

## Sustainable Livelihood Strategies After Merapi Volcanic Eruption (Aspects of Sustainable Rural Development)

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### ABSTRACT

In 2010, the government of Indonesia stated the emergency response condition for the area affected by Merapi volcano eruption disaster. In this phase, the government is fully responsible for the livelihood of refugees. It will be different when the emergency phase is over. People who return from refugee camp to their home where danger zone status is being reviewed will have a period of obscurity for longer life. The problem is survival strategy applied by people inhabiting in Disaster Prone Areas (KRB) II and III, after Merapi volcano eruption disaster, especially when the emergency phase is over. This study aims to investigate the characteristics of people survival strategy after the emergency response status ends. The study uses grounded method to which the writer involves deeply in the object being studied or makes them as a part of the research object. The research was conducted in a half year after the eruption of Merapi volcano or when the emergency response phase expired. Analytical approach is based upon the concept of sustainable livelihood strategies and its instrument is victims of Merapi eruption who live in KRB II and III in Umbulharjo and Kepuharjo village, and whose house is appropriate to live in with minor or serious damage. The study results that the assets platform for sustainable livelihood of people living in KRB II and III in a half year after Merapi eruption for pursuing life can be grouped into three basic strategies. The first is based on the bond to homeland, the second is based on the belief in the Merapi volcano and the third is based on economic constraints. These assets have been influenced by custom modifications, land ownership, government, and donors. The resource-based activity towards sustainable livelihoods is the collection of the remaining eruption materials, and non resource-based business is in services sector.

Keywords—sustainable, rural, livelihood, natural disaster.

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### INTRODUCTION

In 2010, the government of Indonesia stated the emergency response to the area affected by Merapi volcano eruption disaster. In this phase, it is fully responsible for the livelihood of refugees and will treat differently when the emergency phase is over—people will return from refugee camp to their homeland. The people could expect government interferences to relocate them when their houses or areas were no longer save for being inhabited. However, those whose houses and neighborhood or danger zone status are being reviewed will have a period of obscurity for longer life. They, indeed, have bigger problem for their living based on many decreasing quality aspects of life including houses, occupations, etc. Instead of moving, these persistent people will always maintain their existence with various strategies and whatever capitals or asset they have. The description above confirms the problems of post-disaster livelihoods or after a phase of the emergency response. For the case of Merapi volcano eruption, in 2010, the problem was the way of people survival strategy in Disaster Prone Areas (DPA) II and III after the disaster. This study aims to

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investigate the characteristics of the post-disaster survival strategy ahead of the emergency response phase of volcano Merapi eruption ended. The benefit of this study is that it obtains a picture of how people select strategies for maintaining the existence of their life. The description is hopefully become a priority program on mitigation stages and phases of emergency responses which strengthens the strategy used by the community after the disaster.

#### METHOD

The method used in this study is grounded into which the researcher involves deeply the object under study or becomes a part of the researched object. The main data sources include the words, actions, and photographs with humans as the research instrument. The main instrument data sources are residents of Merapi eruption victims who live in KRB II and III in the village and Kepuharjo Umbulharjo, Cangkringan, Sleman regency, Yogyakarta and whose houses are still livable by mild to moderate improvement.

The informants are specifically people who live in Pelemsari, Pangukrejo, and Kopeng, whose settlement is adjacent to the forefront of phyroclastict field of 2010 eruption. The study selected seven families who made major source of information, and adult family members as informant supporters.

The experiment was conducted a half year after Merapi volcano eruption at the end of the emergency response phase, around May—June 2011. This was to observe the existence of life after disaster and the government-run emergency response. The analytical approach is based on the concept of sustainable livelihood strategies in the context of disaster. There are five sources of life or properties owned by any individual or higher social unit, in the effort to develop life such as (1) human capital, (2) social capital, (3) natural capital, (4) physical capital, (5) financial capital<sup>1</sup>. Access to these capitals is often modified by the role of social relations, especially (1) the economic and age, (2) the influence of traditional institutions, especially the customs, (3) the influence of the organization, especially the government and religious faith in the broad sense. Meanwhile, activity towards livelihood strategy relies on natural and non-natural resource base.

