2011). Those areas regarded as danger for ecological weakness were labeled as special zones forbidding development and previewed dangerous ones (See Table 2) where the reconstruction of community and evacuation of residents will be fulfilled according to related laws in advance. On the other hand, the residents living in special areas were granted superior right of application for permanent housing by Reconstruction Committee on 25th January in 2010, and the measure can decrease the anxiety of residents to special zones forbidding development.

4.2 Principles for environmental design

The principle of community of permanent housing is to respect ecological environment and select the safe location to build housings. The distribution of permanent housing was based on the relationship in original community which can keep closer relationship among residents in existed context. The permanent housings were built in townhouse style to meet the idea of green construction supported by religious groups. The constructions were classified as A, B, and C type: (1) A type: provide for family under 2 people with 46.28m² (About 144 square feet)

(2) B type: provided for family under 3~5 people in 3 rooms with 92.56m² (3) C type: provided for family under 6 people in 4 rooms with 112.4m².

Table 2 Status of unsafe zoning (until April, 2010)

Location	Development forbidden zone	Previewed dangerous zone	Total
native areas	26	36	62
Non-native areas	72	26	98
Total	98	62	160

Source: Morakot Post-disaster Reconstruction Council, 2011

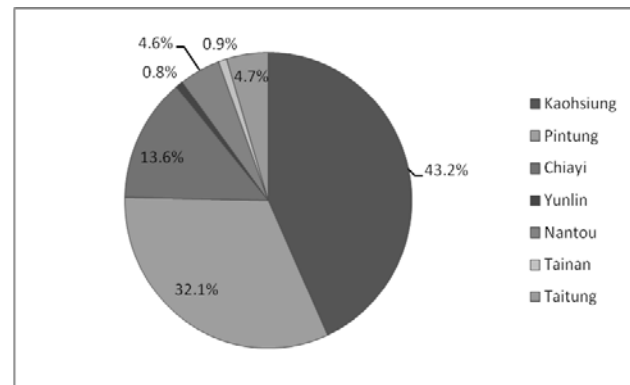


Figure 3 Percentate of household of applying permanent housing in each area

4.3 Qualification for application of residents

Residents can apply permanent housings in the unit of household and meet the condition below: (1) the present house cannot be lived in (2) living area currently is classified as the special zone forbidding development (3) area where living currently is classified as previewed dangerous area (4) The family losing the original house based on the special statute of land-acquisition. Until February of 2011, 4,567 cases were applied and the detail about percentage of each area was listed in Figure 3. Besides, if the residents who live in tribes decide to move by internal agreement and over 80% of tribe population, the county government and

native-committee can approve the move of whole tribe.

Table 3 Private groups for constructing permanent housing (until February 8, 2011)

Name of Group	Area (County)	Units	Percentage (%)
Chang Yung-Fa Foundation	Nantou	18	0.52
DDM Social Welfare & Charity Foundation	Yunlin	28	1.85
	Kaohsiung	36	
The Red Cross Society of R.O.C	Nantou	165	33.69
	Chiayi	395	
	Kaohsiung	210	
	Pingtung	346	
Buddhist Compassion Relief Tzu-Chi Foundation	Tainan	26	35.52
	Kaohsiung	1,028	
World Vision	Pingtung	172	19.96
	Taitung	47	
The Presbyterian Church in Taiwan and The Red Cross of R.O.C	Taitung	106	3.07
Uncertainty	Chiayi	143	5.39
	Taitung	43	
Total		3,452	100

Source: Morakot Post-disaster Reconstruction Council, 2011

4.4 Supports of private charitable organizations

The government provides lands and foundation to build permanent housing and NGOs support the part of construction. When moving to the permanent housing, residents can claim the ownership of house

and use of land. The land-base less than 1 hectare is adopted by NGOs, and bigger land foundation can be built in 49 % of subsidy provided by government. Until 8th, February in 2010, There were 6 NGOs supporting the construction of 3,452 permanent housings in 37 districts (See Table 3).

From Table3, it is found that NGOs supporting the construction of permanent housing mainly included Buddhist Compassion Relief Tzu-Chi, The Red Cross of R.O.C and World Vision. The characteristics of construction of each NGO were listed as follows:

- (1) Tzu-Chi Foundation: They stand for whole construction in one time. Since most refugees in Morakot typhoon were native with worse economic status, Tzu-Chi built housings to native directly (Morakot Post-disaster Reconstruction Council, 2011).
- (2) The Red Cross of R.O.C: They showed the respect of native culture and use empathy to communicate with residents. The Red Cross of R.O.C asked archeologists should receive training of native culture before design the building and kept frequent communication with native. The measure was appreciated by residents. Besides, considering the living habit, the area of individual housing is from 92.56m² to 112.4m² (from 1008 square feet to 1224 square feet) and respect to opinion from local government, 46.28m² were also provided to residents. (Morakot Post-disaster Reconstruction Council, 2011)
- (3) World Vision: They provided prefabricate housings, relay housings, and permanent housings. World Vision considered the family members will change in the future, to meet individual case; three kinds of housings can be selected by residents. For example, if the move of tribe can be decided in the short time,

prefabricate housing and relay housing (ecological house) are better. Both two kinds of housing can be changed to permanent housing in the future, when culture reconstruction is done in the community.

