Dynamics of Living Subsistence Systems in Merapi Disaster Prone Area and Non-Merapi Disaster Prone Area, Cangkringan District, Sleman Regency, Indonesia

Surani Hasanati¹, Alia Fajarwati², Estuning Tyas Wulan Mei³

¹Lecturer, Regional Development Study Program, Faculty of Geography, Universitas Gadjah Mada  
²Lecturer, Regional Development Study Program, Faculty of Geography, Universitas Gadjah Mada  
³Lecturer, Regional Development Study Program, Faculty of Geography, Universitas Gadjah Mada

Accepted 2018-05-29

Abstract:
Merapi is one of the most active Volcano in the world with more than 70 eruptions since 1548. Merapi Volcano Eruption in 2010 was incline destroyed most of the assets, activities or access of households capability by loss of any assets that put the victims at the desperate situation, especially to those who got direct impact of Merapi Volcano Eruption. This research explain how the household that live in KRB (Merapi disaster prone area) and non-KRB developed system for their living subsistence to fulfill the minimum survival subsistence after Merapi Eruption in 2010. This study linked to disaster risk reduction that needed as one of way of mitigation by local people. This research held in selected village that are fix settlement relocation “Plosokerep” in KRB and “Kuwang” in non-KRB, Cangkringan District, Sleman Regency, Yogyakarta, Indonesia. Those location is the representative of rural community in Merapi area. The research analysis is descriptive qualitative. The unit of analysis is household. Result shows that living subsistence systems in each household may varied but in general, one village has the likely same system, but differs in KRB and Non-KRB.

Keywords: Merapi Rural Area, household, Merapi disaster prone area, non-Merapi Disaster Prone Area, living subsistence

Introduction:
Mount Merapi is the one of active volcano in the world with more than 70 eruptions since 1548 (Historical eruption of Merapi Volcano, Central Java, Indonesia, 1768-1998, 2000). Over in the last of two decades, Merapi mount had been exposif erupted around each 8-15 years and had terrific erupted around each 26-54 years, in eruption period around each 4 years (Thouret, et a;., 2009). Because of the volcanic soil has high mineral and fertile, people are living and staying in this volcano area. The more people who lived in this dangerous area, it caused the more probability disaster that can affect the activity of human life. At least 9.6% of the world population lived in dangerous area and the majority of that regions are located in developing country (Tilling, 2008).
Referred to Perka BNPB No. 5 in 2011 about The Planning of Rehabilitation and Reconstruction The Region After Merapi Eruption in 2010, the activity of rehabilitation and reconstruction in housing and settlement sector was held with people relocation approaching from KRB III to the more safety area in REKOMPAK scheme. REKOMPAK is the acronym from The Rehabilitation Reconstruction People and Resettlement Based on Community which is the one of the rehabilitation and reconstruction project after disaster housing and settlement sector through empowerment approaching that undercontrol by the Ministry of Public Works of Direktorat Jenderal Cipta Karya. The relocation used with several methods, there are the independent relocation in people private’s land and the collective relocation in land which is prepared by local government.

With the end of REKOMPAK scheme, appearing the question about life and people livelihood who relocated to the permanent housing. This research explained how the household that lived in KRB (Merapi disaster prone area) and Non KRB (Non Merapi disaster prone area) developed system for their living subsistence to fulfill the minimum survival subsistence after Merapi Eruption in 2010. This research tried to identify the household dynamic of economy adaptation to fulfill the household’s necessary.

Material and Methodology:

This research explain how the household that live in KRB (Merapi disaster prone area) and non-KRB developed system for their living subsistence to fulfill the minimum survival subsistence after Merapi Eruption in 2010. This study linked to disaster risk reduction that needed as one of way of mitigation by local people.

This research used survey method. This research collected the observation data in research location that completed with sekunder data. This research location was chosen by puposive sampling, there are Plosokerep permanent housing in Umbulharjo village and Kuwang permanent housing in Argomulyo village. These two of permanent housing were located in Cangkringan District, Sleman Regency where in Plosokerep permanent housing is KRB and Kuwang permanent housing is Non KRB. The respondents are household of permanent housing. Twigg (2009) mentioned that the adaptation classification are devided to economy adaptation, physical adaptation, and social adaptation, and this research aimed to know the economy adaptation.

Literature Review:

Speak (2004) explained that several people, after migrating, are working to earn money for a specific event, such as a sister’s wedding, to buy land, cattle or any other needed property to support the family in villages, etc. They maintain a strong connection to their villages and view their housless period as temporary, even tough, they have lived on the footpaths, following the work, for several years. They do not regard themselves as being disconnected from their homes or their social networks. Many of the houseless people in the footpaths had, initially, come to supplement their rural livelihood or improve their land and housing in the rural villages.

Resilience not only refers to the magnitude of a shock a system can cope with and still remain at a given state, but also to the degree of the system’s ability to self-organize and the capacity to learn from shocks and to adapt (Folke C, et al, 2002). Household level financing, wherein resources are generated, managed and utilized by the family head can ensure greater effectiveness of the system and lessen the potential devastating effects of the disaster.

