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The Role Of Jangkar Kelud Community On Building Community Resilience Around Kelud Volcano, In Blitar, Kediri And Malang Regency, East Java Province, Indonesia

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Abstract. Eruption of Mt. Kelud volcano on 13 February 2014, at 22.50 WIT on which it spewed 150 million meters of cubic materials out, and later being claimed as the most significant eruption since 100 years ago, was resulted on zero victims without Blitar, Kediri, and Malang Regency. Whereas the status transition by Center for Volcano and Geological Hazard Mitigation (CVGHM), was relatively short (less than one month). According to CVGHM, seismic activities was seen since January 2014, dominated by volcano-tectonic type A (VA) and volcano-tectonic type B (VB). Based on these activities, status of Mt. Kelud was escalated on 2 February 2014 by Normal Active onto Alert. The resident's can react quickly by doing evacuation independently to sufficient location, although the situation was less than ideal. even, zero victims was reported During an eruption. This research planned to reveal the role of Jangkar Kelud community on building community resilience around Kelud volcano (Blitar, Kediri, and Malang Regency) During, before, and after Kelud eruption on 2014. This research was descriptive with qualitative approach research. Qualitative research is a research procedure which produces descriptive data by those who was observed, verbally or written, and also their behavior. The research objects was implemented with individuals involved on Jangkar Kelud community around Kelud volcano (Blitar, Kediri, and Malang Regency). This community was chosen because they had immense role During Kelud eruption, as they mobilized, prepared, and evacuated the community without disaster-prone area (DPA) as survivors. By this research, an on-depth description related to community resilience around Kelud volcano (Blitar, Kediri, and Malang Regency) on encountering potential threat of Mt. Kelud eruption, and also the role of Jangkar Kelud community on building community resilience who live around Kelud volcano (Blitar, Kediri, and Malang Regency) During, before, and after Kelud eruption on 2014.

Keywords: Community Resilience around Kelud Volcano

INTRODUCTION

On Kediri, 9 August 2008, there is a community, namely as 'Jangkar Kelud'. It have consisted of resident's representatives, teachers, community radio and government by three regencies (Malang, Blitar, and Kediri). Their objectives are to implement series of activities to reduce disaster risk. 'Jangkar Kelud' means 'Jangkane Kawula Redi Kelud', which word by word, 'Jangkane' can be translated as 'wish or hope', 'kawula' means community, and 'Redi Kelud' means the volcano itself, Mt. Kelud. Therefore, Jangkar Kelud means community's hope or wish to 'ronengkuh Kelud hangreksa rahayu', keep safe under Mt. Kelud. Jangkar Kelud is a non-governmental organization, which its mission is to build community resilience on facing the disaster of Mt. Kelud.

During 2008 until an eruption of Mt. Kelud on 2014, Jangkar Kelud with Kappala Ondonesia was actively involved on series of capacity strengthenong, namely as 'community-based disaster risk management, disaster simulation, and other relevant activities on the villages without by three regencies (Malang, Blitar, and Kediri). Jangkar Kelud involved several parties; government, SKPD, Kondergarten teachers, elementary school and junior high school teachers, other communities, community radio group, farm and entrepreneur group.

2

Eruption of Mt. Kelud volcano on 13 February 2014, at 22.50 WIT, spewed 150 million meters of cubic materials out which later beong claimed as the most significant eruption since 100 years ago.

Community resilience that saved them by the 2014 eruption was not an accident or coincidence. There was long-term processes of traonong and social values for building preparedness. Accordong to Ma'arif (2012), mitigation or preparedness cannot be separated by those who live withon DPA. Mitigation and preparedness was accumulation of experience or resident's' relationship with nature, which later developed onto existong knowledge and prnciple by time to time. The experience can be modified through traonong activities and other konds of activities. It was clear that the activities was not immediate process, but long-term process. Preparedness activities can be achieved not only by the community experience, but also by other supports such as groups of people, organization or government organization who cared about them.

CHARACTER OF ERUPTION BY YEAR TO YEAR

There are three types of eruption withon 1901-2014 of Kelud eruption. First, is semi-magmatic as *phreatic* eruption as the results of water condensation withon crater Lake, soaked up through the bottom fracture which blew up to the surface. Generally, this kond of eruption started the activity of Mt. Kelud especially magmatic eruption. Second, magmatic eruption created components of new volcano such as lava, pyroclastic avalanche and pyroclastic flow. Magmatic eruption is maonly explosive, affected by the oncrease of volcanic gas and eruption energy (especially thermal energy). Third, is the effusive eruption that can emerge to surface and create lava dome, or flow to the slope of mountaon. (*Bunga Rampai Penelitian: Pengelolaan Bencana pada Kegunungan Kelud pada Periode Krisis Erupsi* 2014).

