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ABSTRACT

NGOs’ assistances for post-disaster permanent housing of vulnerable population are commonly used in developing countries, and it is anticipated to be effective in developed county. This study use the case of government-NGO collaborations for permanent housing recovery after Typhoon Morakot in Taiwan to examine the effectiveness of this strategy. The findings show that the housing quality of impacted households have improved after event by the assistances of government-NGO collaborations. However, community relocation combined with the assistances also cause livelihood, cultural, and sense of community issues.

Keywords: government-NGO collaboration, housing recovery, community relocation, vulnerability

Introduction

In developed countries, it is common that adopting a market-driven approach mixed with supplementary government assistances to facilitate housing recovery after major disasters. However, many vulnerable households may be excluded from the mainstream of housing recovery policy due to lacking of repayment capability or eligibility issues. In contrast, NGOs’ assistances for post-disaster housing of disadvantaged people are common in developing countries. Base on the experiences of developing countries, government-NGO collaboration can fill the gap of current housing assistance policies in developed countries. Even more, the approach may be used as an initiative to encourage households relocated to safer area to reduce future risk. However, housing recovery is a complex process; we can anticipated that government-NGO collaborated housing assistances have advantages and disadvantages. By exploring the pros and cons, the policymakers can avoid the drawbacks and better utilize the advantages of government-NGO collaborated housing assistance programs. The experiences of post-Typhoon Morakot housing recovery in Taiwan is a valuable case for researchers to examine the characteristics of government-NGO collaborations for housing recovery in developed countries.

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Literature Review

The strategies for housing recovery are diverse due to the characteristics of the individual society and event. For example, many researchers have suggested that housing recovery in the U.S. is primarily a market-driven process [1][2][3][4][5][6][7]. In the U.S., emergency and temporary sheltering are usually operated by American Red Cross, The Salvation Army, and other national and community-based NGOs. Other than Section 8 voucher, U.S. Federal Government also provides temporary housing such as manufactured housing and recreational vehicles for eligible individuals or households [2][3]. U.S. Federal Government does not provide financial or direct assistance for permanent housing unless under specific conditions (such as insular areas out of the continental U.S.). For major disasters in developing countries, such as the 2004 Indian Ocean earthquake and tsunami, NGOs around the world provide substantial supports in assisting housing recovery [7][8].

During permanent housing recovery phase, pre-disaster inequalities and normal market failures can be amplified because of financial resource constrain. In general, renters, low income, and minority households take longer to recover to pre-disaster housing status [1][3][10][11][12][13][14][15]. Neighborhood and community characteristics also play significant roles in housing recovery [3][10][16]. Many researchers have pointed out that social inequality is amplified after disasters. Governments often adopt policies of “one size fits all,” which makes it hard for housing assistance programs to cover all of the special needs of different cases in different events. NGOs, which are more flexible than government, may become one of the critical elements for safe and sound recovery, especially for vulnerable groups. For example, in the 1999 Turkey earthquake, NGOs provided more appropriate assistances, than the Turkish government, including using local resources, providing earning opportunities, and placing maintenance responsibility on the residents [17].

Although NGOs’ role in post-disaster recovery is critical, the studies of recovery experiences in developing countries also pinpoint several problems of NGOs’ post-disaster housing assistances. For example, the studies of Davidson et. al. [18] in Columbia, El Salvador, and Turkey show that lacking of community participation and empowerment can undermine the vitality of communities. The relocations integrated with NGOs’ assistances in Thailand, Sri Lanka, and India do reduce future tsunami risk, but increase livelihood vulnerability of the fishing population by limiting their access to coast [18][19].

Methods

This study integrates qualitative and quantitative methods to present the contexts of government-NGO collaborated housing assistance program in Taiwan following Typhoon Morakot and the practices of the 3 selected cases, Re-an (Luzijiao) Site in ChiaYi, Shanlin Da Ai Site in Kaohsiung, and Rinari Site in Pingtung. This study comprehends the data from focus groups, in-depth interviews, governmental publications, and freelance journals to describe the policy making of government-NGO collaborated housing assistance program and the progression of the 3 cases. This study also analyze the survey data of households with housing damage, collected by National Science and Technology Center for Disaster Reduction, to measure the
housing recovery trajectories of the 3 cases.

**Forming of “Permanent Housing First” Policy after Typhoon Morakot**

Typhoon Morakot hit Taiwan in 2009, causing 699 death/missing and leaving over six thousand dwellings damaged or under unsafe condition. Most of the Typhoon Morakot impacted residential buildings were in rural areas or aboriginal tribes, and the financial resources of the impacted households were relatively limited. Central government first provided permanent housing assistances such as “low-interest loan” or “up to USD $167,000 down payment subsidy”, however, only about 40 households applied and approved. In addition, most of the impacted villages/tribes were in high-risk areas vulnerable to debris flow, so they were encouraged to relocate to safer places assessed by experts.

In order to solve the financial constrains of housing recovery for impacted households and encourage relocation for mitigation, central government announced the “permanent housing first” policy 18 days after the typhoon. Under the policy, central government acquired land and constructed infrastructures, while the NGOs built permanent housings by utilizing donations. The ownership of housing will then be transferred to the eligible household [20]. However, due to the limited availability of safer land close to impacted communities and the effective construction process in larger site, the large-size public lands in plain area (distant to original communities) were welcomed by both governments and NGOs for permanent housing reconstruction. Finally, the “permanent housing first” policy was transformed to “community relocation” in some extent. The government also announced a relocation priority policy as “relocation within the village” as the highest priority, and then “relocation within the township”, and finally, “relocation to the nearest proper location.” In reality, many of the impacted villages could not find proper sites within their original villages or townships. The statistics of permanent housing are listed in Table 1. 3,497 of the 3,561 housing units have been provided to the eligible households by September 2014.

