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Housing Relocation after the 2010 Eruption of Mt. Merapi, Indonesia

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Abstract

After the 2010 volcanic eruption of Mt. Merapi north of Yogyakarta City, Indonesia, the housing reconstruction program called Rekompak (*Proyek Rehabilitasi dan Rekonstruksi Masyarakat dan Permukiman Berbasis Komunitas*, Community-Based Settlement Rehabilitation and Reconstruction Project (CSRRP)) included on-site rebuilding or relocation to resettlement sites called *huntaps* (*hunian tetap*, permanent housing). Four years later, more than 80% of 2000 new houses built with Rekompak in the most severely affected Cangkringan District, Sleman Regency are in *huntaps*.

Rekompak provided standard support for affected households for land, building materials and construction. Yet *huntaps* vary in size, location, source of land, and construction timelines. Based on field surveys, interviews with key stakeholders, questionnaire surveys and interviews with residents of *huntaps* in Cangkringan District, several 'typologies of movement' can be identified in the process residents experienced from evacuation to temporary housing and then permanent housing in resettlement areas.

In the most common typology, which also relies most on official support at each stage, residents moved from temporary housing provided in *huntara* to government supported *huntaps*. In the 2nd type, resident groups took initiative to locate/acquire their own land for *huntaps*, and in the 3rd type residents from various communities moved into *huntaps* provided by hybrid private/Rekompak support. Closely related to the type of land and housing provision in reconstruction, these typologies offer a preliminary way to understand residents' varied experiences in the relocation process.

Huntaps vary in form, character, construction timelines, degree of housing expansion and inhabitation, and livelihood opportunities. Along with factors related to former villages (location, damage) and relationship to new *huntap* resettlement sites (size, distance from former hamlet, degree of collective relocation, housing provision method, and program timing) the general typologies of residents' movement in resettlement is a first step to understanding the varied nature of *huntap* resettlement sites.

Keywords: relocation, resettlement, housing reconstruction, Mt. Merapi, Indonesia

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1. Introduction

Mt. Merapi, north of Yogyakarta City, is one of the most active volcanoes in Indonesia. During ongoing volcanic activity in October and November 2010, the massive October 26 eruption killed 277 people in Yogyakarta Special District (which functions as a province) and 109 people in Central Java Province, and heavily damaged 2,682 houses in Yogyakarta Special District and 165 houses in the Klaten Regency of Central Java Province (UNDP). In the following weeks and months, heavy rains carried massive amounts of volcanic material downstream, causing cold lava/flooding disasters that destroyed a further 341 houses in Sleman Regency of Yogyakarta Special District, and 165 Houses in the Klaten Regency of Central Java Province (Ministry of Public Works/Rekompak, 2013). Building on previous experience of community-based housing recovery after the 2006 Central Java Earthquake, the government's program to provide housing reconstruction support in took the form of the Rekompak (*Proyek Rehabilitasi dan Rekonstruksi Masyarakat dan Permukiman Berbasis Komunitas*, Community-Based Settlement Rehabilitation and Reconstruction Project (CSRRP)) administered by the Ministry of Public Works. Implemented in both Yogyakarta Special District and Central Java Province, the largest number of Rekompak target beneficiaries were in Sleman Regency, with 2132 houses built, including 444 on individual lots and 1688 in *huntaps* (Ministry of Public Works/ Rekompak, 2013, and Ministry of Public Works, 2013). Within Sleman Regency, the largest number of houses, 1596, were built concentrated in the 5 villages that make up the Cangkringan District, which suffered the largest housing damage and destruction, including entire hamlets buried by volcanic material (Ministry of Public Works, 2013).

2. The Resettlement Process and the Rekompak Program

Temporary housing called *huntara* (from *huntian sementara*, temporary housing) was constructed at various scales in collective settlement areas, with a combination of assistance from NGOs, the private sector, academic sector, government/army, or independently. Most housing units were made from bamboo or other lightweight material, and the largest *huntara* had more than 1000 households.

