

# RESILIENCE OF SOCIETY PANDANSARI VILLAGE, NGANTANG DISTRICT AFTER THE ERUPTION OF MOUNT KELUD 2014

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**Abstract**— An eruption of Mount Kelud in 2014 was one of the disasters that affected large changes in society particularly in Pandansari Village, Ngantang District, Malang Region. In fact, the impact of the eruption affected the stable conditions of social structure, economy, and culture into vulnerable ones. One of the real impact was the geographical changes which also affected The sectors of the economy, the destruction of homes and bridges, closed farmland by lava and death of Sambong River flow. This study was aimed at looking at the efforts of adaptation and disaster recovery (resilience) of the society of Pandansari after the eruption of Mount Kelud 2014. This study used a qualitative research method with a case study approach. The results of this study explained the various efforts of resilience undertaken by the society of Pandansari Village such as changing the livelihood from being farmers into sand miners.

**Keywords**— *Kelud eruption, Resilience, Society*

## I. INTRODUCTION

Natural disasters provide enormous impacts to the society including loss of assets, social changing and loss of livelihoods ([1]; [2]; [3]). In addition, to support the statement, [4] states "Disaster impacts include not only direct loss or damage but also indirect and secondary losses felt as impacts move from affecting objects (people, buildings) to socio-ecological systems (markets, human health, etc.)". The eruption of Mount Kelud was one of the phenomena of natural disasters that occurred in Indonesia. Based on the record of [5], the eruption of Mount Kelud since 1900 until now (2016) has occurred as much as six times. The last eruption of Mount Kelud taken place on Thursday, February 13th 2014, around 10.50. Ngantang District of Malang Region was the most severely affected region caused by the eruption. The impact of the eruption in Ngantang District was not only raining ash but also burst of volcanic material in the form of stone which diameter 5-8 centimeters in diameter stone. Roofs of the houses were crushed by the sand, even some of them collapsed. There were seven people died due to falling buildings and diseases caused by volcanic ash. Six of them were the residents of Pandansari Village, Ngantang, and another one was from Tulungrejo, Pujon Malang.

Each type of disasters has stages or phases (Yuwanto, 2014). The first one is a disaster phase in which after the disaster occurred, there will be many parties care about and

provide assistance to communities affected by disasters. After that is the heroic phase where there are many parties provide assistance which makes the society of the disaster feel comfortable and have a better life. However, such conditions will not go on continuously as sometimes there are no aids at all in a certain time. For that reason, it is not easy for the society to fully bring back the initial condition just as before the disaster occurred. The last phase is the critical phase. This one is the phase where people should try to get back to normal life with various efforts of adaptation that they do. The efforts of adaptation to return to such condition is so-called resilience.

It is known when the disaster occurred the government and society often tend to focus on recovery and rehabilitation, but less focus on resilience [6]. Resilience interpreted as an attempt to adjust and rise to continue to the better and hopeful life after a critical or difficult period [7]. The adjustment describes the capacity to build up a positive result of a stressful life. The success of the adjustment was illustrated as the capacity to recover quickly from stressful environments [8].

A related Research to the resilience of post-disaster had been conducted by Bonando, et al in 2006 which title is "Psychological Resilience after Disaster: New York City in the Aftermath of the September 11th Terrorist Attack". Based on the results, it was found that the respondent felt shocked after the attacks on September 11th 2001 in New York. Related to that, [9] revealed: "for resilience would indicate a need to reconceptualize resource allocation and timing, as well as mental health practices and policies, following natural disasters or major terrorist attack".

Pandansari Village was the most severe region affected by the eruption of Mount Kelud in 2012. The eruption of Mount Kelud which highly destroyed the lives of Pandansari people did not easily break their struggle to maintain and create a better life. Resilience is a way for them to choose in order to rise from the bad condition by adjusting with the new environment in which they live.

## II. METHOD

The research was conducted using a qualitative research method. The qualitative research in the study tried to emphasize the nature of reality constructed socially and had a close relationship between the researcher and the subjects of

the research [10]. This study used a case study approach. Through the approach, it will be accurate for the researcher to describe the natural conditions which were so complex.

