

## **Housing Recovery by Type of Resident Involvement - Providing Housing vs. Mobilizing Residents -**

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This paper reviews housing recovery strategies and categorizes housing recovery into three types to describe their characteristics through case studies of the Great Hanshin-Awaji Earthquake in Japan, Hurricane Katrina in the United States and the Central Java Earthquake in Indonesia. The authors categorize housing recovery into "providing housing" and "mobilizing residents" types which are characterized by how residents are involved in housing recovery. In the former type, residents receive housing provided by a third party, such as government or non-profit sector etc. The latter type mobilizes residents' power for housing reconstruction with outside assistance such as government subsidies and volunteers' construction labor. The "mobilizing residents" type is a simple method for housing recovery which supports residents to regain stability in their lives after disaster. One more type of "mobilizing residents" is not limited to individual housing reconstruction, but also includes "community-driven housing reconstruction" for neighborhood recovery which enables residents to return to their former communities. The "mobilizing residents" type has positive effects such as minimizing relocation and supporting continuity of housing recovery which leads to social and physical sustainable recovery of neighborhoods. Finally, the authors consider better ways of housing recovery after the Great East Japan Earthquake by learning from past disaster housing recovery experiences.

**Keywords:** *Housing Recovery, Stakeholder Involvement, Neighborhood Recovery  
Great Hanshin-Awaji Earthquake, Hurricane Katrina, Central Java Earthquake*

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### **1. Introduction**

This paper shows how housing recovery is affected by stakeholder involvement. Through case studies of the Great Hanshin-Awaji Earthquake (1995) in Japan, Hurricane Katrina (2005) in the United States and the Central Java Earthquake (2006) in Indonesia, the authors categorize housing recovery into "providing housing" and "mobilizing residents" types which are characterized by how residents are involved in housing recovery. In the former type, residents receive housing provided by a third party, such as government or non-profit sector etc. The latter type mobilizes residents' power for housing reconstruction with outside assistance such as government subsidies

and volunteers' construction labor.

The "mobilizing residents" type is a simple method for housing recovery which supports residents to regain stability in their lives after disaster. One more type of "mobilizing residents" is not limited to individual housing reconstruction, but also includes "community-driven housing reconstruction" for neighborhood recovery.

This paper reviews housing recovery strategies and categorizes housing recovery into three types to describe their characteristics, and positive and negative effects based on interviews with stakeholders and housing reconstruction surveys. Finally, the authors consider better ways of housing

recovery after the Great East Japan Earthquake (2011) by learning from past disaster housing recovery experiences.

## 2. Providing Housing Type

The providing housing type is defined as residents receiving housing provided by a third party, such as government or non-profit sector etc. This type is typical in Japan, where after disaster the government sector provides public rental housing for survivors who cannot afford to rebuild their housing by themselves. In this type of housing, the provider is not limited to the government sector, but also includes non-government and non-profit organizations who construct housing after disaster, a pattern mainly seen in developing countries. This section describes characteristics of “providing housing type” in Japan, Indonesia and the United States.

### 2.1 Public Housing after the Great Hanshin-Awaji Earthquake (1995)

In the entire earthquake-affected area the scale of damage after the Great Hanshin-Awaji Earthquake on January 17, 1995, included the collapse of approximately 250,000 buildings and the loss of 6,434 human lives. The government of Kobe City prepared an Emergency Three Year Plan for Housing Reconstruction, and decided to provide 10,000 units of public housing, which correspond to 12.5% of housing damage in Kobe. The target residents were low-income and elderly, who were mostly tenants before disaster. Figure 1 is one of the largest (post disaster recovery?) public housing estates in Kobe. The housing provided by the government sector is good quality with quick provision in large numbers. It was effective to provide affordable public housing, with the lowest rent of 6,000 yen per month, and stabilize the lives of victims who cannot afford to buy or rent a house by themselves because of age, income, and other difficulties.