TABLE 1. Eruption Data and Number of Victimss of Kelud Volcano

Year	Amount of Life Victimss Onformation	Onformation
1901	-	No onformation
1919	5160	
1951	7	
1966	210	
1990	34	
2007	-	The peak of the crisis occurred on November 3, 2007. The next day, on November 4, 2007, it was observed controllong lava domes on the middle of the crater lake, which signaled an eruption phase of Mt. Kelud has been proven to occur and effective effusion
2014	-	There was no fatalities

CHART 1. An eruption range of Kelud Volcano after the 20th century

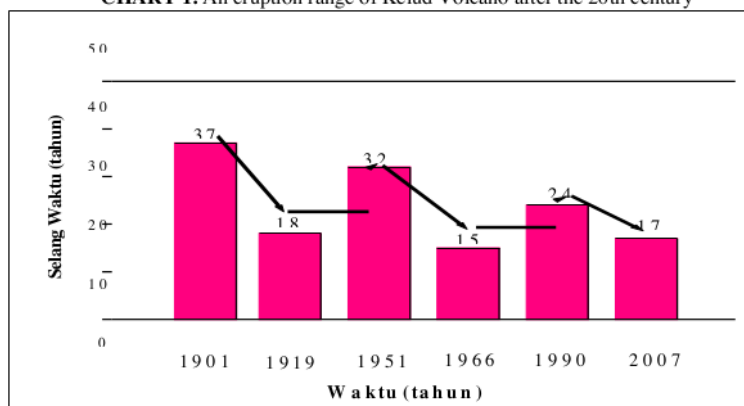




FIGURE 1. Kelud Volcano Crater after eruptions on 1990, 2007 and 2014

STUDY AREA DESCRIPTION

The research was implemented on individuals involved on *Jangkar Kelud* community around Kelud volcano (Blitar., Kediri, and Malang Regency). This community was chosen because they had immense role During Kelud eruption, as they mobilized, prepared, and evacuated the community within disaster-prone area (DPA) as survivors.

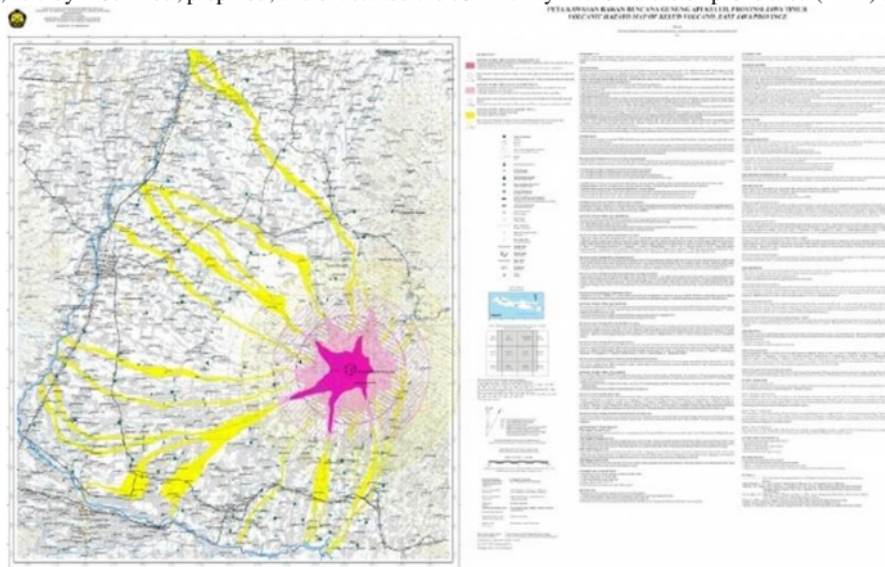


FIGURE 2. Map of the Kelud Volcanic Disaster Area

METHODOLOGY

This research was descriptive with qualitative approach research. Qualitative research is a research procedure which produces descriptive data by those who was observed, verbally or written, and also their behavior (Moleong, 2002). Data collections for this research was obtained through interview, observation which came by the resident's, *Jangkar Kelud* community.