The informants in the study were the society of Pandansari affected by the eruption of Mount Kelud. The decision of choosing the informants used the snowball technique. The data collection processes were conducted by observation, interview, and documentation. While, the data analysis was done through data reduction, data presentation, and conclusion [11]

### III. FINDING AND DISCUSSION

The natural disasters "challenge" areas, environments, and the affected society to rise up and regain control over the lives and future. The success of the efforts was directly related to the capacity of victims to rebuild the structure and social organization. The level of elasticity that makes a person able to survive, rise up, and adjust to the circumstances so-called resilience [12]. According to the American Psychological Association (APA), resilience is defined as process of adapting well in the face of adversity, trauma, tragedy, threats or even significant sources of stress.

Resilience is the indicator of the sustainability of someone's life who lives in a difficult situation. When somebody is in a difficult situation, he or she tends to be depressed and is at a critical period [13]. Moreover, resilience is also an individual's ability to survive, rise up, and adjust to the difficult conditions to protect individuals from the negative effects caused by difficulties. Resilience is very essential owned by each individual. In certain situations on which misfortune is unavoidable, a person who has resilience is able to overcome various problems of life just the way they are [14]. [15] that the quality of resilience is not the same of each individual, it happens because the quality of resilience of a person is determined by age, level of development, the intensity of person to face unpleasant situations, as well as the social supports in the formation of the resilience of the individual.

An eruption of Mount Kelud in 2014 caused a loss for society in Pandansari Village. Such losses generally can be grouped into two types which are physical and sociopsychological losses. Physical losses are in the form of destructions of public facilities, homes, farms, and household buried by sand of the eruption. In addition, the sociopsychological losses are in the form of trauma and stress experienced by people affected by the eruption of Mount Kelud in Pandansari Village.

Not only to overcome the physical problems but also the sociopsychological problems. The problems are in the form of trauma and stress due to various physical conditions experienced by society. Trauma and stress occurred because of their feeling of fear with the eruption that likely happens again, environmental conditions, loss of property, and even lost relatives. [12] states that such situations were the results of the interaction between one or combination of several physical phenomena and human communities as victims who are not able to cope with the conditions. To overcome these problems, it is required to have the psychological motivation that can help individuals to survive and fight from a

collapsed condition. The motivation might come from any individual or even provide by others.

Until today, most of the society is still experiencing fear and trauma when they heard the thunder. In solving their fear and trauma, Psychology healing had been provided by the private sector for the residents of Pandansari Village. All residents were invited to the Village Hall (from children to seniors) to join the psychology healing. Psychology healing is a motivation program to the villagers to make them sincere and strong to face the disasters which destroyed them. The program was aimed at not only reactivating the old activities that are rarely conducted but also entertaining and encouraging the villagers after the disaster experienced by them. Especially for children, the program was done by engaging them to play and giving the toys. Those were the activities conducted in Pandansari Village.

It took some efforts from both within the individual and from the outsiders to rise from a collapsed condition caused by the disaster. According to [15], there are three sources of resilience which are I have, I am, I Can. Based on the results of the research, the three sources of resilience had been owned by the society affected by the eruption of Mount Kelud in Pandansari Village.

I have a source of resiliency which associates with the meaning of a person to the amount of support offered by the social environment towards him. According to [16], social support is defined as "a social network's provision of psychological and material resources intended to benefit an individual's capacity to cope with stress". A good relationship is necessary for the society affected by the disaster to achieve resilience. The sense of social affects positively on the level of a person's resilience. This is in line with the findings of the [9] that "people with lower levels of perceived social support were less likely to be resilient". In this regard, the society of Pandansari Village had a high level of social support among each other. The support was in the form of motivation in order to rise up together to improve the quality of life and relieve trauma after the eruption. In addition, the material support was also given in the form of materials both from the government and volunteers—such as food, tarpaulins, household appliances – to decrease the burden of the society. Therefore, the society of Pandansari Village were able to rise gradually.

