The socio-economic impact of relocation policy to the communities affected by the mount sinabung eruption: a preliminary study

N Novira*, J Maxriz, Restu, Elfayetti, A J D Astuti

Department of Geography Education, Faculty of Social Science, Universitas Negeri Medan, Medan, North Sumatera
*ninanovira@unimed.ac.id

Abstract. Mount Sinabung has long been dormant. Since 2010, the great giant has woken up from the big sleep and has periodically been erupting ever since. The series of eruption resulted in catastrophic damage to many of the surrounding area, resulted in inhabitable villages. Many of the relocated inhabitants returned to their home village for one or more reasons while some others never moved at all. This indicated that there are some problems in the relocation policy. As a part of the research project ‘The Socio-Economic Impact of Relocation Policy to the Communities Affected by Mount Sinabung Eruption’, this study aims to explore the underlying factors of the returning relocated inhabitants from the relocation area to their home village and those who chose to stay in the danger area. The results demonstrated that the loss of source of income and the lack of alternative livelihood strategy are the main reasons to leave the relocation area. The secondary reason is the difficult access to children’s education and the problematic policy. From the results we learned that housing quality and the supporting facility are not the only factor that needs to be considered in the relocation plan.

1. Introduction

Mount Sinabung in Sumatera Utara, Indonesia was long dormant. It last erupted around 400 years ago [1]. It first re-erupted in 2010 and erupted periodically since then. The series of eruption damaged the surrounding village catastrophically that most of the village area is no longer inhabitable. The condition led to the policy to relocate the population of the inhabitable villages from the red zone area, some of 3 km from Sinabung’s crater. However, although they were provided a modern housing and equipped with churches and mosques, many of the relocated families returned back to their home villages, while some others never moved at all. Some aspect of social-economic which changed by the eruptions are income and children education.

They chose to stay in the red zone with all the risk of periodical eruption and indicated that the policy is problematic [2]. The policy was criticized of being ineffective, partial and missed the expected target [3-5]. Stakeholders did not bring good policy to relocate the people from dangerous zone of Mount Sinabung. Bad policy decreasing social-economic has other implication in disaster management especially low resilience of society [6-8]. Mount Sinabung eruption bring multiplier effect to social-economic conditions and livelihood in regional scale because some basic sector and functionality of infrastructures were change by the disaster [9,10]. The study thus aims to explore the underlying factors of the returning relocated inhabitants from the relocation area to their home village and those who refused to move and stayed at the red zone area.
2. Methods
The study was conducted in Guru Kinayan Village where the people refused to move and Siosar Village where the people of three villages were relocated. Both villages are administratively included in Karo Regency, Sumatera Utara Province. However, this paper only discusses the part of Guru Kinayan Village. This research used qualitative approach which in-depth interview and direct observation to collect the data. In-depth interview is applied to explore the minds and the opinion of the people and the head of two villages, while direct observation is used to observe the surrounding physical condition and validate some of the statement from the interview.

3. Results and discussion
From the first direct observation it was revealed that the village suffered from severe damage. Located in the red zone, some 3 km from Mount Sinabung, Guru Kinayan Village is very prone to the hazard of eruption (Figure 1). From the interview, the main and secondary reasons of the people to refuse to move to relocation and returned back after relocated are revealed. The main reason is the loss of income and the lack of alternative livelihood strategy, while the secondary reasons are the difficult access to children’s education and the uneven relocation policy implementation between villages.

3.1. Loss of income
The population of Guru Kinayan Village is 2,235 lives with 702 households. The people are mostly engaged in farming activities. From the total of 1,259 labour forces, 982 or some 78% worked in the agricultural sector. From the total 1,130 hectare of land area, 817 hectares or some 72% is on agricultural use. The damage in their agricultural fields actually erased most of the people’s livelihood.
strategy. Seeing only this fact, policy makers’ logic would directly opt for relocation with a replacement of the damaged fields. In contrast, the people do not see it that way. Moving to a new place is not as easy as people think. Although in the new place they are residing with more or less the same people, new place is just new place. Hesitation, perception of difficulties in starting a new beginning at the new place and reluctance overcome the new hope offered by the relocation policy. In the mean time, although damaged by the eruption, the people who refused to move perceived that after a short while the fields are becoming more fertile than before as shown in Figure 2. This strengthens their unwillingness to be relocated and become a kind of persuasion to those already moved to come back. The policy makers actually tried to accommodate people’s aspiration that led to the second model of relocation where people are allowed to choose the place of relocation. However, the difference between too phase came up to another problem.

3.2. Difficult access to children’s education
The people of Guru Kinayan Village put education as an important thing. There are 286 pupils in Guru Kinayan Village, consist of 79% primary school pupils and 21% junior high school pupils visiting the available education facilities available at the village. The interview revealed that the relocation area is located far from schools. The far distance leads to additional transport cost. The additional cost adds up to the burden the relocated people already faced due to the loss of income. The people would perceive the condition this way: moving to relocation area means no job and extra cost for children’s getting to school. This is definitely not a nice choice to choose.