However, many studies after the Great Hanshin–Awaji Earthquake pointed out the problems of this housing recovery type such as destruction of local communities, standardized housing plans and designs, concentration of elderly in public housing estates which makes it difficult to form community and work on housing management. Housing recovery in Japan relies too heavily on this type and lacks other options. The housing recovery we can see now in Kobe, 17 years after the earthquake, is the result of middle class households' self-help housing reconstruction with less assistance from the government sector.



Figure 1. Public Housing Estate in HAT Kobe, Nada-Ward

### 2.2 Non-government housing provision in developing countries

On May 27 2006, a 6.3 magnitude earthquake struck Central Java and Yogyakarta in Indonesia. Over 5,700 lives were lost, 154,000 houses were completely destroyed, and 600,000 people were left homeless. Figure 2 shows monolithic dome houses constructed by a U.S. non-government organization, Domes for the World Foundation (DFTW), in the village of New Ngelepen, Yogyakarta province, Java Island, Indonesia after the Central Java Earthquake. DFTW was tasked with rebuilding houses for the residents of Ngelepen village by applying its expertise in the construction of environmentally friendly homes that can withstand the severe effects of natural disasters. Each home cost about US\$1,500.

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The completed village in a new location is comprised of 71 houses, common facilities such as laundry, toilet and shower facilities, a mosque, primary school, playground and medical clinic. These homes were completed 7 month after the disaster.



Figure 2. Monolithic Domes House constructed in Indonesia

The authors visited this project in March 2009. It is true that the structure of this house is resilient for wind, storm and earthquake damage, however, the problem is that the style of the houses is quite different from victims' previous houses so it does not meet their demand for a house. For example, we found that about 40% of the residents expand their dome houses. The most popular expansion is a kitchen where they can cook using wood and not by gas planned for the dome houses. This expansion is shown by figure 3; residents expand their house to fit



Figure 3 Kitchen Expansion for Dome House

the dome house into their way of living and the style of their previous house before disaster. In addition to the style of houses, Sleman Province government was asked by residents to construct a cattle shed in this project site. Most residents earned their living by raising cattle before the earthquake. What they need is not only houses but also to sustain their living. The outside assistance providers tend not to listen to and understand victims' needs for housing. The value of the housing they provide is speed and quality and the fact that it is free. However, they lack understanding of peoples' housing recovery demands to sustain their living as before disaster.

### *2.3 Non-government and non-profit housing provision support in developed countries*

Figure 4 shows housing constructed by a non-profit organization funded by world famous actor, Brad Pitt, in the Lower 9<sup>th</sup> Ward of New Orleans, where more than 4,000 homes were destroyed after Hurricane Katrina. Hurricane Katrina was the most destructive natural disaster in American history, and its storm surge and levee breach caused more than 1,300 casualties and submerged 80 percent of the New Orleans. Two years later, when he toured the city, the neighborhood was still deserted and devastated. Pitt founded the non-profit organization called "Make It Right" to build 150 affordable, green, storm resistant homes for families living in the Lower 9th Ward. The value of these houses can be described as their cutting edge design, energy efficiency and sustainable green architecture, elevated housing safe for future flooding. The U.S. Green Building Council says Make It Right is building the largest, greenest neighborhood of single-family homes in America. It is true that this organization makes a visible difference by constructing housing in this neighborhood. However, it is quite an extraordinary scene that well-designed and elevated housing with solar panels stands in the most low-income neighborhoods where residents lived in small houses

such as shotgun houses which are local and vernacular architecture. Also, it is questionable that is it sustainable and the best way to provide free homes for people without any cost, sustain locality and utilizing peoples' power to rebuild their living. The outsiders treat victims as powerless and incapable to recover their lives in this type of housing recovery. (Also, only SOME of the former residents can receive these houses.)



Figure 4 Sustainable House built by non-profit organization in Lower 9th Ward, New Orleans

### 3. Mobilizing Residents type

The "mobilizing residents" type is a simple method for housing recovery which supports residents to regain stability in their lives after disaster. However, this type has not been historically promoted by the Japanese or U.S governments whose national housing policy is market driven. This chapter describes poor government assistance for individual housing recovery in two countries, and shows two good examples that mobilize residents' power to rebuild their house in Kobe, Japan and Kasongan village, Indonesia.