I am, is a source of resilience which associates with personal power consisted of the feelings, attitudes, and personal beliefs. It does not mean that society does not have the strength and confidence to rise from the disaster when in fact, there are supports given to them. Fortunately, the villagers of Pandansari are mostly enthusiastic and optimistic. They assume that natural disasters such as the eruption of Mount Kelud are natural phenomena that occurred anytime. Such an incident does not make them down or even desperate against the circumstance, but it likely makes the villagers of Pandansari become better in processing and utilizing nature.

I Can is a source of resilience associated with anything that can be done with respect to social and interpersonal skills. Many villagers in Pandansari have a good social life among members of society. The evidence of the social life was by the level of awareness among individuals to help each other. In addition, the villagers of Pandansari can also

develop their skills to find other occupations after the destruction of agricultural lands due to the eruption. The skills referred to the changes in the livelihood of farmers into sand and stone miners in Sambong river.

#### *A. The Image of Mount Kelud Eruption and Its Impact on Pandansari Village*

The incident of Mount Kelud eruption on February 13th 2014 was known as the greatest eruption. The blowing of volcanic ash reached West Java province which distance is 1000 km from the crater of Mount Kelud. There were three Regions (Kediri, Blitar, Malang) and Two Cities (Kediri and Blitar) which had great damages. When the eruption of Mount Kelud demolished Pandansari Village, many residents were shocked and said that "as if the world ends".

When the sound of thunder heard in the incident of the eruption which occurred at 10.00 pm, the communities of Pandansari were spontaneously run without any preparation. They had no time to save their wealth even securities. Such situation happened for there were no socialization and notices regarding the incident of Mount Kelud eruption. In fact, while the stakeholders of the village were still having a meeting regarding the eruption of Mount Kelud, it suddenly erupted and blew the materials in the form of sand to the Pandansari Village.

Cold lava damaged the main road access to the Pandansari Village as it destroyed the new bridge which had already constructed in 2010. The rural roads and bridge which were used to be in good conditions have broken and cut off the main access in and out to the Some Dusun (the terms of areas in the village) of Munjung, Kutut, and Pait in Pandansari Village. Now, people have to cross the river to go to Pandansari Village. The river flow which always changes made difficult for the people to cross the river.

After the eruption of Mount Kelud in 2014, the society who mostly worked as farmers felt confused because the fields, forests, and rivers that were once very supportive to their life had damaged caused by materials of the eruption and cold lava from Mount Kelud. The rice fields were formerly fertile, but now become infertile as sand has buried the farmland which made difficulties in planting for the farmers in Pandansari Village. The residents had to throw the sand or dig deeper to make arable land.

The fields that formerly were at the edge of Sambong River had buried by cold lava. Sambong River that used to only have a width of 5 meters are now increased to 50-60 meters wide. The condition after the eruption of Mount Kelud is very alarming because the river is no longer used as agricultural irrigation. Forced by circumstances, the cold lava which was settled in Sambong River make the society use the river as a place to mine the sand and stone as an alternative job after the yields decline due to the agricultural lands which were destroyed and cannot be cultivated again.

#### *B. Efforts to Overcome the Impacts of the Eruption of Mount Kelud*

##### *1) Efforts of Some Parties*

Efforts from some parties were conducted by volunteers and agencies that provided assistance. First, the important role of government agencies in an effort to restore the

affected area was responsive to the needs of people affected by the disaster. The responsiveness of the government was proven by various needs of assistance in the form of food, fresh water, and refuge. In addition, to restore the damaged houses of the residents, the government donated tarpaulins and roof tiles. This was caused by the collapse of almost entire roof of the houses in the village caused by sand and stones. Tarpaulins were given only a the temporary roof of the houses and will be changed until the donations of the roof had come.

Private institutions such as the company also played a major role in providing assistance to society affected by disasters. That assistance was likely the same with what government gave such as staple food (groceries), canned food, fresh water, and tarpaulin. Other aids from the company were specific ones such as compensation in cash and the basic salary received by some of our informants who worked at PT Sampoerna, even though they did not work for three months due to the eruption. The assistants were really helpful for the villagers of Pandansari for approximately six months after the eruption that they were no longer to think about how to obtain food.