Result and Discussion:

The condition of people’s housing area after Merapi Eruption in 2010 was covered by hot clouds. Everthing is flat with soil, as far as the eye can see there is only cloud. When Merapi Eruption was happened, the first action were doing by people is joining the evacuation. The evacuation was done by the volunteers and the team of SAR. In the afternoon, all of the village officials especially the village head had been done the meeting to evacuate the people and to announce in the mosque to join the evacuate in Tirtomartani. The most helper part when this disaster happened are the village officials (neighborhood association, citizen association, and youth) and the local government. The most thing is needed by people when the disaster was happened are food, clothes, medicine, and money. In the begin of 2 days, in evacuation area, there is no food yet, so that the people that was lead by the chairm of the neighborhood are cooking together. After 2 days later, the aid had been arrived. According to the stakeholder village’s opinion, the part who is the most have a role in the recovery in disaster situation
is BNBP who gave the socialitation about downstream therapy to recover the people’s trauma to any loss that caused from the disaster, meanwhile there is governement who gave the basic aid such as food, clothes, kitchen set, and REKOMPAK who gave the permanent housing.

Since the recovery process, the role of chairman of neighborhood such as the people’s coordinator and gave the motivation to the people for sincere and tolerant in accepting everything, and the role of people since the recovery is quite good. Because the people had been accepted the situation and tried to run the existing life, there are several people who enjoyed and accepted the socialitation that was gave to them.

From the economy aspect, in these two of permanent housing, was happened the different economy fluctuation. If in Plosokerep permanent housing there was increasing people’s economy after eruption, opposite with Kuwang permanent housing there was decreasing people’s economy. This is of course effecting the adaptation economy with a little bit different in the two of permanent housing. The average people who lived near eruption disaster area are working such as farmer, people have economy strategy adaptation in the form of economy diversification in livestock, industry, trade and services, also mining sector (Tabel 1). They still became a farmer because as what Speak (20040 said that they maintain a strong connection to their villages and view their housless period as temporary. The reason from this diversification is because the earned income is become less than Rp 50.000 each day. However, this income was enough to fulfill the people’s necessary. Some people are have saving and some people are did not have saving. People are saving in home or in cooperative.

Table 1. Identification of Diversification of Economic Adaptation after Merapi Eruption

<table>
<thead>
<tr>
<th>Diversification</th>
<th>Livestock</th>
<th>Industry</th>
<th>Tourism, Trade, and Services</th>
<th>Mining</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kuwang</td>
<td>Cow</td>
<td>The cultivation of mushroom processing, the production of nugget</td>
<td>Services, labor</td>
<td>Rock and sand</td>
</tr>
<tr>
<td>(as an aid)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plosokerep</td>
<td>Cow</td>
<td>-</td>
<td>Tourism: photograpre, the rent of jeep and tourguide in</td>
<td>-</td>
</tr>
<tr>
<td>(as an aid)</td>
<td></td>
<td></td>
<td>Services: laundry</td>
<td></td>
</tr>
</tbody>
</table>

Economic adaptation in Huntap Kuwang:

People who attached by Merapi Eruption in Kuwang permanent housing are using this aid facilitation optimally. There are staying in permanent housing. Overall, the people’s life in Kuwang permanent housing is quite good, although the economization after Merapi Eruption was decreasing. People were making the diversification occupation not only become farmer, but also working in small scale industry such as process mushroom cultivation and the produce nugget, while in livestock sector is raising cows, and in services sector is labor, also in mining sector there are mining rock and sand.

People who lived in Kuwang have difficulty to acces their work place which is so far from their house. The facility that available in Kuwang permanent housing are a mosque and garbage dump for organik-anorganik. The gargabe dump system in Kuwang permanent housing was good enough. There are people initiation disposal collectively. Security system in Kuwang permanent housing used patrolling system that took turns by the people.
Economic adaptation in Huntap Plosokerep:
People who attached by Merapi Eruption in Plosokerep permanent housing are not using optimal utilization. There are many empty permanent housing and have no tenant. This permanent housing has under qualified standards. People who lived in Plosokerep permanent housing were increasing significant in economy aspect. The most benefit diversification are working in vacation sector such as photographer, rent of jeep and tourguide, and laundry services. The average people of Plosokerep are working in vacation sector of Merapi Eruption.

Plosokerep permanent housing has trash bin. However, this trash bin was very seldom to use because people are prefer to sell the garbage for private beneficial than to collect the garbage to trash bin for recycling. Not only that, in Plosokerep permanent housing was found several of evacuation route signs to help people if it was happened Merapi Eruption. Also in this area was found water reservoir. This is because in Plosokerep permanent housing has murky water condition. Some of people are buying the water and containing it in water reservoir.

Conclusion:
Generally, the household lives in these two of permanent housing (Huntap) were still making economy diversification to sustain the household’s necessary after Merapi Eruption. The difference is, in Kuwang permanent housing was more diversificated, there are only livestock, industry, trade and services, also mining sector which is the dominant sector is in mining sector. Meanwhile in Plosokerep permanent housing, the diversification are in livestock, trade, vacation, and services which
is the dominant sector is in vacation sector.

Acknowledgements:
Our thanks to Prof. Dr. Baiquini, M.A as the Head of Regional Development Program Study, for his valuable support to this research. Also, thanks to the Faculty of Geography UGM for the financial support of this research. Last but not least, my research assistants: Divia Singi Joyanda, Iffa, Diwya, Faiza, and Isti Anisya.

References: