

Effectiveness of Reconstruction and Migration of Residents Following Typhoon Morakot -Examining Kaohsiung City's Shanlin Da Ai Community , Xiaolin Village , and Maya Village

Cheng-I Wang* , Kai-Ling Chen* , Chu-Chi Huang* , Shu-Hung Cheng*
Kaohsiung City Government Typhoon Morakot Post-Disaster Reconstruction Council *

ABSTRACT: Kaohsiung City was the region of Taiwan most severely affected in the aftermath of Typhoon Morakot, with the greatest number of victims. The most important issue the government must face is how to efficiently rebuild residences in the disaster area. The government must also care for the psychological adjustment, social organization, employment development, and cultural continuity of the residents after they are moved to safe regions.

A home reconstruction model was created for the special reconstruction conditions after Typhoon Morakot: The government acquires land and builds and maintains public facilities, while allowing non-governmental organizations (NGOs) to build permanent residences through private donations. These permanent residences, restricted by the principle of partial property disposition, are donated to the residents of the disaster zone free of charge.

This study uses interviews with residents and policy cross-analysis to investigate three migration models within Kaohsiung City: those of Shanlin Da Ai Community, Xiaolin Village, and Maya Village. The distribution of labor and models for cooperation between the local government, private NGOs, and resident reconstruction organizations are described from the dimensions of residential resettlement, community development, and cultural preservation. In addition, we examine the effectiveness of the implementation of permanent housing policies and the new problems resulting from them, along with the feedback, opinions, and reactions of residents toward the permanent housing rebuilding models.

Analyzing the strategies revealed that:

- (1) The concentrated permanent housing construction model for multiethnic groups in a new location, Da Ai Village in the Shanlin District, has great potential for community development. Although the overall cost was the highest yet, the reconstruction project provided an opportunity for creating new industry types and employment opportunities. However, concerns about the different standards of living of various ethnicities persist, which could lead to difficulties in inhabitant consensus and a hindrance to community development.
- (2) Single ethnic group, dispersed permanent housing construction model, Xiaolin Village; the relocation site was decided by respecting the autonomous wishes of the inhabitants. There was the highest level of inhabitant satisfaction and a high level of consensus for the inhabitants of the community. However, relocation was spread over three sites, and the community naturally developed into three organizations with

distinct focuses on development. The government's continued promotion is still necessary to conserve the Xiaolin traditional Pingpu culture.

(3) The overall cost of individual reconstruction at the original location model, the Maya Platform, was the lowest; but inhabitants have acclimatized more successfully and demonstrate high individuality with the housing.

KEYWORDS: Post-disaster reconstruction , Permanent housing , Residents migration , Da Ai Community, Xiaolin Village

1. INTRODUCTION

After the Typhoon Morakot disaster, 14 cities and counties throughout Taiwan were affected by large scale landslides in the mountainous and hillside areas. This resulted in poor geological conditions of the inhabited areas that proved problematic to stabilize within a short period. For the government, the most emergent problem that had to be resolved was how to complete housing reconstruction with utmost efficiency for the inhabitants of the disaster-stricken areas. Other factors, such as psychological adjustment, community organization, employment development, and cultural continuation of the inhabitants, also had to be considered after relocating the inhabitants to a safe area.

The special regulations of the Morakot Post-Disaster Reconstruction project created a model of home reconstruction: government land acquisition, the construction and maintenance of public facilities, and NGO organizations used private donations for the construction of permanent housing. Under the limiting principle of the partial disposition of property, permanent housing units are donated free of charge to the residents of disaster-stricken zones.