The Rekompak program supported multiple options for permanent housing reconstruction in-situ or on new individual or collective sites. Recovery policy was to not support reconstruction in the most hazardous areas—which became defined as the area directly damaged by the 2010 eruption. The initial aim of the Rekompak program was to provide new houses outside the hazard risk area, on land found and acquired by residents themselves. As finding land proved difficult, the Rekompak program shifted to focus on collective resettlement sites, called *huntap* (*hunian tetap*, permanent housing), and a special policy revision was made to allow the use of land collectively owned by the village, *TKD* (*tanah kas desa*, land of the village); the use of TKD became the largest source of land for building *huntaps*, and 12 of the 15 *huntaps* in Cangkringan District were built on TKD land. Although some residents stayed in *huntara* located outside their villages, eligibility for *huntaps* build by Rekompak on former *TKD* land was limited to households originally from that village. Each of the 5 villages (*desa*) in Chankringan include a number of hamlets (*dusun*), and from planning stages, the Rekompak program supported collective relocation of hamlet residents. Each *huntap* was intended for households from certain hamlet(s). *Huntaps* used community-driven housing construction,



with all planning and building carried out by resident groups of approximately 10 households, called *KP (Kelompok Pemukim)*, with support from technical and program facilitators provided by Rekompak. Planning for site design and housing arrangement and allocation in the *huntaps* started when most residents were living in *huntara* temporary housing.

3. Housing Reconstruction and *Huntap* Resettlement Sites and Typologies of Movement

Most *huntaps* were "collective resettlement sites" built on former TKD land, including some that had also been used as sites for temporary housing *huntara* sites. Other types of *huntaps* included "independent collective resettlement" sites (*huntap mandiri*), where residents took the initiative to locate/acquire private land and then Rekompak provided support for houses and infrastructure, and reimbursement for the cost of land limited to 100m². Other *huntaps* are "combined-support collective resettlement" sites built though a combination of support from a private donor (Qatar Telecom) for housing construction, and infrastructure and site improvements supported by Rekompak. Finally, in the case of independent individual reconstruction (*mandiri*), Rekompak provided funds for rebuilding houses on individual lots. For all houses built with Rekompak funds, the program calculated support in the amount of 30,000,000 Rupiah (around \$2400 at 2015 exchange rates) to construct a 6 by 6 meter reinforced core house for each household. For houses build in *huntaps* using TKD land, each household also received ownership of a 100m² lot; in other cases, households were compensated around 7,000,000 Rupiah (around \$520), the calculated cost of the 100 m² lot. **Figure 1** shows a map of the 15 *huntaps* in Cangkringan and a chart explaining the type of site and number of houses in each.