The analysis in qualitative research is an attempt to work with, organize and sort the data into manageable units; synthesize, search and find patterns, find important and learned thing in it, and decide what can be written in the report<sup>2</sup>. Hermeneutic mode is applied to associate with an analog understood by meaning of spoken and textual data. At constructive level, the analysis is discussed based on the theory of sustainable community adaptation and livelihoods. The analysis compares the data with one another, and permanently compares the categories to the others. In general, the process includes the reduction, categorization, and synthesizing data. Examination of data validation uses triangulation techniques, which utilizes a variety of data sources for checking or comparing data from primary sources.

#### RESEARCH RESULT

Options of strategies held by a household are flexible efforts to use capital in physical, financial, natural, social and human which administered by considering which one is possible to do. The strategies implemented by informants are described below.

##### 1. Human Capital

Human capital is the inherent capacity of an individual in the form of intellectual, emotional, moral, skill, health, beliefs, and many other things owned by the individuals. Related to this human capital, all key informants and their families have good physical or mental health condition. Their average age is productive for physical activity in rural communities. While for education, the informants are of elementary school graduates to Senior High School. Some of them are good at carpentry, both carpenters and stone, and some others do not

have special skills. The most prominent knowledge they have is about animal rearing, including the planting its food and caring for livestock. In addition, they are good at dryland agricultural farming crops and tree planting. The most important capital for human in life is faith as the guide and way of life. The faith can come from religion or from customs or tradition. All informants and the majority of the population in the study area are Moslems. Their appreciation of the existence of religion is belief in God and becomes the foundation of life submission. The informants also hold beliefs in addition to and associated with the eruption, the beliefs, customs, and traditions inherited by their ancestors.

#### 2. Financial Capital

Financial capital is the possession of individuals and families in the form of cash or money saved in an account or money they are entitled to but cannot be used in current condition. Related to this financial capital, all key informants and their families did not have financial savings during disasters. In the emergency phase, they depended on the donors through the government official in refugee camps, such as living allowance and other donors. The government gave them daily life cost around Rp4,500 or they received it at once in uncertain time. The informants try hard to get more cash by relying on the tourism sector (lava tourism; environmental disaster) or carpentry.

#### 3. Physical Capital

Physical capital is a means supported as well as the underlying infrastructure and needed by the community in the daily life activities. After the eruption, public facilities and infrastructure of water, electricity, and transportation, especially roads, were damaged and could not function at all. The road as main infrastructure needed immediate cleansing by government and volunteers, by removing dust and moving the trunks of fallen trees. Meanwhile, clean water infrastructure could not work at all until six months after eruption.

To overcome current situation, Indonesian Red Cross supplied clean water for free and Department of Public Work provided water reservoirs for collective use. While, electricity could be used five months after eruption because State Electricity Company (Perusahaan Listrik Negara/PLN) assumes that as long as there are houses inhabited by a population, the network power will be reconnected. The entire reconnecting cost will be covered by PLN, because the electric pole is still available. For the extended electrical connections to different houses, the charge is taken by the people whose houses were reconnected. Another important physical capital and used by all informants is motorcycles. At the time of the eruption, the motorcycle used for transportation to shelters and this means of transportation is a mainstay in doing all activities and meeting the various needs of life.

#### 4. Natural Capital

Natural capital is the stock of resources that can be used by the informants. Some times after returning home from refugee camp, the informants took and collected items that could be reused or sold. One source of income that could immediately make money was wood from fallen trees in the joint operation garden and the yard at their disposal, as well as in the surrounding streets where they live. Wood became the only asset for getting the money since existing crops and everything had been destroyed. Livestock industry which became the mainstay of the southern slope of Merapi volcano suffered destruction because of the toll death of livestock and decreased milk production. The government promised that the dead cattle would be paid off and they would get money five months after eruption. It would not delivered at once but simultaneously or in stages to all citizens whose cow died. For the time being, it had not been used to buy cattle because of difficulties in the provision of feed, in addition to damaged stable conditions.

#### 5. Social Capital

Social capital is a wealth of social relations owned by the community such as norms, networks, membership of groups, relationships based on beliefs, exchange rights which may reduce transaction costs, and many more. In general, Javanese society has enough strong

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bond of social capital in the villages. The residents were evacuated together in different areas of Merapi volcano slopes and it proved the strong bond among them. It can also be seen in the refugee camp where they share the place together in one area based on the origin of the residence. Although chaos happened at the time of refugee mobilization, when conditions started to be conducive, they tried to contact their relatives or neighbors. However, some time after disaster, informal social capital, such as the villagers meeting network, neighborhood network, pillars of citizens, the ten-house community, Islamic study groups, youth groups, sports groups, and others seemed to stagnate. Not long afterward or about two to four months after the refugees living in the shelter, some of these activities, especially the activities of villagers faith lecturing and meetings as well as neighborhood network became reactivated.