Material assistance was also obtained directly from the general public who visited the Pandansari Village. Public assistance was usually in the form of cash given directly to some of the victims. According to the informant, the assistance given was incidental which meant that most of the volunteers came with groceries and money to be given directly to the victims in their houses. Even though the goal was good, but an uncoordinated process of the distribution of the kids made it uneven so that it caused a dispute.

In addition, the assistance was not only in the form of material that could help the villagers in solving the problem but also in the form of energy. The assistance of energy was needed to clean and repair the house, public facilities that were damaged, and the roads buried by the sand. Such assistance obtained from the Army, Police, and civilian volunteers who came from various parts of the country. Moreover, the role of the villagers Pandansari with mutual assistance system was able to accelerate the process of improvement of houses and sanitation in Pandansari Village.

In fact, the assistance given by the volunteers were both in the form of energy to clean and repair the house, and the motivation to encourage the victims of the eruption. Motivation provided was in the form of advice to remain steadfast in facing the problems and remain grateful. They explained that each disaster experienced by them was the secret of God and would be a happy ending afterward.

Other parties who contributed to providing the motivation was religious leaders, village officials, colleagues, and university students who became volunteers at the location. The explanation of motivation was generally done in a joyful way and informally. For instance, when community service conducted in the form cleaning or even building the houses, there will be a time on which chatter of supports among each other will be inserted in order to make the villagers get up and continue their spirit to improve their life. Such motivation made the villagers of Pandansari able to cope with, survive and emerge from the downturn due to the eruption of Mount Kelud.

## 2) *The Individual Efforts*

The assistance from the outsider had a big role, but the victims of the eruption of Mount Kelud also had their own efforts to address the problems caused by the eruption. Generally, this assistance could not meet all the needs, so that the society should try by themselves to cover the weaknesses of the needs. Some of them sold their jewelry, livestock or even borrow some money to meet certain needs.

In connection with the economic problems, especially to meet the needs, most people were looking for extra work. Based on the statistics of the village administration (2013), most of the villagers worked as farmers. The eruption of Mount Kelud made the agricultural activities paralyze. As a result, many farmers switched/added their jobs into sand miners in the lava river. By working as sand miners, it could help them to fulfill their needs.

The change was a natural thing and a necessity occurred in a society. The life of the Pandansari's villagers particularly after the eruption of Mount Kelud could not get rid of the change. The society's changes occurred in the job sector. Based on the phenomena, Birkmann, et al. have the same idea (2008) that "change is a dynamic and a constant of human society. Disasters occur within this dynamic and may Accelerate or modify it".

The conditions of the environment damaged by the eruption made the basic needs that were once available become rare and even unavailable. The society's needs depended on nature liked rice, vegetables, and fruits. Before the eruption, those needs were positively available in Pandansari Village. However, after the eruption of Mount Kelud, these resources disappeared, and eventually, the society had to buy food from outside the village.

The part of sociopsychological which formed resilience was the family as the motivation owned by Pandansari villagers in order to survive and fight in a collapsed condition after the eruption of Mount Kelud. In any circumstances, they had to struggle for their families. That was why most of the society kept their spirit to start their new life after the eruption of Mount Kelud. The victims of the eruption were actually so sad to see the conditions they experienced, but their sorrow was removed by thinking that many people were in the same conditions (affected by the eruption of Mount Kelud).

Fortitude is very needed in such a situation. To improve the fortitude of the society, they have to think that they should always be grateful for what has happened, especially feeling of gratitude for the lives that have been saved. Looking at the incidents of the eruption of Mount Kelud is one way from God to remind everyone to enhance their worship and not to be arrogant.

## IV. CONCLUSION

An eruption of Mount Kelud in 2014 was one of the disasters that affected large changes in society particularly in Pandansari Village, Ngantang District, Malang Region. In fact, the impact of the eruption affected the stable conditions of social structure, economy, and culture into vulnerable ones. One of the real impact was the geographical changes which also affected The sectors of the economy, the

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