

# The Impact of Post-Disaster Relocation on Community Solidarity: The Case of Post-Disaster Reconstruction after Typhoon Morakot in Taiwan

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**Abstract**—Typhoon Morakot hit Taiwan in 2009 and caused severe damages. The government employs a compulsory relocation strategy for post-disaster reconstruction. This study analyzes the impact of this strategy on community solidarity. It employs a multiple approach for data collection, including semi-structural interview, secondary data, and documentation. The results indicate that the government's strategy for distributing housing has led to conflicts within the communities. In addition, the relocating process has stimulated tensions between victims of the disaster and those residents whose lands were chosen to be new sites for relocation. The government's strategy of "collective relocation" also worsened community integration. In addition, the fact that a permanent housing community may accommodate people from different places also poses a challenge for the development of new inter-personal relations in the communities. This study concludes by emphasizing the importance of bringing social, economic and cultural aspects into consideration for post-disaster relocation..

**Keywords**—community solidarity, permanent housing, post-disaster reconstruction, relocation.

## I. INTRODUCTION

TRADITIONALLY, major disasters were regarded as special cases in human history. However, due to their increasing prevalence, major disasters have become a norm in human society [1]. The management of major disasters has thus become an important issue in modern society.

Major disasters generated various needs, including housing support for the affected population. When major disasters hit and destroy numerous homes, housing support becomes a challenging task for post-disaster reconstruction. If major disasters damage the landscape and make the residential areas uninhabitable and force the inhabitants to relocate, housing reconstruction becomes a severe challenge for post-disaster reconstruction. In such cases, people living in affected communities would need to be relocated. The tasks for post-disaster reconstruction thus involve not only housing support for the victims, but also community reconstruction.

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This paper takes housing reconstruction after typhoon Morakot in Taiwan as an example to analyze the impact of post-disaster relocation on community solidarity. Typhoon Morakot hit Taiwan in 2009 and caused severe damages in several areas. Some villages are considered unsafe for habitation due to the damages. In response to this situation, the government employs a compulsory relocation strategy for post-disaster reconstruction. This strategy has caused enormous impacts on affected communities. This paper will focus on its impacts on community solidarity.

In addition to the introduction, this paper contains four parts. The first discusses challenges of post-disaster relocation and its potential impacts on community solidarity. The second introduces methods employed by this study, followed by discussions and analysis of the findings of this study. The last concludes the study.

## II. CHALLENGES OF POST-DISASTER RELOCATION AND ITS POTENTIAL IMPACTS ON COMMUNITY SOLIDARITY

According to a report produced by the United Nations, there are different strategies for long-term settlement of disaster victims after major disasters, including: helping the victims to rebuild houses at the same plot, helping individual victims to purchase or to rent housing in different places, providing suitable housing for the victims by the government or NGOs, and to reconstruct new housing, community asset and public infrastructure in a new site for the victims [2]. It is a complex matter to choose among these strategies for post-disaster reconstruction. Many factors need to be taken into account, including the degree of changes in landscapes, conditions of damages of buildings and the willingness of the victims. If the decision is to construct new housing and infrastructure in a new place to relocate affected people, it's a strategy of collective relocation.

Collective relocation is more than moving a group of people from one place to another. It's a complex process involving several stages, including the selection of a building site, the obtainment of building land, the design of buildings, the distribution of housing, the planning of environment and the development of livelihood. All these stages need sophisticated management or the relocation may turn out to be another disaster [3]-[6]. In addition, all of these stages are important in terms of making a safe home and a strong community for the affected population. Collective relocation is more than the construction of physical buildings; it also has political, social

and cultural dimensions [6] [7].

Pass experiences documented in the academic literature indicate that collective relocation, whether it is caused by military conflicts, public reconstruction or mess nature disaster, rarely succeeded [3], [5], [8] As [5] indicates, removing a group of people from the place they have been familiar with to another place might cause cultural and environment crisis which could lead to a new disaster. However, when homes and landscapes are destroyed by nature disaster and are no longer safe for habitat, collective relocation becomes the sole option for post-disaster reconstruction [3].

Coburn and his colleagues propose a definition of success collective relocation. They argue that a successful collective relocation means the new community can rely on its own resources and has the capacity for self-reliance. They also stress the importance of the residents' willingness to take the new place as their permanent home and to start investing resources in the new place [9]. Reference [10] also emphasizes that collective relocation for disaster victims is more than accommodating of affected people. The competent party should also look into the long-term adaptation and community development of people being removed.

The collective relocation after Typhoon Morake in Taiwan is more severe as most people needed to be relocated are ethnic minority groups who had lived in aboriginal areas for generations. Aboriginal groups respect the nature environment and have a strong connection with their land. For them, collective relocation means a total change of interpersonal relationship and social identity. In addition, collective relocation will force them to change their livelihood as many of them relied on agricultural and forestry for living. Although many aboriginal people in Taiwan have experienced migration, most from their homeland to cities for jobs, they hold a strong connection with relatives in their homeland. For them, migration only means changing places for livelihood. Their belongingness to homeland continues [11], [12].