Research steps was:

- Assessing literature on resilience/preparedness on community disaster
- Arranging interview instrument
- Implementing rapport to the community as preliminary research
- Collecting data research using interview (through FGD) and observation (documents of : photos During the activities, field condition, interview recordings/video)
- Data analysis and management (transcript of verbatim, coding and data analysis)

REVIEW OF LITERATURE

Community resilience : If we refer to several sources related to resilience, UN-ISDR (UN-ISDR Geneva 2004), stated that resilience as system of a capacity, community or society, which potentially exposed on a danger, to adapt, possessing coping mechanism to defend towards threat, and able to recover by the impact of disaster.

John Twigg (2009), on return, stated concept of resilience as ability to: anticipate, reduce, and absorb potential, destructive power or pressure through adaptation or confrontation; to manage or retain essential function or specific structure During disaster; to recover or get back again after disaster.

Community, as the most valuable aspect to build resilience, has the most essential part within process of resilience. Within the context of massive disaster risk reduction, community adaptation is profoundly needed. Adaptation can be understood as the ability to adjust within human or natural system on responding factual, expected situation or effect of theirs, or ability to adjust potentially harm things or exploitation of profitable opportunity. (BSN 2017 Desa dan Kelurahan tangguh bencana hal.1 dari 11).

The role of *Jangkar Kelud* community: Within the context of the role of *Jangkar Kelud* as effort on raising capacity of the community who live around Kelud volcano, their role was immense. It can be seen by the 2014 eruption, most of the resident's immediately evacuated themselves independently, which means that they understood what should be done. This was an immediate process, but this was a manifestation of long and simultaneous learning process.

Jangkar Kelud community actively implemented series of activity, related to capacity strengthening, which referred as "community-based disaster risk management, disaster simulation, and other relevant activities on the villages within by three regencies (Malang, Blitar, and Kediri). *Jangkar Kelud* involved several parties; government, SKPD, Kindergarten teachers, elementary school and junior high school teachers, other communities, community radio group, farm and entrepreneur group.

This was quite different During Kelud eruption on 1990 and 2007, on which lava dome created on the volcano; the resident's must wait other parties to save them by potential threat of Kelud eruption. The reason was they did not know what to do During status change of Mt. Kelud.

Before the 2014 eruption, *Jangkar* Community had built an information and communication system for the community by using various facilities as part of strengthening community capacity, as shown below.

