Housing Recovery Issues and Experience after Two Major Disasters in Taiwan

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Introduction

Taiwan is located on the Pacific Ring of Fire, making it a country frequently affected by earthquakes. Additionally, it lies in the main path of typhoons in the Western Pacific, where abundant rainfall brings the risk of floods and landslides. Over the past 25 years, Taiwan has experienced two major disasters: the Chi-Chi Earthquake and Typhoon Morakot.

On September 21, 1999, the Chi-Chi Earthquake, with a magnitude of 7.3 on the Richter scale, struck central Taiwan. It resulted in 2,494 deaths, 11,305 injuries, and the partial or complete destruction of 84,255 buildings, with economic losses exceeding NT$364.7 billion. From August 6 to 10, 2009, Typhoon Morakot brought unprecedented rainfall, causing severe flooding in the central, southern, and southeastern plains of Taiwan, as well as catastrophic landslides and large-scale collapses in mountainous areas. This disaster resulted in over 700 deaths and economic losses exceeding NT$200 billion. Given that many residents in mountainous areas are indigenous people, 72.48% of the victims were Indigenous.

These two disaster events caused significant losses in Taiwan. Post-disaster housing reconstruction is a daunting and lengthy task. However, due to differences in the main affected areas, victims, and building types, the challenges and issues faced in post-disaster housing reconstruction vary, and the experiences of housing reconstruction are worth exploring.

Housing Recovery Issues and Policies after Chi-Chi Earthquake

In 1999, during the Chi-Chi Earthquake, the building types in Taiwan's rural areas were predominantly standalone houses (detached or terraced houses), while urban areas had a mix of standalone houses, apartments, and condominiums. Since the earthquake's epicenter was in Nantou County in central Taiwan, the damaged buildings were mainly rural standalone houses. In urban areas, the damage was mostly to condominiums, with about 162 condominium buildings (approximately 11,543 units) being destroyed.

For fifty years prior to the Chi-Chi Earthquake, Taiwan had not experienced such a massive disaster, so there was no significant experience in large-scale post-disaster housing reconstruction at that time. The concept of "community-based" reconstruction, promoted through the community-empowerment initiative launched in Taiwan in 1994, was applied to rural post-disaster reconstruction. This approach helped unite residents and build consensus to rebuild their homes together. Good examples of this are the reconstruction of the Taomi community and Chunglaio old street in Nantou.

In the same year before the earthquake, Taiwan had just enacted the Urban Renewal Act, which was utilized for the reconstruction of condominiums affected by the Chi-Chi Earthquake. Due to the relatively complex property rights of the land and buildings of condominiums, some owners might have perished in the disaster or been dispersed to various locations, making it difficult to gather and reach a consensus for reconstruction. This led to slow progress in the reconstruction of these residences. To address this issue, the 921 Earthquake Reconstruction Foundation, funded by government donations, proposed the "Linmen Project" to resolve the low agreement rates among property owners for urban renewal. Despite this, the completion rate of condominium reconstruction remained significantly lower than that of standalone houses.

Housing Recovery Issues and Policies after Typhoon Morakot

Due to over 70% of the victims of Typhoon Morakot being Indigenous people, the Taiwanese government initially proposed the policy of "Relocation without leaving the village, and if leaving the village, not leaving the township" for Indigenous housing reconstruction. This aimed to relocate residents away from disaster-prone areas but rebuild near their original locations, ensuring the Indigenous people's "Three-in-One: Life, Production, Ecology" lifestyle concept.

However, due to poor management experiences with transitional housing during the Chi-Chi Earthquake reconstruction, the central government sought to bypass the transitional housing stage and have NGOs build free permanent housing directly. Skipping the transitional housing phase created significant time pressure for reconstruction. There was insufficient time to discuss and reach a consensus on the selection of permanent housing sites and the forms of permanent housing. This led to the proposal of very large permanent housing sites far from the original residences during the early reconstruction phase. Although the policy was later revised, it ultimately resulted in permanent housing sites that were both "far from the village and far from the township." Statistics show that there are a total of 43 sites across Taiwan, with approximately 3,561 permanent housing units.

Conclusion and Suggestion

"Market-driven," "same-site reconstruction," and "community-based" were the key characteristics of the post-Chi-Chi Earthquake reconstruction. In contrast, government and NGO assistance for free permanent housing and relocation to safer areas were the primary features of the recovery after Typhoon Morakot. While housing reconstruction is important, emphasis should also be placed on the recovery of livelihoods. This includes not only "physical" recovery but also "software" recovery, such as jobs, community networking, and cultural preservation.

Relocation, although a good policy for hazard mitigation, must seriously consider the issues of Indigenous community networking and culture, especially for Indigenous communities. For future relocation and reconstruction of Indigenous communities, the concept of "pre-disaster reconstruction preparedness" can be adopted. Achieving consensus through communication and planning before a disaster can shorten the post-disaster housing reconstruction timeline.