On the other hand, there are difficulties in transferring the pupils to the new school. This forced the schools in Guru Kinayan Village, 2 primary schools and 1 junior high school, to still operate until today. The difficulties could be because the alternative schools do not have sufficient infrastructure to accommodate the transferring pupils. The available classrooms are only adequate to serve the pupils from the surrounding area without any addition from the relocated families. Transferring pupils means they would need extra classroom. And for the record, the number of pupils is not just a few. 220 pupils from first to sixth grade of primary school, and 66 pupils from first to third grade of junior high school. These pupils are going to the 2 primary schools and 1 junior high school available in Guru Kinayan Village. This means a lot of extra classroom is needed. Furthermore, additional teacher must also be provided.

3.3. Problematic policy
The severe damage caused by series of Mt. Sinabung eruption led to relocation policy. There are seven villages instructed to leave the area. The seven villages are relocated in two phases. Later, third phase
of relocation is instructed. However, the paper discusses the problem arise from the difference of first and second relocation phase’s implementation. The first relocation phase is located in Siosar Village, Merek District. The people received a modern housing and a dedicated 5,000 hectares of land for farming. In the process of determining the second relocation phases, request of dialogue from the relocated people came up. The dialogue resulted in a decision to give the people the freedom to choose where to be relocated and where the land for farming they would like. On the paper, the second phase relocation is allocated more funds for the relocation. The allocation for the first phase relocation is IDR 90,000,000,-, while fir the second phase is allocated IDR 110,000,000.-. This difference triggered an (actually) unneeded conflict. The first phase people perceived that they received less than the second phase people. They did not take into account that the additional IDR 20,000,000.- is actually allocated to replace the land for farming.

However, surprisingly, the second phase people also envied the first phase people. How come? Because the second phase people did not immediately receive a parcel of 5,000 hectare land for farming purpose, unlike the first phase people. They did not bear in mind that they received more funds in comparison and that the additional fund is a replacement of the land dedicated for the first phase people. This is related to the main reason to refuse the relocation. The perception that they would lose their income is due to (the perception) that they did not have any land in the relocation area, when the land should have been allocated from the additional fund (IDR 20,000,000).

4. Conclusion
The main reason the people of Guru Kinayan Village refused to be relocated is the perception the loss of income. They are farmers and thought did not receive any farming land replacement. This turned out to be a misperception. They already received the replacement, however, not in the form of land but in the form of financial compensation. The first secondary reason for the refusal is the difficult access to children’s education. Future relocation plans must take this into serious account, since extra cost means an extra burden, while transferring the pupils to the available schools is not as simple as people think. The second secondary reason is interconnected to the main reason. The difference in policy implementation induced an unnecessary conflict. Future relocation plan should minimize any difference, even though it is actually the same. The people could perceive it in a different way.

References
[1] Pratomo I 2006 Klasifikasi gunung api aktif Indonesia, studi kasus dari beberapa letusan gunung api dalam sejarah Jurnal Geologi Indonesia 1: 209-227.
[2] Oktorie O 2018 Model kebijakan responsif pemulihan bencana letusan gunung Sinabung Jurnal Kapita Selektâ Geografi 1 (1): 15-20
[3] Hermon D 2009 Dinamika Permukiman dan Arahan Kebijakan Pengembangan Permukiman pada Kawasan Rawan Longsor di Kota Padang Sumatera Barat (Bogor: PSL IPB).
[4] Hermon D 2015 Estimate of changes in carbon stocks on land cover change in the leuser ecosystem area Forum Geografi 29 (2): 187-196
[5] Hermon D 2016The Strategic model of tsunami based in coastal ecotourism development at mandeh regions, West Sumatra, Indonesia Journal of Environment and Earth Science 6 (4): 40-45.
[6] Widiawaty M A and Dede M 2018 Pemodelan spasial bahaya dan kerentanan bencana banjir di wilayah timur Kabupaten Cirebon Jurnal Dialog Penanggulangan Bencana 9 (2): 142-153.
[7] Dede M, Widiawaty M A, Pramulatish G P, Ismail A, Ati A and Murtianto H 2019 Integration of participatory mapping, crowdsourcing and geographic information system in flood disaster management (case study Ciledug Lor, Cirebon) Journal of Information Technology and Its Utilization 2 (2): 44-47.
[8] Kaula D, Purwanto B H and Megantara E H 2018 Analysis of factors affecting environmental management and monitoring implementation of business and/or activity (a case study the implementation of Amdal and UKL-UPL at Padang Pariaman District) Ecodevelopment 1
[9] Dede M, Sewu R S B, Yutika M and Ramadhan F 2016 Analisis potensi perekonomian sektor pertanian, kehutanan, dan perikanan serta pertambangan dan penggalian di Pantura Jawa Barat Prosiding Seminar Nasional Epicentrum 5.5 (Bandung: Departemen Pendidikan Geografi, FPIPS-UPI).

[10] Arent D J, Tol R S J, Faust E, Hella J P, Kumar S, Strzepek K M, Tóth F L and Yan D 2014 Key economicsectors and service Climate Change 2014: Impacts, Adaptation, and Vulnerability (New York: Cambridge University Press).