COLLABORATION IN DISASTER RISK REDUCTION OF MOUNT MERAPI IN SLEMAN

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ABSTRACT

The main focus of disaster management is currently on disaster risk reduction activities. Mount Merapi in Indonesia is one of the most active volcanoes in the world with a four-year eruption cycle. The local government of the Sleman Regency has made several efforts to reduce the risk of impacts from the eruption of Mount Merapi. These efforts involve various elements in society. The purpose of this research is to identify the efforts made by the Sleman Regency Government in reducing the risk of the eruption of Mount Merapi and the factors that influence it. This research uses descriptive qualitative research methods with informants coming from the government, volunteers and the community. The findings of this study are the activity of risk reduction of eruption Merapi Mount in Sleman consists of physical and non-physical mitigation. Physical mitigation includes the construction of the Merapi Sabodam, construction of the Early Warning System, determination of evacuation routes and construction of refugee shelters. Non-physical mitigation includes the preparation of a contingency plan for the eruption of Mount Merapi, the formation of Destana (Disaster Resilient Village), the sister village and sister school program, the establishment of a disaster safe education unit, the establishment of the Operational Unit and the Implementing Unit for disaster management. The program is run by the government along with non-state actors to be affected by the starting conditions of each party, ability to combine the resources owned by each party, to shared information and commitment to a common purpose.

Keywords: Disaster Management, Governance Collaboration, Risk Reduction, Mount Merapi, Sleman Regency.

INTRODUCTION

Disasters often occur in Indonesia due to the geographical condition of Indonesia which is located between the confluence of three tectonic plates of the world, namely the Indo-Australian Plate, Eurasian Plate and Pacific Plate. Indonesia is also flanked

by two continental exposures namely Sahul Exposure and Sundanese Exposure. Besides, Indonesia is traversed by a series of Mediterranean Circumcision mountains and a series of Pacific Circumcision mountains so that it becomes part of the Pacific Ring of Fire. This condition makes most areas of Indonesia a disaster-prone area and becomes a fairly complete disaster laboratory. As a ring of fire pacific crossing country, volcanic eruption disasters belong to the category of disasters that often-hit Indonesia. One of the volcanoes to watch out for is Mount Merapi which is located between the Province of Special Region of Yogyakarta and Central Java Province. The mountain has a quadrennial eruption cycle with tremendous crushing power (Table 1). In 2010, The Eruption of Mount Merapi became the worst disaster of Merapi eruption since 1870 because as many as 32 villages with a population of more than 70,000 people were required to evacuate because they were in a dangerous zone (Sopha, Achsan, & Asih, 2019). The event required 150,000 people to be displaced with the spread of evacuation points reaching 553 points. The death toll was 346 people and 2,682 families were homeless (Rahman, Nurhasanah, & Nugroho, 2016).

Table 1. Merapi Eruption History Since 1900s (Voight, Constantine, Siswowidjoyo, & Torley, 2000)

TIME	EVENTS
January 30, 1904	There were 16 casualties, 14 seriously injured and three villages completely damaged.
1906	A major eruption, tens of thousands of people were buried in materials and property.
October 1920	A moderate eruption with 35 fatalities, 1 village completely damaged and 85 km2 of the agricultural area damaged.
December 17, 1930	Recorded as the largest eruption with 1,369 people dying, the hot cloud slid 20 kilometres and hoarded 13 villages.
January 18, 1954	A hot cloud slide left 64 people dead and 57 injured.
May 8, 1961	The eruption was marked by lava flows, hot clouds, ash rain and lava flooding, 6 people were killed and more than 100 homes destroyed.
January 7, 1969	A moderate eruption killed 3 people, 3 villages and 19 houses were damaged.
April 15, 1972	A major eruption left 200 people dead and three villages destroyed.
November 1984	The eruption left 52 people dead, 4 injured and 4000 displaced.
November 22, 1994	Merapi erupted at 10:15 pm with the number of victims 58 people were killed exposed to bursts of clouds hot
August 17, 1997	Merapi erupted at 10.30 am by spouting hot clouds and flowing in Krasak River along 6 kilometres and Boyong River for 4-5 kilometres.
February 10, 2001	Merapi erupted but did not cause any fatalities, as many as 571 people were evacuated.
May 2006	The 2006 Merapi eruption left two volunteers dead trapped by a hot cloud inside the Kaliadem bunker.
October- November 2010	The eruption left 151 people dead, 320,090 displaced, 291 houses damaged and one embankment destroyed in Ngepos Village due to the cold lava overflow.
May 11, 2018	Merapi erupts again at 07.32 with fire Matic type with level 1 or normal status.

Sleman regency also suffered great damage and losses (Table 2). The impact of the 2010 eruption hit all sectors of human life. All sectors can be mapped into five sectors, namely housing, infrastructure, social, economic and cross-sector. The biggest losses hit across sectors, while the smallest losses were suffered by the social sector. It also shows the paralysis of people's lives at that time and it takes a long time to recover the entire sector at a cost that is not small.

Figure 1: Bumdes Strengthening Scheme Through Collaborative Governance (Regional Disaster Management Board known as BPBD Sleman, 2012)

SECTOR	LOSS VALUE (RUPIAH)
Housing	477,684,984,000
Infrastructure	224,426,945,088
Social	49,639,528,731
Economic	1,261,330,945,178
Cross-Sector	3,392,686,800,897
Total	**5,405,681,153,844**

The impact of the Mount Merapi eruption event is not only there. Other issues have also arisen, especially related to the problem of disaster survivors. During the evacuation process, many families were separated and it was quite difficult to find their families at the evacuation site (Handayani, Rinawati, Sari, & Rifa'i, 2019). The problems of refugee camps include overloaded shelters, uneven aid and refugee camps where there is no separation between men and women, children, and the elderly, causing psychological and health impacts for refugees (Yudistira, Fadilah, & Setiawan, 2020). There is even a group of people who feel marginalized so that they cannot help or provide assistance during the eruption of Mount Merapi (Balgos, Gaillard, & Sanz, 2012).

Disaster management in Indonesia refers to (Undang-undang tentang Penanggulangan Bencana [UUTPB], 2007) on Disaster Management. The Law confirms that disaster management in Indonesia is conducted through three stages, such as follows:

The pre-disaster stage is a disaster management effort that is carried out when conditions do not occur but it is predicted that there will be a potential disaster in an area.

The emergency response stage is an effort made in the event of a disaster. Efforts made at this stage are generally in the form of evacuation and relief measures for victims.

The post-disaster stage is the stage of disaster management after the disaster, including rehabilitation and reconstruction activities of public facilities that are destroyed and damaged until the wheel of life can run again.

In the current condition, the pre-disaster stage becomes the main focus of the government in disaster management. Disaster risk reduction efforts become mainstream in various disaster management policies in Indonesia so that impacts can be minimized and countermeasures can run quickly, precisely and efficiently. Sleman Regency Government through Sleman District Regulation according to (Prasetyo, 2019) on Disaster Management has established disaster management efforts in Sleman by focusing on cooperation with non-government parties. This article will discuss disaster risk reduction efforts that have been conducted by the Sleman district government and the factors that affect them.

LITERATURE REVIEW

The Center for Research on the Epidemiology of Disaster (CRED) defines disasters as circumstances or events that weaken local capacity and thus require external assistance from the national and international levels. Each disaster has different characteristics so that the handling efforts will also be different according to their respective characters. (Ho, Shaw, Lin, & Chiu, 2008) identified disaster characteristics into four characters. First, disasters are events that focus on chaos related to the speed of events, estimates and magnitude. Second, disasters relate to the effects or impacts of such events on humans. Third, damage or destruction of infrastructure. Fourth, there is a need for other human assistance (Buchari, Santoso, & Marlina, 2017). Some of the key

elements for designing an effective institution in implementing disaster management include access to information, autonomy, cost affordability, accountability, adaptability, efficiency, equity and sustainability. Furthermore, there are several critical factors to consider in disaster management (Wolfe, & Tubi 2019):

- Government political commitment. Disaster management efforts should be accommodated in policies and regulations and not just as a form of routine activities.
- Institutionalization: building sustainable mechanisms. A disaster-affected community has a variety of urgent needs that can respond quickly and appropriately only through effective coordination of the actions of different organizations.
- Management information system. The problem of lack of important information among stakeholders is often encountered in disaster management.
- Community participation is needed in disaster risk reduction to be effective.
- Mobilization and distribution of resources. Collective efforts from all sectors at all levels contribute to disaster risk reduction tasks.