<table>
<thead>
<tr>
<th>County/City</th>
<th>No. of Housing units</th>
<th>No. of Projects</th>
<th>No. of Sites</th>
<th>Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nantou</td>
<td>186</td>
<td>4</td>
<td>4</td>
<td>Jugong, Yongfeng, Mingjian, Nantou</td>
</tr>
<tr>
<td>Yunlin</td>
<td>28</td>
<td>1</td>
<td>1</td>
<td>Dongxing</td>
</tr>
<tr>
<td>Chayi</td>
<td>518</td>
<td>8</td>
<td>6</td>
<td>Re-an (176 units), Ju-re, Xixin, Luman, Leye, Saviki, Forest Compartment, Pu-nan, Dapu</td>
</tr>
<tr>
<td>Tainan</td>
<td>26</td>
<td>1</td>
<td>1</td>
<td>Yuching Da Ai</td>
</tr>
<tr>
<td>Kaohsiung</td>
<td>1,269</td>
<td>7</td>
<td>6</td>
<td>Shanlin Da Ai I/II (1,006 units), Wulipu I/II, Lele, Longsing, Baushan</td>
</tr>
<tr>
<td>Pingtung</td>
<td>1,306</td>
<td>14</td>
<td>8</td>
<td>Changzhi Baihe I/II, Rinari I/II (483 units), Xinchi Farm, Nanan Farm I/II, Old Gaoshi, Zhongjian Road I/II, Xinfeng</td>
</tr>
<tr>
<td>Taitung</td>
<td>228</td>
<td>8</td>
<td>7</td>
<td>Deqi, Taihe, Old Dawu Elementary School, Jinfu, Jinlun, Kaaluwan I West/I East/II, Dazhu</td>
</tr>
<tr>
<td>Total</td>
<td>3,561</td>
<td>43</td>
<td>33</td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Summary of permanent housing projects by county/city
Housing Recovery of Three Major Government-NGO Collaboration Sites

The study cases, Re-an (phase I and II), Shanlin Da Ai (phase I and II), Rinari (phase I and II) are the major government-NGO collaboration projects for “permanent housing first” policy in 3 heavily impacted areas, Chiayi County, Kaohsiung City, and Pingtung County. The 3 sites are sponsored by three different major NGOs, Red-Cross, Tzuchi, and World Vision, and each site has different race characteristics (Table 2.)

This study uses the qualities of bedding, bathing, cooking, space, and privacy from survey data to measure housing quality (scored from 5 to 25 to represent poor to excellent/lux housing quality) pre- and after event. The housing quality index dropped dramatically after Typhoon Morakot, but bouncing back when moving to permanent housing site. Among the 3 study cases, residents in Re-an project report the highest housing quality, which has exceed pre-event level. Despite the improvement of housing quality, several issues related to livelihood, culture, and ownership have been reported by residents.

Table 2. Characteristics of government-NGO collaboration cases and housing recovery progresses of their residents.

<table>
<thead>
<tr>
<th>Title of projects</th>
<th>Sponsor NGO</th>
<th>Date of completion</th>
<th>Major race of recipient</th>
<th>Housing quality Pre-disaster</th>
<th>1 month after</th>
<th>1 year after</th>
<th>2 years after</th>
<th>3 years after</th>
</tr>
</thead>
<tbody>
<tr>
<td>Re-an I/II n = 42</td>
<td>Red-Cross</td>
<td>I: Aug 2010</td>
<td>Han</td>
<td>mean 15.62, S.D. 2.696</td>
<td>11.67</td>
<td>13.43</td>
<td>15.02</td>
<td>16.79</td>
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<tr>
<td></td>
<td></td>
<td>II: Dec 2011</td>
<td></td>
<td></td>
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<tr>
<td>Shanlin Da Ai I/II n = 344</td>
<td>Tzuchi</td>
<td>I: Feb 2010</td>
<td>Mix</td>
<td>mean 16.35, S.D. 2.543</td>
<td>12.18</td>
<td>15.03</td>
<td>15.39</td>
<td>15.06</td>
</tr>
<tr>
<td></td>
<td></td>
<td>II: Oct 2011</td>
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<tr>
<td>Rinari I/II n = 71</td>
<td>World Vision</td>
<td>Dec 2010</td>
<td>Aborigines</td>
<td>mean 16.42, S.D. 3.294</td>
<td>10.60</td>
<td>10.90</td>
<td>15.23</td>
<td>15.00</td>
</tr>
<tr>
<td>Other projects n = 381</td>
<td></td>
<td></td>
<td></td>
<td>mean 16.19, S.D. 2.705</td>
<td>11.8</td>
<td>14.56</td>
<td>15.44</td>
<td>15.52</td>
</tr>
</tbody>
</table>

Conclusions and Discussions

The findings of this study show that housing recovery following Typhoon Morakot through government-NGO collaboration is efficient and effective for vulnerable households. However, decision makers and other stakeholders should pay more attentions on impacts of livelihood, cultural, and sense of community when the permanent housing project causes distant relocation,

References

2. Comerio, M. C. *Disaster hits home: New policy for urban housing recovery*. Berkeley: University of California