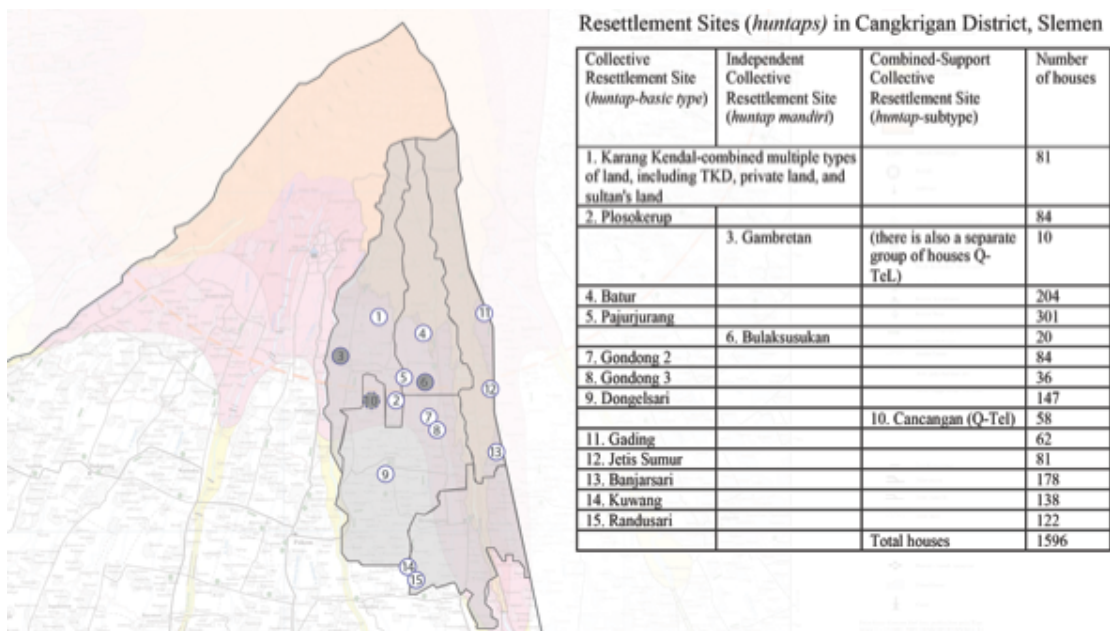


Figure 1. Resettlement Site (*huntaps*) in Cangkringan District, Sleman Regency

Based on field surveys, interviews with key stakeholders, and questionnaire surveys and interviews with 102 residents conducted between August 2014 and January 2015, several



typologies of movement can be used to describe the process experienced by residents who moved into *huntap* relocation sites in Cangkringan District.

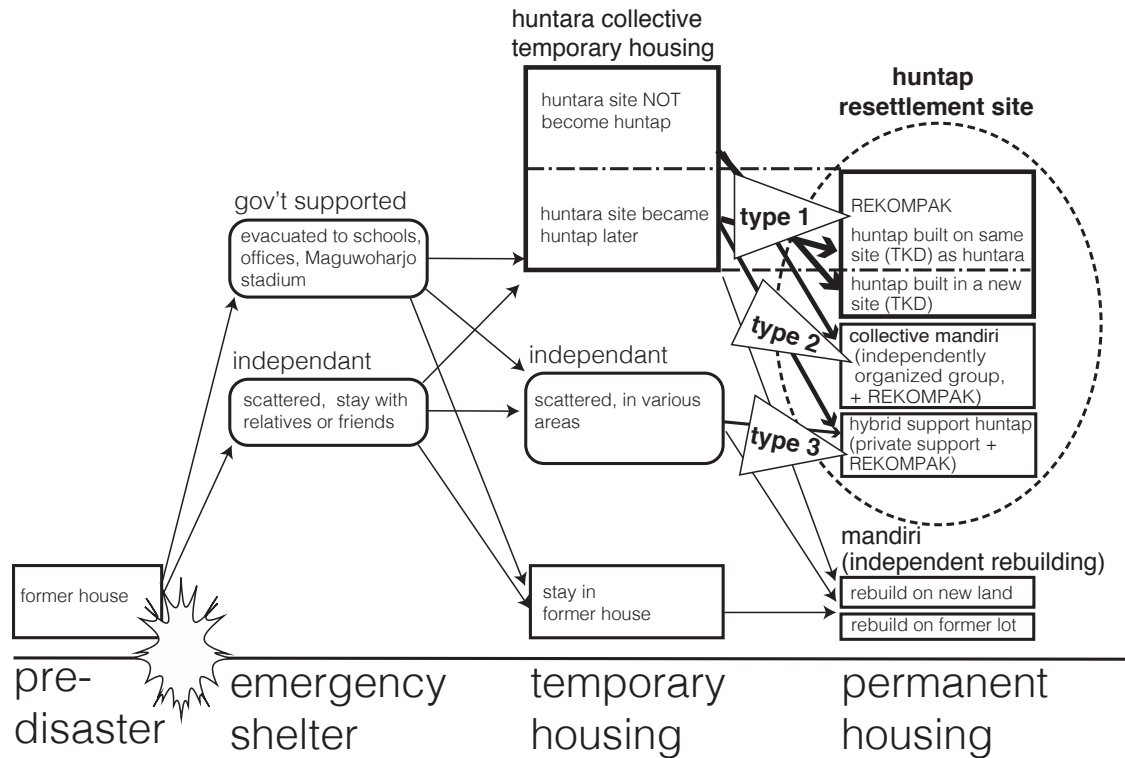


Figure 2. Typologies of movement to huntap resettlement sites

As shown in **Figure 2**, there are several paths for residents to arrive in new *huntaps* that were either: 1a) on the same TKD (village-owned land) land that had been used as a former *huntara*, 1b) built in a new site on TKD land, organized through Rekompak. 1a and 1b are the most common paths experienced by residents; with 1a *huntaps* built on the same location as the *huntara* for primarily the same group of residents, and 1b *huntaps* built in new locations for residents who had been living in *huntara* in other locations.