Volcanic eruption disasters can be seen from the things produced during the eruption, namely:

- Volcanic gases can harm living things such as carbon monoxide (CO), Carbon dioxide (CO_2), Hydrogen Sulfide (H_2S), Sulfur Dioxide (SO_2) and Nitrogen (NO_2).
- Lava accompanied by sand and hot rock which is a very high-temperature magma liquid out to the surface of the earth can be diluted and viscous.
- Lahar is lava that has been mixed with rocks, water and other materials.
- Ash rain in the form of very fine material and can be carried by the wind up to hundreds of kilometers that can interfere with the respiratory system of living things.
- Hot clouds are the result of eruptions that flow rolling like clouds and contain varicose veins, hot incandescent rocks and volcanic material with a temperature of more than 600°C which causes severe burns.

The development of a way of view on disaster management in the world from conventional to holistic began from the Indian Ocean tsunami event in 2004. After the 2004 tsunami, the Hyogo Framework for Action (HFA) 2005 – 2015 brought about fundamental changes in disaster management. HFA contains five priorities of action, namely 1) disaster risk reduction governance, 2) risk assessment and early warning, 3) knowledge and education, 4) reducing underlying risk factors and 5) disaster preparedness and response (Djalante, Garschagen, Thomalla, & Shaw, 2017). This indicates that there is a shift in perspective towards disaster. Disaster events that were originally seen as unpredictable, erratic and unavoidable natural events turn into natural events that should be predictable and avoided by performing these five actions or in other words focusing on comprehensive efforts through disaster risk reduction. Indonesia has placed an inclusive reduction in disaster risk but has not made a significant impact due to the lack of a shared vision (Srikandini, Hilhorst, & van Voorst, 2018). Disaster reduction reform efforts can be effective if activities are developing a shared vision, adopting multi-level planning, activities to integrate the Law, the existence of a network of collaborative organizations, and establishing a cooperative funding model (Howes et al., 2015). Disaster risk reduction activities involving private parties proved able to reduce the burden of the government (Nguyen, Imamura, & Iuchi, 2017). However, it is not uncommon to find some collaborations that have not been able to optimally result from some obstacles such

as the emergence of distrust sentiment towards the perception of others, the dominance of technocratic, lack of certain capacities, challenges on how to share risks, and short-term political contestation (Ziervogel, Waddell, Smit, & Taylor, 2016).

Disaster as an event provides complex and complex problems that require the cooperation of various parties. Cooperation involving the government and actors outside the government is said to be collaborative governance. (Ansell, & Gash, 2008) defined collaborative governance as a joint decision-making process involving public bodies with non-governmental stakeholders. The collaboration aims to create or implement public policy as a common consensus. collaborative governance can also be interpreted as a condition whereby the government in fulfilling public objectives is carried out by collaboration between organizations and individuals (Breyer, Donahue, & Zeckhauser, 2011; O'Flynn & Wanna, 2008) defined collaboration as a form of working together or working with others by engaging actors (individuals, groups or organizations) who work together in several efforts. (Emerson, Nabatchi, & Balogh, 2012) defined collaborative governance more broadly as a process and structure in the management and formulation of public policy decisions involving actors who constructively come from various levels to achieve public goals that will not be achieved when implemented by one party only. The implementation of collaborative governance is influenced by several things, including initial conditions, ability to mobilize resources, information disclosure and Commitment to a common purpose (Ansell, & Gash 2008; Emerson, Nabatchi, & Balogh, 2012).

RESEARCH METHOD

This study aims to describe disaster risk reduction activities in the face of the Mount Merapi eruption disaster by the local government of Sleman regency as well as the factors that affect it. As an activity involving cooperation with actors outside the government, the study used the collaboration model of (Ansell, & Gash, 2008; Emerson, Nabatchi, and Balogh, 2012). Both models are used to identify and analyze factors that influence collaboration in disaster risk reduction of mount Merapi eruption in Sleman.

This study uses descriptive qualitative research methods. (Creswell, 2013) defined qualitative research as research that begins with the assumption and use of an interpretation/theoretical framework that shapes and influences the study of social or human problems. The approach used in this study is a case study approach because Mount Merapi has unique characteristics compared to other volcanoes in Indonesia. Data collection using observations, interviews, documents and triangulation. Then the data is analyzed with three steps, namely condensation of data, presenting data and concluding. Condensation of data related to the data selection process by the research problem for further data summarized and concluded. The research was conducted in Sleman Regency with research informants from Regional Disaster Management Board known as BPBD Sleman and volunteer communities in Sleman Regency.

RESULTS AND DISCUSSION

Disaster risk reduction program

Disaster risk reduction programs are an integral part of disaster management. The implementation of disaster management in Sleman Regency has become a regional development policy implemented in the long, medium and short term. The purpose of disaster management in the region is expected to provide security and protection to the community against disasters and reduce damage and losses resulting from a disaster event. Sleman Regency Government set six main strategies in the implementation of disaster management in Sleman Regency which include:

- Strengthening the rule of law (regulation) and capacity. institutional by accelerating the preparation of regulations related to

disaster management and disaster risk reduction efforts, implementation of risk analysis. Disaster for large-scale development activities, as well as strengthening Disaster Management Operations Control Center to be resilient.

- Integrated Disaster Management Planning through the creation of a Disaster Risk Assessment Document that can be accessed by all stakeholders, development of data composition and information on regional disasters, early warning system, emergency response and the creation of regional disaster contingency plans.
- Disaster risk reduction in a structured manner through the utilization of educational results, training, and research related to disasters.
- Mainstreaming disaster risk reduction with government, community and business partnerships, as well as the development of disaster preparedness culture to increase the capacity and participation of the community and the business world.
- Unification of disaster objectives, programs and activities to protect the community from disaster threats.
- Disaster management.

Physical Disaster Mitigation

- Construction of Merapi lava Sabodam. Sabodam is a lava flow control building that crosses the river flow. Sabodam controls sediment by holding, holding and draining material along with water downstream. During explosive eruptions, Sabodam will be useful in withstanding the rate of cold lava floods and volcanic material carried from the foot of the mountain to community settlements. Sabodam in Mount Merapi amounted to 264 pieces built-in several streams under Mount Merapi with different types. When there is no eruption, Sabodam is used by the surrounding residents as a means of recreation and tourism. Sabodam development using funds from the State Budget whose work is carried out by the Ministry of Public Works and Public Housing (PUPR).
- Early Warning System (EWS) is an early warning system that involves various parties to reduce the risk of disasters. EWS can be said to be a communication system that starts from detection to decision making. Mount Merapi EWS starts from the heat cloud event detection sensor and cold lava flood that is placed on Mount Merapi area. The sensor will detect the event that will occur, where the results of the sensor will be submitted to various parties for follow-up related to disaster preparedness.
- The evacuation route is a special route that serves to connect hazardous areas to safe areas. The existence of evacuation routes is very important for disaster risk reduction efforts because it is used to evacuate residents from dangerous places to safe areas. A path can be used as an evacuation route if it has direct access to gathering points, open spaces and roads to safe areas. Also, the path should be in good condition and ready for use. Evacuation routes are also possible not to cross bridges or rivers. The condition of the evacuation route of Mount Merapi eruption in the Sleman Regency is currently at some point quite alarming with conditions that are quite difficult to pass through.
- The refugee camp (barracks) is a gathering place for refugees in a safe area. To reduce disaster risk, Regional Disaster Management Board known as BPBD Sleman has established several shelters in safe areas that will be used during the eruption.