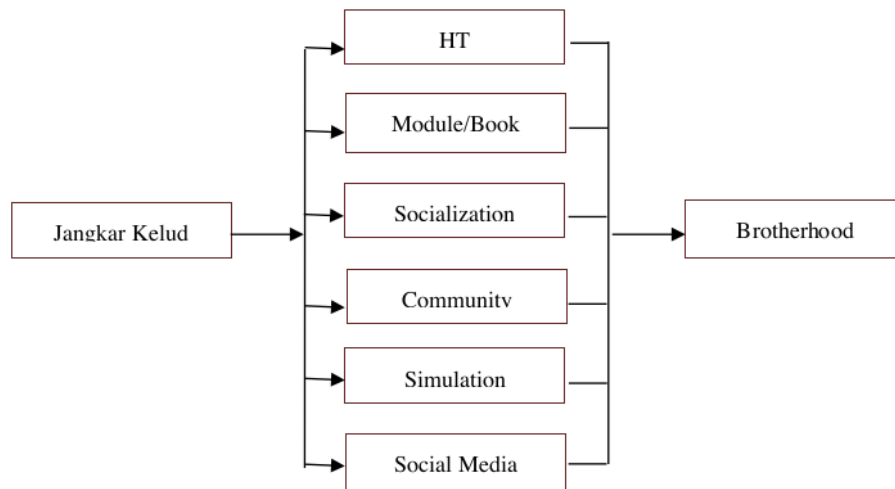


FIGURE 3. Mount Kelud Disaster Mitigation Media

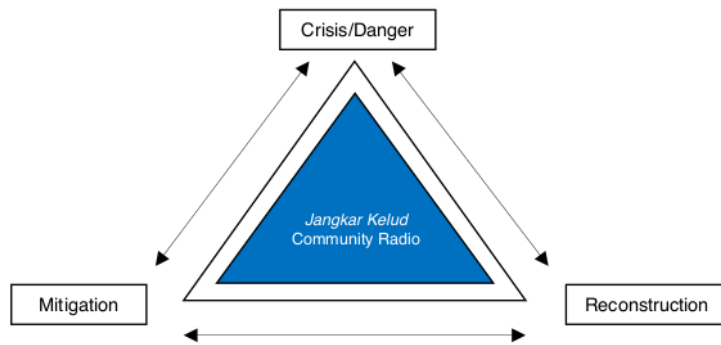


FIGURE 4. The existence of Kelud Anchor Community Radio on Disaster Mitigation

**Early Warning System Attachment
Jangkar Kelud Flowchart Early Warning System
Kelud Volcanic Eruption 2014**

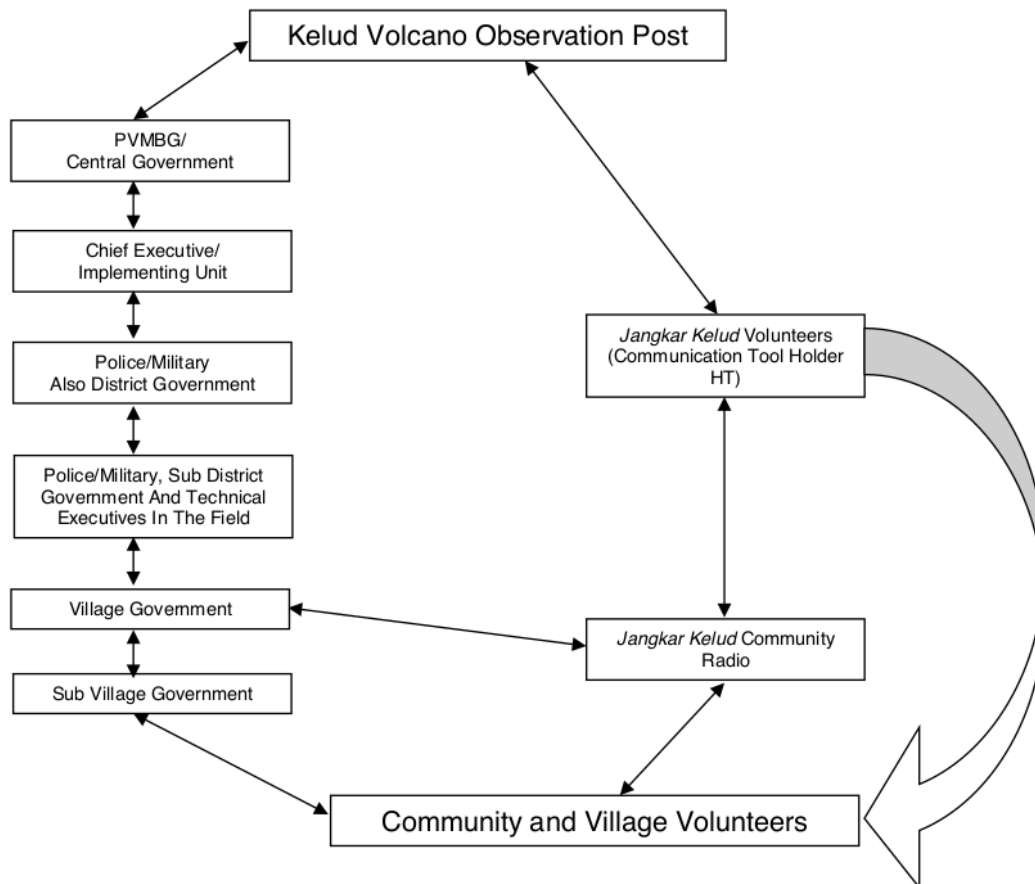


FIGURE 5. 2014 Kelud Anchor Onformation System and Community Flow

RESEARCH PROCESS

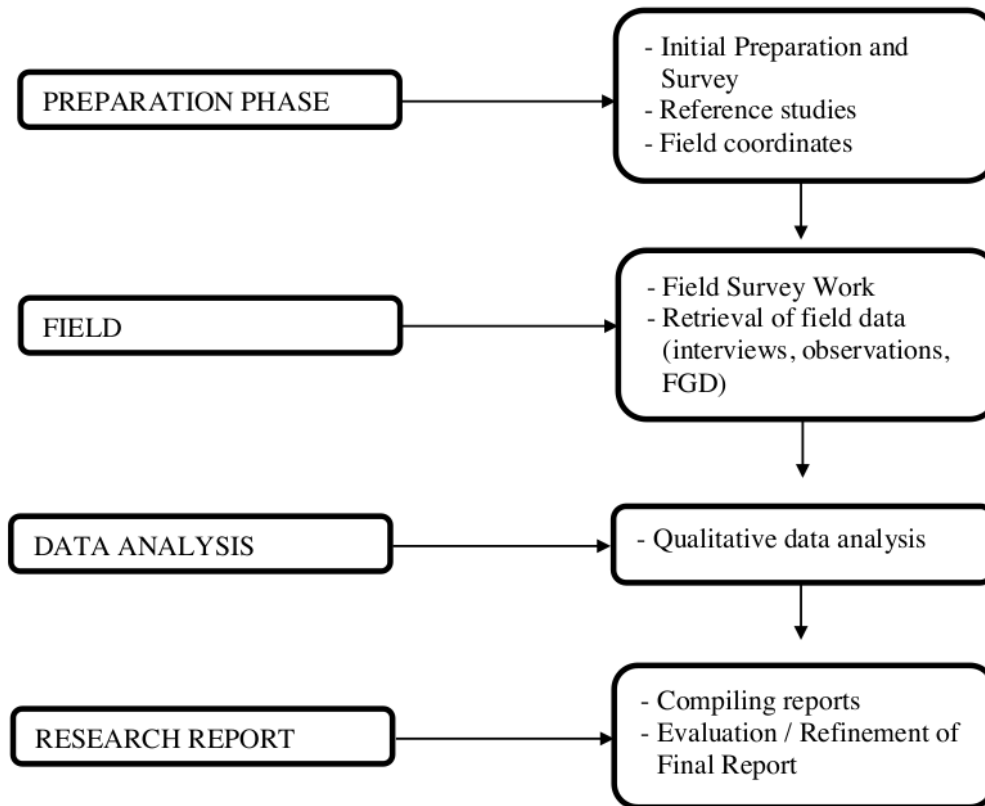


FIGURE 6. Flowchart of Research Stages

RESULTS AND DISCUSSION

Knowledge and Impact of Mt. Kelud Eruption: The resident's who live around Kelud mostly remembered and experienced 1990, 2007, and 2014 eruptions. Knowledge of Kelud disaster has been understood by the resident's, as they experienced an eruptions several times before. Currently they have local wisdom (*ilmu titen*) as their valued knowledge, with support of modern knowledge (on onformation and volcano). Therefore, they know more about the character of Mt. Kelud and its threat.

The resident's response make differences During the 1990, 2007, and 2014 eruptions, During the 1990 and 2007 eruptions, the resident's mostly had similar response, they did not know when and how to evacuate themselves and their assets, although they knew the character and disaster of Mt. Kelud. Thus, at that time, they just waited for the onformation and action by their government.

During the 1990 eruption, the resident's stated that Kelud spewed pyroclastic material. Blitar, and Kediri regency was mostly affected by an eruption. Meanwhile, the volcanic ash and pebbles did not reach Malang regency much.