#### 3.1 Government assistance for individual housing recovery in Japan

In Japan, there is a great deal of resistance by national government to use taxpayers' money for private property. This is one of the main reasons that

government support for individuals' housing recovery is very limited in Japan after disaster.

How much money was provided by the government to rebuild detached private housing after the Great Hanshin-Awaji Earthquake? The assistance was in the form of loans and relief funds to pay interest on loans for buying housing by using the 600 billion yen "Great Hanshin Earthquake Recovery Fund" established by Hyogo Prefecture and Kobe City government.. In five years, a 19.7 billion yen grant was spent for 18,251 units. The average amount per unit is 1 million Yen. In Kobe, it usually cost 30-50 million yen to buy a detached house. The money was too small to assist and empower residents' housing recovery. Government provided public housing which cost 15 million yen per unit. This shows how large the government assistance gap is between public and private properties.

The Act on Support for Reconstructing Livelihoods of Disaster Victims, enacted in 1998 by a social movement in Kobe after Great Hanshin Earthquake, aims to support the recovery of livelihoods. Together, national and prefectural governments provide up to 3 million yen for each household who had severe or major housing damage. However, this act prohibited the use of this money for victims' housing reconstruction money, just because government does not want to agree to use taxpayers' money to pay for private properties accumulation. This act was revised in 2007 after Japan experienced the Niigata Chuetsu Earthquake (2004), Noto Peninsula Earthquake (2006) and Niigata-Oki Earthquake (2007).

The first local government support for individual housing reconstruction was begun by Tottori prefectural government after Tottori West Earthquake (2000). The governor took strong leadership for this policy, which provided 3 million yen for each household who had major housing damage. He had a strong belief that if homeless victims cannot get

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enough support for their housing reconstruction, it will lead to acceleration population decline in rural areas. After this, local governments who experienced earthquakes have started to prepare their own local grants to provide almost the same amount as Tottori Prefecture. As described above, though only gradually, Japanese government has expanded support for individual housing reconstruction.

### ***3.2 Government assistance for individual housing recovery by the State of Louisiana after Hurricane Katrina in the United States***

In the United States, the situation is very similar to Japan whose national housing policy is market driven. Fothergill (1999) shows that those with lower socio-economic status often have less insurance, less savings, fewer personal resources and previous economic problems that impinge on their ability to re-establish permanent housing.

Louisiana State's Road Home program after Hurricane Katrina is the largest housing rebuilding assistance program for homeowners in the history of disaster in the United States. Eligible homeowners affected by Hurricanes Katrina may receive up to \$150,000 in compensation for their losses to help them get them back into their homes. Though it is the largest compensation in U.S. history, the speed of housing recovery in the City of New Orleans is very slow, and also there are large neighborhood gaps in terms of housing stock provision and property sales (Kondo, 2012b). There are many problems concerning in this program such as delay in the payment of subsidies, the decrease in urban population resulting from relocation elsewhere in the state or out-of-state due to the options offered under the program, and the disadvantages under the program for low-income people because the compensation grants are determined on the basis not only of housing damages but also the pre-storm value of the property (Kondo, 2012a).

It has also proved that providing housing rebuilding

assistance only at the individual level is not effective to promote neighborhood level recovery. Individual decisions to return influence neighbors. In addition, beyond housing, residents also need places to work, study, shop, and get medical care to come back to their neighborhood. The City of New Orleans government lacks strong leadership and a comprehensive strategy to enable recovery of peoples' housing, social infrastructure and community networks that support neighborhood recovery.

### ***3.3 Self-help temporary housing***

One of the best examples to show residents' power and energy to reconstruct their housing is "Self-Built Temporary Housing" seen after the Great Hanshin-Awaji Earthquake. Shiozaki (2009) found that more than 5000 units of Self Built Temporary Housing were constructed, which had a very positive effect for residents, such as being able to stay in their neighborhood without relocation, maintaining the sense of community, and ease in expanding their self-help temporary housing by their own decisions and timing. Shiozaki proposes an increase of government support for this kind of housing because it would be more cost effective and sustain residents' lives and communities compared to temporary housing provision which forces victims to relocate and destroys their communities, and has no continuity from temporary to permanent housing.