All informants stated that the social bond they have are close relatives, neighbors, distant relatives, and their social systems. At the time of the disaster, relatives and neighbors had been at the same panic. Social functions applied were similarities fate as refugees. Some of them who did not have distant relatives would stay with relatives and neighbors in collective camps provided by the government. While those who had distant relatives, would stay at their relatives. The main social function is a mutual assistance during the evacuation and mutual help in home repairment after returning home from the camp.

The discussion above indicates the activity of the community in selecting an asset management strategy platform to sustainable livelihoods a half years after disaster and can be grouped into three basic strategies in pursuing life. The first strategy is based on the bond with the homeland. The next is based on a belief in the Merapi volcano and the third strategy is based on the economic problems.

The first strategy or the bond of native land correlates with a belief system adopted by the community because it has a pretty close relationship for their daily life. The close relationship between Javanese people and their homeland forms a strong emotional bond to the Javanese community<sup>3</sup>. A common proverb in Javanese community is "A family must be together whether they have meal or not", showing how high they have bond with the land of their origin. The people of southern slope of Merapi volcano apply this beliefs for homeland because the way they get the land and the inheritance of social and cultural life in the long term from their ancestors. They prefer persisting in the region where they belong to because of origin, even they live in area of danger, to having spatial mobility to areas without relatives or obscurity of life.

The second strategy is based on the specific belief of people in southern slope of Merapi volcano, which is related to the myth of Merapi. This picture of faith is a part of life in the world interacting with the supernatural and the physical environment. The faith of territory origin and the precursor of Merapi eruption are not only ideas of two belief systems but also realized by most people in the form of ceremonial rites<sup>4, 5</sup>. "Suran" and "Nyadran" are preserved ceremonial people do until now. "Suran" pertains to the Javanese new year having linkages with the activity of Merapi Volcano eruption, while "Nyadran" is a part for remembering ancestors.

The third strategy is based on the economic issues in the study area. The economic problem occurs when people have to perform spatial mobility, while at the same time, the area they inhabit has high economic potential. This is also a factor of their reluctance to perform spatial mobility. For a long time, people here have realized that the area where they live is a disaster-prone area of Merapi volcano. However, because they have no choice of housing options as a result of the limitations of the resources for livelihood in other places or get the land as inheritance, they still persist in the region.

Limitations of livelihood elsewhere and abundance resources at the site make them prefer to stay in the disaster area although disaster is always haunted them anytime and indeed, they want to move to another location, if there is a better guarantee of a better economy

growth. Management of assets that are divided into three basic sustainable livelihood strategies pursued by the society after Merapi Volcano eruption is influenced by custom modifications, land ownership, government, and donors. Bond to the homeland and the specific beliefs of the Merapi Volcano is a modification of traditional heritage, acquired hereditary.

Meanwhile, the modification of land ownership to the management of assets is the reluctance of people to be relocated permanently in shelters provided by the government. The government modifies management assets by providing regulation to overcome disaster and providing assistance in various forms including living allowance. On the other hand, donors provide assistance in many forms, both material and non-material.

The activities to maintain sustainable livelihoods are based on resource or by collecting post-eruption material and non-resource-based especially in tourism services after disaster. This suggests that the survival strategy is a strategy adopted by the informants. They try to survive relying on what is left over or whatever they have and what they can do with the condition of existing capabilities. They do this because they have no other alternatives for a better life.

Their activities in new jobs do not require special skills, such as maintaining admission tickets for tourism site, parking services, being a motorcycle tour rider, as well as selling a variety of things needed by the travelers. To get a chance as well as capital in such activities cannot be separated from the network, especially through youth organizations or community where they live along with direct or indirect help from government or private donor. However, the new job has a fairly strict level of competition with other neighbors who are also trying to earn a living.

## CONCLUSION

The results show that the assets platform for sustainable livelihood strategies of people living in disaster prone area II and III a half year after Merapi volcano eruption can be grouped into three basic strategies. The first is based on the bond of the homeland, the second is based on the belief in the Merapi volcano, and the third is based on economic issues. These assets have been influenced by custom modifications, land ownership, government, and the donors. The activity of resource-based sustainable livelihoods is collecting post-eruption material, while for non-resource-based they mainly run tourism services business.

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