Kaohsiung City is the area of Taiwan that

was most affected by Typhoon Morakot. The major transport routes to and from the aboriginal areas were severely damaged. It was estimated that complete reconstruction would take over 5 years. Two years and 8 months after the Morakot disaster, residents of the Namasia and Taoyuan areas still relied on embankment sidewalks that traverse the riverbed for basic access. Because of unstable transport routes, the aboriginal areas were considerably isolated. A substantial amount of sand and stone accumulated on the riverbed from major alluvial that has raised the riverbed by 30 to 40 meters. However, because of the considerable transportation distance and the high cost of clearing, the raised riverbed has remained and currently poses a threat to the safety of aboriginal area residents. Therefore, the Kaohsiung City Government is acting in concert with the central government and their permanent housing policy to encourage residents to relocate to a safer area.

According to the permanent housing policy of the Executive Yuan, Taiwan, five permanent housing sites are in Kaohsiung City. This article focuses on the three resident relocation models (multiethnic group, relocation, concentrated permanent housing, Da Ai Village in the Shanlin District; single

ethnic group, relocation, dispersed permanent housing, Xiaolin Village; single ethnic group, original location, individual reconstruction of properties, the Maya Platform) within Kaohsiung City by referring to the associated issues that arose with the construction process of the Da Ai Village in the Shanlin District for a comparative analysis. The division of labor and mode of cooperation among the government, private NGOs, and local resident reconstruction organizations are discussed to evaluate the efficiency of executing the permanent housing reconstruction policy and the various difficulties that must be resolved.

2. COMPARATIVE ANALYSIS OF RELOCATION MODELS FOR DISASTER VICTIMS

2.1 Relocation, multiethnic, concentrated permanent housing model: the Da Ai Village in the Shanlin District

The Da Ai Village in the Shanlin District was designed to accommodate 1,500 permanent housing units. The first to be completed, it is the largest permanent housing site with 1,006 permanent units currently available.

2.1.1 Factors for considering the site location selection: (2009.8.20-2009.10.30)

- (1) The surrounding areas of the site are flat and safe.
- (2) The land on the site location owned by state businesses (such as the Taiwan Sugar Corporation) will be easily attainable.
- (3) Agriculture in the surrounding areas are thriving, with large agricultural plots exhibiting potential for development.
- (4) A Shanlin District Township Settlement Center is nearby, as well as a junior high school for functional livability.

(5) The geological location of the site is situated between the former township area and the Kaohsiung City metropolitan area. The distances from the site to the former residence location are: Namasia (Mingsheng), 50 km; Taoyuan (Meishan), 50 km; Maolin (Duona), 31 km; Xiaolin Village, 30 km; Liouguei, 32 km; and Chiah sien, 16 km. The distance from the location to the Kaohsiung City center is approximately 55 km.

Table 2.1 shows that Government and NGO involvement in the construction of public infrastructure in the Da Ai Village in the Shanlin District

2.1.2 Government counseling facilities for inhabitants in Da Ai Village (2010.2.11-2012.8.30)

(1) Establishing the Shanlin Life Reconstruction Center will provide six major categories of service, namely: psychological, employment, welfare (for the elderly, children and adolescents, the disabled individuals, and women), living, schooling, and others.

(2) Inhabitants are guided in launching and managing self-government organizations, such as the Da Ai Village management council. The management council will represent residents' independent opinions in discussions of public issues regarding the community, as arranged by the government and private NGOs.

(3) Guiding the residents in establishing community organizations will focus on the community organization's direction of development (such as living care, industrial development, and marketing tourism) and provide financial support for the projects.

(4) Installation of employment service stations will provide a continued liaison between employment and provision of employment information.

(5) Provide short-term, temporary work programs that recruit community residents for community infrastructure construction, maintenance of community environment, and providing life care for senior citizens.

(6) Provide occupational skills training and community human resource empowerment programs, and train residents in technical skills for future employment.

(7) Guide residents in establishing industrial co-operatives (aboriginal crafts workshop, sewing lessons, labor cooperatives) with a gradual undertaking of orders and jobs to eventually become a fully autonomous operation.

(8) The central government will routinely assemble a Pulami Project to integrate government departments to fully support and guide residents in their industrial livelihood development.