Among Rekompak program beneficiaries, the fewest number of households moved into type 2) independently organized collective *mandiri huntaps*, where residents identified/acquired privately-owned land, and Rekompak reimbursed them for the standard 100m² lot per household, and then provided the same support for housing reconstruction and infrastructure improvements as in types 1a and 1b. Of the 15 *huntaps* in Cangkringan, only 3 use private land (type 2): Huntap Ganbretan I has 10 houses; Huntap Bulaksuskun has 20 houses; and Huntap Karangendal includes a portion of private land combined with TKD land, and land from the Sultan. In the local area where finding scarce land for reconstruction was difficult, it is unsurprising that this type is the least common. These *huntaps* also have the smallest number of households, and tended to know each other well before the eruption, moved collective into *huntara* and then to *huntap*. In these cases, the willingness of the former



owner to sell their land to disaster survivors also contributed to residents' ability to acquire land. Although their small number represents a kind of special case, these resident groups who were able to find land by themselves had more control over the size and location of their lots.

Finally, a 3rd typology of movement describes the cases of residents moved into various temporary housing sites, and then moved into a *huntaps* built with a hybrid support combining private corporate donations (from Qatar Telecom, or Q-Tel) and Rekompak. In these "hybrid-support" *huntaps*, Q-Tel supported the construction of houses, and Rekompak supported infrastructure improvements. Huntap Cancangan is the largest huntap supported by Q-Tel, with 58 houses. Eligibility for Q-Tel-supported *huntaps* was limited to young families; Huntap Cancangan households were selected by lottery from anywhere in the disaster, which means that residents did not move into the huntap together. Q-tel also supported the construction of 10 houses in the small Huntap Ganbretan II, which is type 2, as a small group of young residents from one community took the initiative to find and acquire land, and then could receive hybrid support from Q-Tel (for houses) and Rekompak (for infrastructure). Instead of the 36m² houses provided by Rekompak for 30,000,000 Rupiah, houses built by Q-Tel were 42m² and built for 50,000,000 Rupiah per house, including finishes.

4. Discussion and Analysis

Although residents experienced different types of movement in the resettlement phases, more research is needed before it is possible to draw any conclusions about housing form, finishes and expansion and typologies of movements. Specifically, there is a need to look more in detail at the different *huntaps* in the most common 1a and 1b typologies of movement in order to see what other factors may have contribute to the differences in the living environment in the *huntaps*. The photos in Figure 3, which include examples of houses from typologies of movement 1b, 2, and 3, show the variety among the core houses. Although the lots are more spacious in type 2 huntaps than types 1 and 3, beyond that, the ability of residents to expand/finish their houses isn't related to the typology of movement they experienced.



Figure 3. Regardless of typology of movement to *huntap*, various expanded core houses; type 1b, 2, 3.

However, the decision-making processes for residents varied greatly between these 3 types. For example, residents who moved into Huntap Cancangan (type 3), with houses built by Q-Tel, had applied and been selected through a lottery process. Limited to young families, residents moved into this *huntap* from various villages, taking the opportunity to receive



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houses with no control over the arrangement or community. Beneficiaries of Q-Tel houses did not see the houses or have control over their design, but reported satisfaction with the houses since they were already complete, including finishes. For type 2, residents who took the initiative to find their own land, such as in Huntap Bulaksusunan or Huntap Ganbretan I and II, reported satisfaction with their choice of moving to a small independent huntap where they could have larger lots compared to the larger nearby huntap where other residents from their former hamlet had moved. Type 1 relies most closely on default government programs, while residents who chose type 2 and type 3 were able to take initiative and make a decision to pursue another options. Yet most residents did not have this kind of option available to them: only 3 independent *huntap mandiri* (type 2) were built. However, the fact the Rekompak program supports not only the default type 1, but also can be flexible in supporting community-initiated relocation such as in type 2, as well as the combination with other sources of funding as in type 3, demonstrates the breadth of the program.

The typologies of movement introduced in this paper present a preliminary way of understanding the different resettlement experiences of residents after the 2010 eruption of Mt. Merapi. However, there is still a need for more research in order to fully understand the differences between *huntaps* in terms of residents' satisfaction, ability to complete or extend their houses, support their livelihood needs and continue living in the resettlement areas.

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