Many aboriginal people lost their homes in the mountain area where they had lived for generations due to the damage of Typhoon Morake. In addition, many of these areas have been marked as unsafe for residence. Collective relocation becomes inevitable.

### III. METHOD

This study employs a multiple strategies for data collection. Major sources of data come from qualitative interview and document analysis. For the qualitative interview, a total of 37 people were interviewed through individual or group interviews. Interviewees include people working in local government and NGOs involved in post-disaster reconstruction and people lived in affected communities. The interviews are semi-structural. An outline of the interview was provided to the interviewees before the interview was conducted. The sampling method employed is purposive sampling, to insure that people from different parties are included in the interviews.

Regarding document analysis, this study use materials from different sources for analysis, including records and reports produced by government bodies, meeting minutes of local

organizations, written materials made by post-disaster reconstruction workers, officials and affected people. Some of these materials contain valuable information on the policy formation of collective relocation and the situation of people affected by this policy.

### IV. FINDINGS AND DISCUSSION

Unlike the post-disaster reconstruction after the 921 Earthquake in 1999 when victims of the disaster were offered different options for temporary housing, including providing a temporary housing, rental assistance and preferential rights for purchasing social housing, post-disaster reconstruction after typhoon Morake skip the temporary housing stage and go directly into the permanent housing process. The main reason behind this is the government's intension to avoid similar problems as happened during the temporary housing process after the 921 Earthquake [13].

After the deconstruction of the Typhoon, people learn the disastrous consequence of improper conduct towards the Mother Nature and the public opinion strongly appeals for a strategy that would allow the Mother Nature to recover by itself for post-disaster reconstruction. This strategy means that a better strategy for post-disaster recovery is not to reconstruct building and infrastructure in the original sites in the mountain areas, but to remove people from the affected areas to other places. However, collective relocations would involve the provision of large quantity of housing to accommodate affected people. It implies the need to invest enormous budget into the construction of housing projects.

The NGO's willingness to take over the responsibility for the construction permanent housing for affected people provides a timely solution to the government's concern of budget constrain [13], [14]. Several nationwide NGOs managed to attract huge amounts of donations from the public for post-disaster reconstruction. With these financial resources, they have the capacity to build housing to accommodate victims of the disaster.

With the cooperation of NGOs, the government started to set the collective relocation into action after related articles were passed by the parliament. From the dimension of In terms of execution, the process of relocation includes three major stages: evaluation of the safety of the affected areas, building permanent housing and relocation of people from affected areas to the new housing.

Some communities located in affected areas experienced a split up of their communities at the first stage of relocation. This is due to two factors: the government's strategy to link the entitlement for permanent housing with safety evaluation and people's divided opinions on post-disaster reconstruction. According to the government's reconstruction policy, only those who lived in areas being evaluated as unsafe are eligible for permanent housing. In addition, according to reconstruction regulations set by the government, those who lived in "unsafe areas" should move into permanent housing and are thereafter forbidden to return to their original home, which has been evaluated as in an unsafe area. Safety evaluation and delimitation were conducted by teams consisted of government

officers and experts from different areas. Their decisions were to be confined by people lived in the area. If they accepted the evaluation as unsafe, then they were all entitled to permanent housing given that they agreed not to return to the affected area. If they didn't accept the decision which delimited their homeland as unsafe, then they would not be eligible for permanent housing and had to rebuild their homes at the same area. People lived in the same area has to reach an agreement and make their decision.

This regulation has created a dilemma for people lived in the affected areas. Some wanted to stay and refused to take the deal for relocation, while others wished to accept the permanent housing and leave their original place for good. Those who wanted to leave have different reasons. Some could not bear to stay at the place where their beloved families lost their life, some felt it difficult to restart their life at the destroyed homeland, and some wanted to seize the opportunity to take the permanent housing where located nearer to urban compared to their original home to develop a new life. For those who wished to leave, they had different concerns. To begin with, leaving the homeland where one's family has lived for generations is difficult enough. It is even harder for the affected aborigines whose life and belief are strongly connected to their land. In addition, many of them feared that moving from the farming area to be near urban might lead to a dramatic increase of living cost.

Those who refused to leave resisted the government's decision on delimiting their home land as an unsafe area, a decision welcomed by those who wish to take the permanent housing. In some affected areas, this disagreement split communities into rival factions. In some areas where there were only a small portion of people holding the different opinion, people from the other party criticized them as being selfish and lacking a sense of unity. In many communities, reaching a consensus on whether to stay at the original area or to move to a new place became impossible.