2.1.3 Efficiency evaluation of Da Ai Village in the Shanlin District, and other issues that require continued resolution

(1) Residents' overall satisfaction with the permanent housing units were high.

The permanent housing units in Da Ai Village in the Shanlin District have incorporated permanent housing, organic farming, religious facilities, a junior high and primary school, and major public facilities. In addition, the housing units have provided the community with an economic basis for business and development of the site. This has enabled the rapid one-step settlement program of the residents. Because the units have provided a safe living location with stable educational resources nearby, as well as future livelihood development possibilities, most residents are quite satisfied with the arrangement.

The Ministry of Interiors, Taiwan, has conducted a satisfaction scale survey on the residents of Da Ai

Village in the Shanlin District one year after the Morakot disaster, and the results were 89% (Yan, 2011). Various investigations were conducted with specific reference to the community area, community environment living standards, residence interior environment, residence exterior environment, culture and relaxation, public facilities, and safety management. The overall satisfaction rate was 83.51%. This rate had no significant correlation to ethnicity.

(2) As a result of the link between culture and life, the permanent housing units are still closely connected to their original place of residence

Although the original aboriginal tribal areas were still deemed danger zones, residents whose plantations were a source of income were still in the tribal areas and would often travel between the units and their original place of residence if the houses at the tribal areas were not destroyed. The unit may not be a place of daily residence but becomes the family's shelter during storms. The housing units and the culture (even the economy of the tribe) are still closely connected.

(3) Nursing care of the elderly requires special attention

For the elderly who have relocated into the permanent housing units, taking the initiative to provide care and food and maintaining the interaction between neighbors in the community is critical. Integration and communication between the reconstruction center and the community management council are necessary to provide nursing care to the community's elderly.

(4) Strengthen resident community-based organizations and guide the autonomous development of the residents

Community-based organizations and industrial cooperatives established by the residents rely primarily on continued contributions from the government and NGO resources. The weak motivation for autonomous development has become a major hindrance to the community's industrial development. The city government will increase training and guidance to the community organizations. Communities with inefficient and ineffective executions will not be provided with further financial assistance to allow for its eventual fallout. Resources will instead be directed to community organizations that show strong mobilization and strong community loyalty for participation in counseled cooperative projects.

(5)Autonomy of individual ethnic areas assists in stabilizing the community

Different ethnic groups have different living habits and cultures. There were often conflicts in the initial stages of the relocation. After two years of fusion and integration, the Da Ai Village's four different ethnic groups (Namasia, Taoyuan, Hanming, and Xiaolin) still preferred to manage themselves autonomously in separate groups according to their respective opinions on community integration.

(6)The primary task is creating employment opportunities

Currently, the community economics and functional living of the Da Ai Village is still insufficient. Because employment opportunities are limited, the city council is accelerating its investment in commercial facility projects and construction, as well as working to improve the holiday bazaar business environment to improve tourists' willingness to buy, thereby creating employment opportunities for the community.

(7)Assist residents in improving merchandise quality and competitiveness

The handicraft products developed within the community were effective. However, the quality and gracefulness of the aboriginal performance groups had to be improved. The city government and central government will continue its support in the cultural and creative counseling program to support community handicraft and performance trainees for further training at professional institutions and advancing their technical skills.

(8)Guide and support the young and middle-aged working population in steady employment

Short-term temporary work projects have overcome the short-term employment obstacles. However, some of the young people were content as is and were unwilling to seek out constant work with future prospects in other locations. The temporary work projects should decrease and government should instead concentrate on the training of technical skills to guide the young people into the normal employment market.

(9)Community crime and security awareness

Drinking, fighting, street racing, stealing, and other such community crime have become increasingly prominent. After discussion, it was agreed upon to guide the community in establishing a community watch and patrol team to assist the police in autonomously maintaining community safety.