Non-Physical Disaster Mitigation

Physical mitigation that has been done will not run well and efficiently if it is not supported by non-physical mitigation activities. Non-physical mitigation is an effort to prevent and prepare for disasters through programs of educational activities, socialization and training. Some non-physical mitigation activities related to disaster risk reduction of Mount Merapi eruption in Sleman Regency are as follows:

Contingency Plan

According to (UUTPB, 2007) on Disaster Management mandates everyone, institutions and businesses to participate in disaster management. Governance of activities in disaster management has the aim of reducing vulnerability and increasing the capacity of both government agencies, communities and other parties to reduce the impacts and losses caused by disaster events. In the pre-disaster stage, a preparedness plan is prepared to deal with emergencies by looking at the situation of potential disasters in the area. The contingency plan is a plan that involves various groups of people, organizations that work together on an ongoing basis to formulate emergency response guidelines quickly and appropriately.

Merapi eruption contingency plan is a form of efforts to reduce the risk of Merapi eruption disaster based on the Merapi eruption in 2010. The contingency plan contains eruption simulations with several alternative treatments such as evacuation barracks scheme, logistic dropping, sanitation, clean water, health services and evacuation transportation. The handling of Merapi eruption refugees is divided into three evacuation areas, namely 1) the west includes people who live in Turi and Tempel subdistricts, 2) the middle includes the people in the Pakem sub-district, 3) the east includes Cangkringan and Ngemplak communities). The Contingency Plan organizes an emergency response organization consisting of the Commander of the emergency response command, the deputy commander, the head of the evacuation, the secretariat and various areas related to the needs of refugees, among others, the areas of operations, health, logistics, refugee barracks and information, education, livestock, and regional security.

With the contingency plan, it is expected that the handling during the Merapi eruption will be fast and effective. This document will be used as a guideline for stakeholders in mobilizing their resources following the roles and tasks that have been determined. A contingency plan can be activated after the results of a study from BPPTK Yogyakarta which stated the status of Mount Merapi entered at the level of "SIAGA". Similarly, this contingency plan will never be active if the status of Mount Merapi continues to be at the "GENERAL" level.

In addition to the district government, the village government in disaster-prone area III also has a contingency plan or Disaster Management Plan (RPB) village. RPB's Village is prepared by actively involving the community both in the process of drafting and legislation, to be later passed into Village Regulation *(Perdes)*. This is a manifestation of the political commitment of all elements of the village government in protecting its people from the threat of disaster.

Establishment of Disaster Resilient Village (DESTANA)

BPBD Sleman prioritizes villages located in KRB III Merapi to be formed soon DESTANA (Disaster Resilient Village). Regional Disaster Management Board known as BPBD Sleman has a target in 2021 all villages in Sleman Regency have become disaster resilient villages. However, the target will be difficult to achieve due to various obstacles, therefore from 2012 to 2020, there are 62 DESTANA formed from 86 villages in Sleman Regency. The formation of DESTANA refers to Perka. (Widodo, & Hastuti, 2019) on Guidelines, Public, Disaster Resilient Village. DESTANA (Disaster Resilient Village) is a form of village independence to be able to adjust when experiencing disaster threats as well as the ability to restore conditions as soon as possible after

a disaster. After being formed into DESTANA (Disaster Resilient Village), each village is expected to be able to recognize the threat of disaster in the area. The village is also expected to be able to coordinate and organize its capacity to minimize the risk of vulnerability and improve skills to deal with disaster impacts.

Disaster resilient villagers are actively involved in all activities related to potential disasters in the region starting from the process of assessing potential disasters to the necessary efforts in reducing the risk of disasters that will be faced. DESTANA (Disaster Resilient Village) as a community-based disaster risk reduction effort aims to create a sense of security to disasters to the community, increase community participation in disaster activities, increase the institutional capacity of the community, increase support to the government in the technical capabilities of disaster management, advance the cooperation of various parties related to disaster risk reduction.