5. LIVING STATUS IN COMMUNITY OF PERMANENT HOUSING: CASE STUDIES IN CHIAYI AND PINGTUNG

In this section, we take the Zi-An Community in Chiayi County and Changjih Tzu-Ji Ta-Ai Community in PingTung County as objects to give the analysis of environment and reconstruction for use of permanent housing. The interview was conducted during the period from February to Jun of 2011 with residents, community staffs, The Red Cross of R.O.C, Tzu-Chi Foundation, and Local Government.



Figure 4 Plan of Luzijiao site

5.1 Zi-An community, Chiayi county

Zi-An Community is located in the land base of Fan Road Country Ruzijiao which was built by Red Cross of R.O.C, DDM Social Welfare & Charity Foundation, and government in lands belonged to Taiwan Sugar Company. There were 90 permanent housings on 3.91-hectare land (Figure 4) which were built during the period from 28th, March to 12th, September in 2010 where there were 70 households living in 92.56m²–House and 20 households in 112.4m²-House (See Picture 1 and Picture 2). Residents started moving to houses on 12th, September in 2010 and 86

households settled down and 4 units were regarded as Red Cross of R.O.C. facility, relief storages, sewage-work area, and flood-detention pool until now.



Picture 1 Outlook of 92.56m²-housing in Zi-An community



Picture 2 Outlook of 112.4m²-housing in Zi-An community

5.1.1 What residents thought about support from location government and NGO

The local government provided the land base of reconstruction, found the cooperation with NGO, and received the residents' applications for permanent housing. About arrangement for short term, the local government provided the subsidies and Red Cross of R.O.C provided the selection of permanent housing for residents and both of two provided supplies to residents. Red Cross of R.O.C held the orientation for residents several times. Red Cross of R.O.C just introduced the location and model of permanent housing, but provided neither the details of housing nor opportunity of communication for residents. It seems only to deliver

the information not change the opinion with each other. After the movement to permanent housing, Red Cross of R.O.C provide subsidies and shopping tickets to help residents buy furniture. Red Cross built a station and left staff to help residents adapt new life for 6 years. Instead, location government seldom keeps the communication with residents after moving to permanent housings. Through the community management meeting, residents discussed some issues about design of living environment, but some residents said Red Cross sometimes control the direction of meeting ,and could not communicate with Red Cross and local government.

5.1.2 Residents' living status and feedback

Since most residents cannot afford loan of reconstruction, most residents appreciated the permanent housing provided by government to process construction and agreed with the design of environment where permanent housings were built and arrangement of facilities. However, some community staff and residents had some opinions to share.

- (1) The location of permanent housing is out-of-the-way and not convenient when doing the shopping. As the result, residents hope stores can be arranged nearby.
- (2) After relocation, residents should spend much time in commuting longer distance for work (even over 30 km), or lost the work did before. In other words, the link among relocation, life, and work cannot be built after relocation.
- (3) There were not enough handicap-friendly facilities permanent housing where elders lived and the quality of space design, construction-materials, and facility was poor, the residents hope to improve the situation deeply.
- (4) Some residents the information about permanent housing which was received before location is

different with the experience after relocation. The permanent housing strengthened the meaning of accommodation instead of the function of living quality.

- (5) Most residents reflected that they were not granted the right or flexibility to change the living environment or archeology.



Picture 3 Outlook of 46.28m²-housing in Tzu-ji Ta-Ai Community

5.2 Changjih Tzu-Ji Ta-Ai community, Pingtung County

Changjih Tzu-Ji Ta-Ai Community was built in the first term of public lands in Ping Tung County. The area was 29.5 hectares with 164 households for 6 tribes living here after the Morakot disaster. From 26th, April to 6th, August in 2010, Native Committee, Tzu-Chi Foundation, and the government of Ping Tung County support the construction of 164 households of permanent housing in 29.5 hectares (See Picture 3). There were 3 sizes of house: 46.28m², 92.56m², and 112.4m². Residents started moving to houses on 6th, August in 2010. Until June of 2011, 152 households settled down but with no public facilities, such as meeting halls and churches which will be considered in the second term of construction.

5.2.1 What residents thought about support from location government and NGO

The local government provided the land base of reconstruction, helped settle down, made sure of the cooperation with NGO, and received the residents'

applications for relocation of permanent housing for whole tribe. About arrangement for short term, local government, Tzu-Chi Foundation, and other NGO provided relief supplies and subsidies to residents. About the choice of type of permanent housing and its environment, Tzu-Chi Foundation did a visit with native residents to permanent housing in San-Lin Da-Ai Community. Residents appreciated the assistance from Tzu-Chi, but also said that they do not have enough mutual communication with NGO on the design, style, and internal arrangement of permanent housing. After relocation, local government and Tzu-Chi Foundation provided furniture, facilities, and subsidies to support the reconstruction of life. Besides, the Committee of Community Management was held by 3 committers voted by the tribe members, and meeting was regular when making the decision on life rules and administrative issues. The record of discussion will be sent to county. Community residents, local council, and county government kept the communication with each other. After reconstruction, Tzu-Chi Foundation withdrew from the management of community and seldom communicated with the community.