2.2 Single Ethnic group, dispersed model of permanent housing reconstructions: Xiaolin Village

After the typhoon disaster, the residents of Xiaolin Village voluntarily and independently chose to

divide their reconstruction into three areas. Sixty-two families, who agreed to cooperate with the government's permanent housing policies, first moved into the Xiaolin Community within Da Ai Village in the Shanlin District. Those who chose to remain in Xiaolin Village for reconstruction totaled 89 families. The government chose Wulipu, a site neighboring the original Xiaolin location, for the reconstruction of the Xiaolin Village.

120 families who adamantly refused to move into the units in the Shanlin District requested that the units be built according to their specifications. After one year of court appeals, dismissals, and communication, the government has finally agreed to establish a third Xiaolin Village permanent housing site neighboring the Shanlin Organic farming area, the Sunlight Xiaolin Community. The combined analysis of the three permanent housing sites for the Xiaolin Village is shown in Table 2.2

The three permanent housing sites for Xiaolin Village were all single ethnic group, miniature communities. This made the consensus within the community better than that of Da Ai Village in the Shanlin District. At the initial stages of site development, appropriate public facilities and cultural facilities were incorporated into the design. Therefore, at the completion of the Xiaolin Village permanent housing units, the main issues requiring continual government attention were the continuation of the Pingpu tribe culture, as well as the development of industrial livelihood. With special reference to the continued Xiaolin Pingpu tribal culture and community bonding for the Xiaolin Villagers who are now separated in three areas of residence, the city council will focus on the developmental issues of the following to provide persistent care and support:

(1) Sustain Xiaolin Pingpu tribal tradition and culture

An important cultural event for the Xiaolin Village is the annual Xiaolin Pingpu night festival on September 15 (Lunar Calendar). The main reason for the ritual is to commemorate the Pingpu guardian Alizhu. With the support of the village elders, government, and private sponsors, the surviving Xiaolin villagers (as well as others who have returned for the reconstruction) have continued the tribal bloodlines and traditional culture and carried on with the traditional Xiaolin cultural night festival since the disaster. The continued organization of the traditional festival, even under such a grievous atmosphere, has served to unite and encourage all Xiaolin Villagers.

(2) Create a Xiaolin Cultural Tour in cooperation with the Xiaolin Pingpu Tribal Heritage Museum, and Xiaolin Memorial Park.

(3) Assist in the exposure and marketing of the Xiaolin Village workshop handicrafts and other creative merchandise.

(4) Develop community industry by increasing the water sources for agricultural irrigation and elevating the agricultural production capacity of the Xiaolin neighborhood in Wuli pu.

2.3 Single ethnic group, original location, individualized reconstruction model: the Maya Platform

The individualized housing reconstruction plan for the Maya Platform is a unique case in the post-disaster reconstruction of Typhoon Morakot. The site was situated on the Maya Platform, Namasia District, Kaohsiung City. The original Maya tribal village was situated along the path of a landslide caused by Typhoon Morakot. Post-disaster evaluation by experts endorsed by the Council of Indigenous Peoples, Executive Yuan, proclaimed the

entire village area to be an unsafe zone. The Maya Platform is situated above the original village on the river terraces. This was the previous location for the tribe. The platform was relatively flat and, after evaluation, was deemed a safe zone. The city government made plans to reconstruct Mingchuan Primary School, the Office of Health and Hygiene, and Police Station to be used as disaster evacuation centers for the Maya villagers.

The Maya Platform is a safe area for housing reconstruction. The Maya villagers were unwilling to relocate to the Shanlin Community some 50 km away. Thus, with the support of the Red Cross Society of the Republic of China, under the project of “the Red Cross Society of the Republic of China Morakot Disaster Individual reconstruction grant project”, residents were subsidized for their own independent construction of permanent housing on the platform. The housing construction was supported by NTD 40,000 per ping (1 ping = 3.3 m²) with a maximum grant of NTD 1.12 million. The Red Cross Society agreed to support 96 families; furthermore, the World Vision Organization also followed the guidelines of the Red Cross Society to support 15 families.