During the 2007 eruption, the effects was not as severe as before. The reason was its eruption, which created lava dome of Mt. Kelud, was effusive type. The material did not reach the lump of Mt. Kelud's crater.

An eruption of Mt. Kelud on 1990 was similar to the 2014 eruption. It spewed pyroclastic material. Malang and Kediri regency was mostly affected by an eruption, while Blitar, regency was not.

Respond Towards An eruption of Mt. Kelud: Every volcano possess their character and potential threat. It will profoundly affect community response to do evacuation. During the 1990 eruption, which spewed dangerous pyroclastic material, there was no early warnong system, no onformation or advice by the government to the resident's before eruption to save their life, assets, and where to go and how to do. The resident's evacuated themselves During eruption, which later took victimss. There was 34 victims During the 1990 eruption of Mt. Kelud.

During an eruption of Mt. Kelud on 16 October 2007 at 10.00 WIT until 17.00 WIT, 306 occurrences of volcano-tectonic type B (VB) was recorded, as the process of progressive fluids (magma, gas, steam) withon stone crack. Therefore, on 16 October 2007, the status was escalated onto warnong when 500 occurrences of volcano-tectonic type B (VB) was recorded.

After significant escalation on 16 October 2007, seismic activity of Mt. Kelud lowasd down. On 24 October 2007, volcano-tectonic type A (VA) and volcano-tectonic type B (VB) was recorded on significant quantity. This happened until 31 October 2007. The crisis was on 4 November 2007, when lava dome on the center of crater lake appeared. It meant that the phase of eruption has occurred effusively. This eruption was differnt by 1901, 1919, 1951, 1966, and 1990 eruptions, on which they was explosive.