The government's strategy to solve this problem was to amend relocation regulations to break the linkage between entitlement for permanent housing and the delimitation of unsafe areas. After the amendment, if the evaluation team's decision of "unsafe" was not accepted by its residents, that area became a "potential risky area". Families lived in these areas could either stay at the same place to rebuild their homes or to take permanent housing, providing that they agree not to return to the place. In other words, the decision on relocation or not was no longer made by the community as a whole but by individual people. To this point, people lived in the same affected areas could make different decisions on whether to be relocated or not. This strategy solved the problem of the impossibility for some communities to reach the consensus for relocation. However, under the new strategy, a community was no longer a unit for action and the sense of community solidarity collapsed.

With lands and infrastructure provided by the government, NGOs started building permanent housing. Locations for new housing were decided by the government. According to reconstruction regulations, the two most important

considerations for the selection of a building site are: safety and livelihood. For the livelihood of the affected people, the principle was to build new housing as near their original homes as possible [13]. However, in many cases there was no site suitable for building new housing near affected people's original homes. For many affected people, long-distance relocation became inevitable. They therefore faced the challenge of developing new social network in the new place.

In cases where a nearby site was available for permanent housing, threats to community solidarity remains. Some building sites selected by the government were private-owned properties. In some cases the owners wish to keep the land as their own refuges in case of future disasters. Under such circumstances, conflicts arose between individual interest and community reconstruction. This has led to tension between land owners and other residents in the same community [15].

There are also cases in which a new building site is not spacious enough to accommodate all people from the same affected areas. In these cases, affected people from an aboriginal tribe had to be relocated to different places. Geographic division makes it difficult for people from the same tribe to maintain their social ties.

However, geographic separation does not necessary mean it's impossible to maintain social connection, especially for people from the same tribes who share strong ties of blood. Sialin Village presents a good case for the discussion of community solidarity disaster. After the disaster, some people wanted to stay and rebuild their homes at the same area, while others decided to move away for a new life. Those who survived through the disaster were distributed to three permanent housing communities, one near their original homes and other two near the town. The existed social network broke down and a village became divided. Although their original tie of blood serves to connect people in the three places, retain the connection between people from the same village became a severe challenge.

The government's policy was to take community as a unit for relocation. People lived in the same affected area were all to be relocated to a same permanent housing. However, as discussed earlier, in some villages, residents' opinion on whether to stay or to leave differed. In addition, suitable places for building permanent housing for accommodating people from the same village were not always visible. As a result, it is not uncommon that people from different villages have to live in the same permanent housing. The construction of a new community tie has thus become a challenge. However, there are some potential strengths for communities facing these conditions to build a new community tie.

First, there are strong commitments for residents in the permanent housing community to take the new place as their permanent home. This is due to the fact that most of their original homes were completely destroyed by the disaster and they have no place to return to. The commitment to build this new place as their permanent homes drives them to care community affairs. This is an important asset for the development of community solidarity.

Second, residents of the permanent housing, despite coming

from different areas, share the same experience of loss in the disaster. The same experience helps them to build empathy toward others in the same community. It also generates mutual help behaviors in the community. In some permanent housing communities, residents' have made efforts for developing programmes for helping aged people in the same community.

Thirdly, there are new bloods joining the new communities after the disaster. Some people born in the affected areas left the home to big cities for work now returned to the community after the disaster. The disaster became a catalyst for young generations who have moved out of their tribe to value the culture and relationship with people in their tribe. Some of them join the permanent housing community to live with their family and to build the new community together. These young generations have better knowledge on managing organization and developing programme than direct victims of the disaster. They also know better on finding resources outside the community. In many permanent housing communities, newly-joined young generations have become a big help for community development.

Fourthly, resources from public sector play a key role in community reconstruction. Many people from affected areas lost all their properties and assets. It is impossible for them to find resources needed for getting their life back. Under such circumstances, resources from the government and the society are important. If a disaster causes large-scale damages, it is vital that the government concentrates resource from the public sector to help affected people. The building of permanent housing for affected people involves not only the investment of money but also the obtainment of land and the construction of buildings and infrastructure. In the case of post-disaster reconstruction after typhoon Morake in Taiwan, it is almost impossible if there were not the government's efforts to help with these issues. The government also has a good position to co-ordinate organizations involved in post-disaster reconstruction for improving the efficiency of reconstruction. This is important for affected people who wish to build a strong new community after disaster.

#### V. CONCLUSION

Relocation of disaster victims is always a challenging task for agencies involved in disaster reconstruction. It is important to note that relocation of disaster victims is more than moving a group of people from one place to another. To build a strong community is important for people moving from different areas into the same place. If affected people are to build a permanent home after the disaster, the developing of a strong community solidarity is important. It is vital for agencies involved in post-disaster reconstruction to recognize this issue and to help them building a strong community

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