The lands used for the Maya Platform individual reconstruction were private land owned by the residents individually. The land was also categorized for construction use, allowing building permits for housing to be applied for immediately. The construction issues involved in the individualized reconstruction units were led by a Maya reconstruction council formed by the residents.

Concurrently, based on past experience with the 921 earthquake reconstructions when some individual residents became bad debtors, leading to difficulties in payment after construction of the units, the

Kaohsiung City Government created a specialized account for this project. The Red Cross Society deposits NTD 1.12 million into the specialized account. The city council then pays the construction companies according to the rate of building construction. The city council also initiates support for the various construction management processes and soil and water conservation regulations. Twenty-one families in the first phase of this program have already commenced building. Comparisons between the individualized reconstruction and the permanent housing cases are shown in Table 2.3

3. ADVICE AND ANALYSIS OF EFFECTIVENESS FOR THE MORAKOT HOUSING RECONSTRUCTION MODELS

(1)The permanent housing reconstruction model could effectively and successfully accomplish long-term settlement for disaster-stricken residents.

Da Ai Village in the Shanlin District represented a model of large-scale permanent housing reconstruction away from the original homeland where multiethnic groups co-exist. The reconstruction project could effectively accomplish the permanent settlement of numerous victims within a short period. This is also the most vital task of any nation’s government in response to natural disasters on such a massive scale. A large permanent housing plot enabled the planning of a more complementary set of public facilities and supportive measures such as business centers and organic farming areas. This provided positive benefits for the community and industrial development of the permanent housing site. Da Ai Village chose to use a concentrated housing model. The land is state-owned, thus limiting the residents’ independence regarding the house. However, the highest amount of funding by both the

government and NGOs were invested in this project. Concurrently, opportunities for creating new industries and employment opportunities are available. The worry for the community development involves the different living habits of the ethnic groups, which could cause a difficulty in community consensus.

(2)The key to successful relocation into permanent housing units in a new locality is in providing industrial livelihood and employment opportunities.

Although Da Ai Village in the Shanlin District falls under the model for reconstruction in a new location, for residents of the Chiahsien, Shanlin, and Liouguei Districts, their original homeland is within 30 km. Most of the Hangming villages are similar in lifestyle. The government planned to reimburse lands and houses within certain allocated areas for acquisition. For residents of damaged houses in the homeland or houses situated within the demarcated area and who owned little agricultural possessions in the area, most were willing to relocate into the Da Ai Village with high satisfaction results as well.

Da Ai Village in the Shanlin District is approximately 50 km away from the aboriginal tribal villages. The aboriginal tribal way of life is greatly different from that in the Shanlin District. Most aboriginal communities are closely knit and, even though they were considered disadvantaged, tribal residents were accustomed to sharing with each other and the community, thereby reducing their expenses. For the residents that have relocated to Da Ai Village in the Shanlin District, if they cannot find employment opportunities within the community area, they would be required to return to their homeland to work the land or obtain temporary jobs to maintain livelihood. If the community cannot provide employment opportunities, some of these aboriginal residents might be forced to move back to

their homeland.

(3)Residents should be responsible for a portion of the construction fees involved in the permanent housing units to reflect the true requirement for the units, as well as to conserve the funds invested for reconstruction.

Regarding the permanent housing reconstruction model, it may be feasible for the inhabitants of the units, through policy design, to be responsible for a portion of the reconstruction fees (such as 20% to 30%). Socially disadvantaged families could be recognized through social support systems for further government subsidies on their responsible portion of the reconstruction fees. This could be useful in decreasing the pretentious need for permanent housing, which could drastically lower the total amount of NGO housing units being built, as well as to protect charitable donations and public investments from being wasted.

(4)Individualized housing reconstruction model is the most cost-effective and affordable advantage of autonomous development. However, the disadvantage is the vast amount of time required.