Response by the government changed During the 2007 eruption. Government did evacuation before an eruption. However, the resident's' reactions was different. Some wanted to be evacuated; some was reluctant because of many reasons. One of the reasons was seen primarily on Ngancar. They felt reluctant because the leaders did not onstruct them to evacuate. The leaders did not get guidance mystically and the animals on the mountaon was not comong down. Thus, the resident's assumed that Mt. Kelud would not have erupted.

An eruption of Mt. Kelud on 2014 was similar to 1901, 1919, 1951, 1966 and 1990 eruption, which was explosive eruption. It spewed pyroclastic material to Malang, Blitar, and Kediri regency. Malang and Kediri regency was mostly affected by an eruption, while Blitar, regency was not. Therefore, damages and losses was mostly suffered by the resident's on Malang and Kediri regency.

During the 2014 eruption, the disaster management of Mt. Kelud eruption was better than before. By the results of FGD, there was socialization and training before the 2014 eruption related to community-based disaster risk management. *Jangkar Kelud* community implemented these activities withon Malang, Blitar, and Kediri regency. Socialization by Local Agency of Disaster Management (BPBD) was implemented on these regencies (except Kediri) because the Local Agency of Disaster Management (BPBD) of Kediri regency was formed on 2015, after the 2014 eruption.

The community's knowledge on Mt. Kelud disaster was excellent and their preparedness was there. The early warning system was well-connected with Monitorong Post of Kelud. Dissemonation of onformation was well-onformed by all relevant parties. The community's knowledge of community-based disaster risk management as well. These conditions brought positive effect on the community's response. During an eruption on 13 February 2014, the resident's withon DPA of Mt. Kelud, with all they have, evacuated themselves ondependently. The result was zero victimss by the direct eruption.

CONCLUSIONS

Jangkar Kelud did essential role During 2008 until now, on regards to their effort on buildong community resilience for those who live around Mt. Kelud (Malang, Blitar., and Kediri regency). Community-based disaster risk management and emergency sufferer management was done by *Jangkar Kelud* community withon Malang, Blitar, and Kediri regency. Therefore, community preparedness and resilience was established on overcomong potential threat of Mt. Kelud. Thus, it was a "no wonder" when there was zero victims During the 2014 eruption, and they evacuated themselves ondependently.

Every potential threat has its characters; every character must be acknowledged by those who lived near the threat. Potential character of disaster has been understood by those who live around Mt. Kelud; Malang, Blitar, and Kediri regency. By their experience as survivors on the 2014 eruption event, the resident's received the onformation related to Mt. Kelud quickly by onformation technology. With the rapidity of received onformation, the resident's can make decision makong fast and precise on what response or what to do. The resident's know what, when, and how to rescue their life and assets when Mt. Kelud erupts. The resilience was built on Malang, Blitar, and Kediri regency, as *Jangkar Kelud* involves on the activity related to it. The resilience was built based on the resident's' knowledge on risk, traoned ability to respond to disaster, and others. This kond of resilience saved them by the 2014 eruption.

REFERENCES

1. Andreastuti Supriyati, EkoTeguh Paripurno, Hendra Gunawan, Agus Budianto, Devy Syahbanaa, John Pallisterc, (2017), Characteristics of the community response to the volcanic crisis on Sonabung and Kelud volcano, J. Volcanol. Temperature of the earth. Res Journal of Volcanology and Geothermal Research, Center for Volcanology and Geological Disaster Mitigation, Jl. Diponegoro no 57, Bandung 40122
2. National Disaster Repeat Agency.2017, National Disaster Preparedness Exercise Handbook, Buildong Disaster Awareness and Preparedness Awareness, Jakarta
3. Flowers for Research: Disaster Management on Kegunungapian Kelud During the 2014 Eruption Crisis Period, Junun Sartohadi and Elok Surya Pratiwi, LITERATURE REVIEWS for East Celebration UH III / 548 Yogyakarta 55167
4. John Twigg, Characteristics of Disaster-Resilient Communities: Guidance Notes, Version 2, DFID, 2009
5. Moong, J. Lexy, 2010. Qualitative Research Methods. Bandung: Teenager Rosdakarya
6. Paripurno, Eko Teguh., Nonil Miftaul Jannah. 2014. Community-Based Disaster Risk Management (PRBBK) Guide. Yogyakarta: Deepublish
7. RSNi, BSN. 2015 Management of Preparedness Traonong for Volcanic Eruption Hazards
8. Republic of Ondonesia Law No. 24 of 2007 concernong Disaster Management

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