5.2.2 Residents' living status and feedback

Because the residents living in Changjih Tzu-Ji Ta-Ai Community are natives and relocation of whole tribe, the local government persuaded the residents many times by culture-reservation, living-security, and tribe-coordination to deal with the relocation. Moreover, the relationship within the community is very close and tight, and residents appreciated the support from the government. The government also provided the service, such as hand-made drill, mental-care, and elders-nursing, and kept the close link with reconstruction of life and local industry. The traffic status and living environment was better than the past of no-disaster. Most residents kept a positive attitude to evaluate function of whole environment and life. The

opinions given by residents were listed below.

- (1) The community did not have the public facility like churches, and the assembly is not convenient. Besides, the problem of drainage and inadequate green environment were also reflected by residents.
- (2) Before relocation, residents were farmers. After the relocation, residents earned their life by doing the odd-job, but the life-fee is higher than the past after relocation, they hope other opportunities of a full-time job.
- (3) Most residents reflected that did not have adequate spaces and it was not easy to do the decoration or fix the instrument using to prevent rainfall on the outlook of buildings. Moreover, the external space was not enough to dry the clothes.
- (4) The quality of materials used to build the permanent housing is a little poor, and damage of space and water-drop sometimes occurs. For the reason, the design should be improved.

Based on the statement above, we could learn that location and nearby environment can give a big influence on life function of residents. Toward the support from public sector and NGO, most residents appreciated their helps. However, they also hope to won more communication with NGO and public sector on the related issues, such as reconstruction of quality of living, design of environment, and job-seeking. Besides, after relocation, the NGO which keeps concerning and taking care of residents' life will do a great favor on solving the problem caused by relocation.

6. CONCLUSION

This study analyzed the procedure of reconstruction in the post-disaster. We found the cooperation among public sector, private sector, and NGO is essential, and will give an influence on effectiveness. Besides, how to build a bridge to communicate the

government and residents by the NGO and private sectors is also important. The participation of residents and share of information can be fulfilled by NGO's support which is also the essential for reconstruction. According to process of relocation and reconstruction of permanent housings for disaster of Morakot Typhoon, there are two characteristics worth addressing:

- (1) The reconstruction based on mitigation of disaster: The principles provided by government of reconstruction schedule was based on the land security, and the lesson learned from landslides and mudflows also leads the relocation should be done in the relative safe environment. It meets the principle of reconstruction suggested by World Bank: mitigation of crisis of reconstruction in damaged areas is a factor which cannot be emphasized any more.
- (2) In the procedure of cooperation with public sector and NGO, central government evaluated the weakness of environment and made sure the principles and simplified the statutes for application, and location government chose the location, and provided the subsidies to build permanent housings with NGO. The cooperation can save the time of evacuation in shelters, and process the reconstruction under the safe environment. This principle also meets the division-labor in other countries of the world when dealing with the reconstruction.

When considering the policy-making on reconstruction, the government wants to link the ecology with continued development of community. However, after residents settling down in permanent housing, several issues still should be paid attention.

- (1) Building the communication system with residents during the process of reconstruction: Although the public sector makes the policy of construction of permanent housing and local

government keep cooperation with NGO, from policy-making to design of permanent housing, not all ideas can be received by all residents. Providing all choices to residents and building communication with residents can help coordinate others and get higher satisfaction from residents. It also can improve the effectiveness of reconstruction, if the government can meet residents' opinion to deal with the reconstruction and relocation.

- (2) Mitigating the influence on residents' life for the relocation: When settling down in permanent housings, several problems would occur, such as lost of job, inconvenience for out-of-the-way location, inflexibility of environment always turn the residents down and feel some gaps between reality and government's advertisement. It is essential to improve the software and hardware of permanent housing and keep cooperation with NGO to improve living standard of residents. The deeper and higher vision of reconstruction is more important than the vision limited to resources and only regarding permanent housing as the space for accommodation of refugees.
- (3) Necessity of taking-care, observing, and regularly evaluating for a long-term: When relocation is finished, in order to mitigate the impact of life caused by relocation, local public sector should take care with residents continually and private sector and NGO should develop the design of community for short-term, mid-term, and long-term. Though the evaluation on each stage and finding of issues related to reconstruction, the central government can take it as reference to adjust the policy of reconstruction.

Each community of permanent housing has its characteristic of environment, personality of

residents, and difference of life-reconstruction. Through the cooperation with public sector and private sector, we should respect the divergence from each community and keep communicating and hearing from opinions before provide the service. By this way, the reconstruction can be approached effectively and is not against to the principles of post-disaster reconstruction.

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