The Maya Platform is a model of individualized reconstruction. Because of its reconstruction at the original tribal location, the land is still privately owned by the residents; therefore the government and NGOs invested the least amount in reconstruction funding. The residents, though, experienced the greatest acclimatization and independence regarding their housing. However, because resident organizations were used for leadership and promotion, a disadvantage was seen in the duration of the period. If the government could more enthusiastically guide the residents in forming a more efficient reconstruction organization, the

amount of time required for the settlement should be greatly reduced.

(5) Dispersed model of permanent housing reconstruction must face issues such as community dissolution and continuation of traditional culture.

Regarding the Xiaolin Village reconstruction model, the government accepted the resident's suggestion of settlement according to dispersed permanent housing units. Appropriate permanent housing units were constructed by respecting the autonomous wishes of the residents. Resident satisfactory level was the highest. As a result of the three different locations for settlement, the community has naturally evolved into three organizations with different developmental focuses. The Xiaolin traditional Pingpu culture requires the continued promotion of the government to conserve the Xiaolin Pingpu cultural rituals to maintain and sustain cultural heritage.

REFERENCES

1. Kaohsiung County Government "Building a new homeland from love and hope—Kaohsiung County Typhoon Morakot post-disaster reconstruction record" 2010.12

2. Executive Yuan, Morakot Post-Disaster Reconstructive Council "Reconstruction of sustainable homelands through innovation and cooperation," 2011.7

3. Yan, Syue-Ying, "The study of the satisfaction of living quality and the improvement needs to the resident who live in the permanent supportive house—In the case of Da Ai Village, Shan Lin District," National Sun Yat-sen University, Institute of Public Affairs Management, Master's Thesis, 2011.9

4. Executive Yuan, Morakot Post-Disaster Reconstructive Council, "Cultural conservation and

bloodline heritage—Reconstruction of Xiaolin Village," 2012

5. Morakot Independent News Network (<http://www.88news.org>)

Table 2.1 Government and NGO involvement in the construction of public infrastructure in the Da Ai Village in the Shanlin District

	Government	NGO organizations
Ordinary facilities	Phase 2 road foundation infrastructure, detention pond, elevated tap water tower, community activity centers, green parks	Permanent housing 1,006 units, four community public classrooms, two senior centers, assembly square, sewage treatment plant, Phase 1 roads, combination sports courts
Cultural and educational facilities	<ol style="list-style-type: none"> 1. Aboriginal cultural park. 2. Government-owned land reserved for construction of churches, temples, and shrines. 3. Two hectares of land designed as miniature farm space available for senior citizens (66m² per person) to rent for vegetables or horticulture. 	Primary School, two churches
Industrial development facilities	<ol style="list-style-type: none"> 1. Business facilities and travel information center. 2. Assignment of an 18-hectare large agricultural plot where the government will be responsible for establishing irrigation systems. Willing persons will be coached in agriculture. Each family has 0.2 hectares available to rent for subsistence farming. 	Holiday bazaar

(Information collected by this research)

Table 2.2. Comparing the three permanent housing sites for Xiaolin Village

	Da Ai Village—Small Love Community	Wulipu—Xiaolin Community	Sunlight Xiaolin Community
Site area		5.81hectares	5.87hectares
Administrative area	Kaohsiung City, Shanlin	Kaohsiung City,	Kaohsiung City, Shanlin