### ***3.4 Core House***

The core house is a form and type of construction that was used in multiple places in disaster area after the Central Java Earthquake, and has been used in low-cost housing in Indonesia for decades. It is constructed as a minimum housing unit that is stable and secure, and can be extended to meet the needs of the residents. The principle of the core house is quick rebuilding of permanent housing and a minimal housing unit with an adaptable form. This strategy supports residents to sustain their living through a

smooth transition into permanent housing without relocation, and residents' expansion activities based on their own speed and needs. The survey conducted in September 2009 of 16 households in Kasongan village, who had received a core house, all had expanded their core houses (Maly, 2011). The core house may have given the residents more flexibility over their own rebuilding process, as they can use phased expansion when it makes the most sense to them, and they have the resources.

Through the case studies of self-built temporary housing in Kobe and core houses in Indonesia, residents exercise their power to recover their lives and housing. With adequate support to utilize their power, the housing recovery can maintain community ties and sustain peoples' living environment through this type of housing recovery.



Figure 5 Core house and its expansion

#### 4. Community-driven housing reconstruction

One more type of "mobilizing residents" is not limited to individual housing reconstruction, but also includes "community-driven housing reconstruction" for neighborhood recovery which enables residents to return. Through community-driven housing reconstruction, residents work together to negotiate where and how to reconstruct their housing. It is more common in the United States for neighbors to form a community development corporation (CDC) to develop housing owned by the CDC. However,

when we say community driven housing reconstruction, the ownership of housing stock is not limited to cooperative housing associations but also includes individual ownership. In case of neighborhood recovery planning, such as land readjustment projects in Japan, residents discuss where and how to build parks and community roads, and swap their properties in order to make neighborhoods resilient for fire and earthquake. When the topic of discussion becomes housing itself, it is called community-driven housing reconstruction.

Many neighborhoods want local government to construct temporary housing and public housing in their community, not in suburban areas, which requires them to relocate. They want to enable neighbors to stay in their neighborhood to keep community ties and sustain their lives like before disaster. However, local government (where? In Japan?) did not respond to this request, because they explain they cannot construct public housing properties on privately owned land.

##### *4.1 Housing Reconstruction by neighbors' negotiation and construction labor*

One example of this third type housing recovery is the expandable and transitional housing "core house" showed in section 3, which has another characteristic of being "community-driven". The local government decided to provide the money in cash for homeowners, and the decision of how to distribute funds was made by community groups called POKMAS. In most villages local people belonged to neighborhood groups before the earthquake, and have a traditional way of working called 'gotong royong,' which is a way of working together to take care of a range of needs facing their communities. Community groups themselves decided who in their group needed a house first, and groups of neighbors worked together to construct their houses in turn.

##### *4.2 Community Development Corporation*

In New Orleans after Hurricane Katrina, several

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community development corporations have been established by residents to promote their neighborhood recovery. They have focused not only on neighborhood housing development but also commercial development, both of which are elements for survivors to come back to their neighborhoods and restart their lives.

Neighborhood Stabilization Program by Department of Housing and Urban Development was designed to help communities with large numbers of blighted properties. New Orleans Redevelopment Authority (NORA) the funding agent monitors a 16-member consortium of for-profit and not-for-profit partners who work in targeted neighborhoods to redevelop residential properties, demolish blighted structures and/or land bank foreclosed properties in order to stabilize and redevelop. NORA owns approximately 14,000 properties including 5,000 acquired through the Road Home program, mentioned in section 3.

In 2001, the NORA sought to retake property back from owners who had purchased blighted property but had failed to redevelop it (Rusell, 2001). NORA would expropriate clusters of blighted properties, and market the properties to non-profit developers for low-and moderate income housing (Green, T. and Olshansky,R, 2009). This system was applied after Hurricane Katrina. The conditions that NORA requires for non-profit developers are community involvement, affordability, clustering properties, ensuring safety, and sustainable design.