Perka BNPB asserts that DESTANA (Disaster Resilient Village) is a place for people to actively participate in disaster management. DESTANA (Disaster Resilient Village) is developed and implemented using the following principles of disaster is a joint business, based on disaster risk reduction, fulfilment of the rights of the community and society as the main actors, participatory by using local resources, inclusive, based on humanity, justice and gender equality. DESTANA (Disaster Resilient Village) also has a side in vulnerable groups, is open (transparency) and has accountability, is partnership or cooperation, benefits multi-threat, is autonomous and sustainable, and is organized across sectors. The principle provides a strong basis that DESTANA (Disaster Resilient Village) is an activity that is "from", "by", and "for" the community. The role of the government in this program is only as a driver and facilitator for the village to form a disaster resilient village. Government intervention and non-governmental actors should be as little as possible and more stimulant.

DESTANA (Disaster Resilient Village) is autonomous and outside the structure of village government, but this does not cover the possibility of involvement of elements of village government to be involved in it. Community involvement is organized in village community-based disaster volunteers or groups. DESTANA development is carried out through village disaster risk assessment activities including the inventory of threats, vulnerabilities, capacity owned by the village. DESTANA (Disaster Resilient Village) also developed a village disaster management plan and a village contingency plan. This document will be used as a guideline in moving the resources owned by the village sourced from various parties in the village.

DESTANA (Disaster Resilient Village) is driven by the Village Disaster Risk Reduction Forum (Village FPRB). FPRB consists of elements of village government, non-government, community and business institutions. The FPRB was formed with attention to the interests of vulnerable groups and its members are representatives of all elements of society so that no party is marginalized or marginalized in the decision-making process. FPRB as a forum that contains many parties need good cooperation, compact, creative and trust each other.

Workshops and training activities conducted in DESTANA (Disaster Resilient Village) work program are expected to increase the capacity of citizens and officials in disaster management. DESTANA with its FPRB can encourage the village government to include the Village Disaster Management Plan (RPB) into Village Medium-Term Development Plan so that it can be legalized through village regulations. With the legalization, the PRB program will get funding from the village government so that the village can provide disaster equipment and equipment.

Sister Village and Sister School

Merapi eruption in 2010 provides valuable lessons for people living around Mount Merapi, especially those in a radius

of 0-15 km. At that time, there was a tremendous panic that confused the evacuation and evacuation. This resulted in many separated families and difficulties in logging and distributing logistics for refugees. Learning from the experience, Regional Disaster Management Board known as BPBD Sleman initiated the sister village and sister school programs (Elysia, & Wihadanto, 2018).

Sister village or "Paseduluran Desa" is a program that involves cooperation between two adjacent villages to evacuate victims to safe areas. The consideration of this program is the spread of the impact of Mount Merapi eruption, the scheme of evacuation flow of residents with effusion scenarios, the threat of periodic Merapi eruptions with an average of 4 years of eruption cycle and the experience of Merapi eruption in 2010. Villages affected by the Merapi eruption can evacuate their residents to the village that has been designated as a buffer for the village. Thus, this program is expected to be able to realize Merapi eruption disaster management quickly, precisely and coordinated.

The cooperation agreement between the two villages in disaster management of the Mount Merapi eruption was outlined in a memorandum of understanding (MoU) between the two sides signed by the two village heads witnessed by the Chief Executive of BPBD Sleman and the local sub-district. The signing of the cooperation agreement was carried out during the rehearsal and inauguration of the establishment of DESTANA. Currently, all villages in the KRB III area have cooperated with buffer villages. Some cooperation between villages that have been implemented are:

- Kepuharjo Village and Glagaharjo Village in collaboration with Argomulyo Village Cangkringan District.
- Kepuharjo Village Cangkringan District in collaboration with Bimomartani Village Ngemplak District.
- Argomulyo Village Cangkringan District in collaboration with Tirtomartani Village Kalasan District.
- Wukirsari Village Cangkringan District in collaboration with Bimomartani Village Ngemplak District.
- Girikerto Village Turi Subdistrict in collaboration with Trimulyo Village Sleman District.
- Hargobinangun Village Pakem Subdistrict in collaboration with Harjobinangun Village Pakem District.