	District	Chiahsien District	District
Settlement type	Reconstruction at relocation 30km away from original Xiaolin Village location	Reconstruction in safe areas of the original tribal land	Reconstruction at relocation 29 km away from original Xiaolin Village location
NGO support	Buddhist Compassion Relief Tzu Chi Foundation	The Red Cross Society of the Republic of China	The Red Cross Society of the Republic of China
Families settled	62	89	120
Completion date	2010.2.11	2011.1.15	2011.12.24
Public facilities	<ol style="list-style-type: none"> 1. Mingzhu Da Ai Primary School 2. Community Events Center 3. Life Reconstruction Center 4. Community Business Center 5. Holiday Bazaar 6. Temples—Land God Temple 7. Green parkland 	<ol style="list-style-type: none"> 1. Xiaolin Primary School 2. The Pingpu Ancestral Public Shrine 3. Pingpu Tribal Heritage Museum 4. Mothering Center 5. Xiaolin Village Memorial Park 6. Xiaolin Village Ancestral Hall 7. Temple—North Pole Palace 8. Community Kitchen 9. Crafts workshop 10. Community Events Center 11. Green parkland 	<ol style="list-style-type: none"> 1. sports fields 2. Culinary Classes 3. Xiaolin Workshop 4. Overall environmental atmosphere of the community houses 5. Green parkland
Industrial types of the residents	<ol style="list-style-type: none"> 1. Largely agricultural 2. Most are elderly 3. Most residents had no source of income at the 	<ol style="list-style-type: none"> 1. Largely agricultural 2. Most residents had a source of income at the original Xiaolin residence, 	<ol style="list-style-type: none"> 1. Dynamic industry 2. Most residents had no source of income at the original Xiaolin residence

	original Xiaolin Village	such as plantations	3. Most young people who have returned for the reconstruction are concentrated here
Direction of future developments	Goal unclear	Xiaolin with Culture, emphasis on Pingpu	Xiaolin in Industry, youthful spirit
Living and cultural integration	<ol style="list-style-type: none"> 1. Annually, September 15 (lunar calendar) is the birthday of the Xiaolin Ancestor, night festival of the Xiaolin Pingpu 2. Annually, August 8, Xiaolin Ancestral Hall, prayer to commiserate forefathers of the Xiaolin Village 3. Xiaolin religious center—Wulipu, North Pole Palace 		

(Information collected by this research)

Table 2.3 Comparing the Maya Platform reconstruction plan and the permanent housing plan in Da Ai Village in the Shanlin District

Project Name	Maya Platform	Da Ai Village in the Shanlin District
Housing reconstruction program	Individualized reconstruction program	Permanent housing program (30 km distance from original Xiaolin Village)
Applicable Regulation	Red Cross Society of the Republic of China Morakot Disaster Individual reconstruction grant project	Morakot Post-Disaster Reconstruction Special Regulation
Settlement location	Maya Platform—2 km from original village	Shanlin District—50 km from original village
Land ownership	Resident privately owned land	State owned land acquired through acquisition by the government
Maya families settled	The Red Cross Society 96 families The World Vision Organization 15 families	Da Ai Village accommodates 1,006 families
Source of funding for housing reconstruction	NGO supplemented NTD 1.12 million	NGO fully responsible cost of building for the main structure of each house is NTD 2.5 million
Housing structure construction responsible unit	Residents formed a Maya Reconstruction Council and privately hired architects and construction companies for the building	Reconstruct support by NGO

Unit responsible for public facilities	Residents responsible for cost of the building and clearing of private alleys and streets	Government responsible for funding and building
Public facilities	No public facilities in the site but neighboring primary school, health office, and police station	Church, school, community events center, community classrooms, elder center, business facilities, park square
Construction period	2012.1.15 to 2013.3.30 (still under construction)	2009.11.15 to 2011.8.27 (Construction complete)
Discrepancy in unit usage rights	Housing unit and land belonged to the resident and they are free to use it as seen fit.	The housing unit is owned by the resident but the land is owned by the state, the house cannot be transferred, rented, or pawned.
Future for the community	The surrounding land around the housing units are privately owned land; the community can use it for expansion.	Land of the permanent housing site is state owned and cannot be used by the resident; the community may only expand through usage planning of the overall regional lands surrounding the site location.
Program restriction	Maya residents who do not own land available for building cannot apply for housing reconstruction.	The villager's residency in the original village is forfeited after relocation into the permanent housing units.

(Information collected by this research)