The Pontchartrain Park Community Development Corporation (PPCDC) was established in December 2007 to protect and restore New Orleans' historic Pontchartrain Park community which was developed for an American-African population to become homeowners in 1960s. Their mission is to restore neighborhood characteristics and promote housing development so that neighbors can come back to community to restart their lives. NORA transferred 94 properties to PPCDC through the Neighborhood

Stabilization Program. They are also planning to redevelop housing acquired from neighbors who cannot afford to rebuild by themselves. PPCDC builds community capital through the investment of earned developer fees in a community endowment or community asset fund. They provide technical and financial support for neighbors to buy housing mortgage. Figure 6 shows a model house that PPCDC is planning to develop for neighbors.



Figure 6 Model House by PPCDC

There are mainly two reasons that New Orleans needs community-driven housing developments. First, housing compensation targeted for individuals does not lead to neighborhood recovery. New Orleans is experiencing a “Jack o’ lantern” effect which means densely populated neighborhoods are coming back in bits and pieces, leaving some very sparsely populated. They might need swapping and clustering properties and community-based holistic recovery including housing, retail and social infrastructure. Secondly, the City of New Orleans expects community development corporations to act as local housing providers to develop housing using buyout properties through the Road Home program. The community power and capabilities for recovery might affect the speed and form of community recovery, just because leadership of local government is very weak.

The "mobilizing residents" type of housing

reconstruction has positive effects such as minimizing relocation and supporting continuity of housing recovery, which leads to social and physical sustainable recovery of neighborhoods. Most importantly, when community takes initiative in recovery activities, they can achieve their neighborhood recovery goals.

### **5. Housing Recovery after Great East Japan Earthquake**

On March 11, 2011, the magnitude 9 earthquake that struck off the coast of north east Japan was followed by a massive tsunami that killed almost 20,000 people and displaced more than 350,000 residents. There is also that risk in the Tohoku region to experience a “Jack o’ lantern” effect after the Great East Japan Earthquake, which has similarities with Hurricane Katrina such as long term evacuation of survivors and widespread destruction of the built environment. In the context of a society whose population is decreasing, in a place that cannot avoid population decline by disaster, it is necessary to think of how not restore the area as it used to be, but clustering neighborhoods through properties transfer, relocation, and clustering to regenerate the neighborhoods considering population loss, decreasing risk for tsunami, and sustainability. The image for clustering housing development is “detached cooperative housing development” which form coops--groups to discuss how to acquire land and who can hire architects and planners to assist them. The ownership of the housing is not limited to coop-owned but includes individual ownership.

In post-disaster recovery planning after the Great East Japan Earthquake, the national government encourages local governments to promote relocation to higher ground to avoid tsunami risk through “Promoting Group Relocation for Disaster Mitigation” project. Communities are discussing where and who would relocate to higher ground, and

how. This discussion is also necessary for other areas where government does not designate this project. The problem is that there is little financial support for experts who work as facilitators for clustering housing recovery in areas not designated for relocation projects, and the government has little support for it. People cannot make their decisions about whether or not to come back and reconstruct their housing without social infrastructure and neighbors coming back. What they need is community decision making for recovery vision and how to regenerate whole communities including housing recovery for future generations.

### **6. Conclusion**

Our society needs to develop housing recovery that mobilizes residents’ power and energy. It is shown in this article that it has positive effects such as minimizing relocation and supporting continuity of housing recovery, which leads to social and physical sustainable recovery of neighborhoods. Also, when disaster became catastrophic, such as Hurricane Katrina (2005) and the Great East Japan Earthquake (2011), community-driven housing recovery is needed in terms of holistic and sustainable neighborhood recovery.

We focused on actors in housing recovery in this paper, however, people who cannot be actors are tenants who live in public housing or private rental housing. Comerio (1997) points out that landlords are slow to repair disaster-related damages or they may rebuild for a higher-income market. This makes it difficult for tenants to stay in their rental housing after disaster. Housing recovery policy requires sensitivity to care for diverse populations who lost housing, and needs strategies to enable regeneration of the whole community by mobilizing resident power and their experience with disaster.

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