The sister village program contains the rights and responsibilities of each village. The cooperation of the two villages regulates the following according to (Elysia, & Wihadanto, 2018):

- Readiness of evacuation routes, facilities and refugee infrastructure.
- Borrowing of building facilities and other supporting facilities.
- Increased community participation in both villages.
- Awareness of the people of both villages to maintain each other's tranquility, security, order and comfort on both sides.
- Establish cooperation, communication, family, economy, society and culture between the two parties.

During the Merapi eruption in 2010, many refugees occupied school buildings as shelters. This certainly has an impact on teaching and learning activities in the school. When evacuating, the children who participated in the evacuation were also unable to participate in teaching and learning activities as usual. This is what underlies the formation of sister school. The sister school program is combined with the sister village program so that there will no longer be disruption of teaching and learning activities for children in both villages. The buffer school will be used by children from villages affected by the Eruption of Mount Merapi.

Figure 2: Sister School (Researcher Documentation, 2020)

Establishment of Disaster Safe Education Unit

The next Merapi eruption disaster risk reduction program is the Disaster Safe Education Unit (SPAB) program. This program is a development of the previous program, namely The Disaster Preparedness School (SSB). SPAB is an educational unit that implements safe facilities and infrastructure and has a safety culture to protect school residents from the threat of disaster. SPAB emphasizes three pillars, namely the condition of safe learning facilities, schools have disaster management and educational curriculum related to disaster risk prevention and reduction efforts in schools. This program is guided by (Peraturan Menteri Pendidikan Dan Kebudayaan Republik Indonesia [PMPDRI], 2019) on the Implementation of the SPAB Program with coverage ranging from PAUD education to high school level. BPBD as the leading sector in the disaster field has a role as a driver and facilitator of the SPAB program implementation.

Related to the PRB eruption of Mount Merapi, BPBD Sleman has encouraged and facilitated the establishment of Disaster Safe Education Unit in disaster-prone areas of Merapi eruption. Schools are prepared to face the threat of Merapi eruption while events occur during teaching and learning activities. This program includes self-evacuation activities for school residents to go to a predetermined safe zone so that the evacuation of school residents can run as desired.

Establishment of Unit Operational and Unit Implementation of disaster management

To strengthen disaster management institutions, BPBD Sleman established disaster management units at the village and sub-district levels. The unit was located in the Sub-district (Pakanewon) is called the disaster management operational unit (OPS PB unit), while in the village (Kalurahan) is called the disaster management implementation unit (LAKS PB unit). OPS PB unit was formed by the Chief Executive of Regional Disaster Management Board known as BPBD Sleman with domiciled in the Sub-District. This unit coordinates and is responsible to the Chief Executive of BPBD. OPS PB unit was built through deliberations at the sub-district level where

the results of deliberations will be proposed by the Sub-District to the Chief Executive of BPBD to be confirmed. The ops unit is guided ex-officio by District- Head with elements consisting of the district government, military rayon command, police sector and volunteer community disaster management.

LAKS PB unit is located at the village level and led ex-officio by the village head. LAKS PB unit is located under the coordination of OPS PB unit and is operationally responsible to the Chief Executive of Regional Disaster Management Board known as BPBD. The management was built through the deliberation of the disaster management component in the village which then the results were proposed to the chief executive of Regional Disaster Management Board known as BPBD. The unit consists of the village government component, the military rayon command represented by Military Regional Command, the sector police represented by Community Police Officers, and the community of disaster management volunteers in the village.

Factors that affect

Starting Condition

The starting condition of each actor involved is very decisive in starting a collaboration and each actor has different conditions. This study reveals the starting condition of each organization involved in the collaboration of disaster risk reduction of Mount Merapi eruption in Sleman by looking at the availability of resources and incentives to participate. The results of the study found that in terms of human resources Sleman district was awarded abundant human resources. This can be seen from the thousands of volunteers who are recorded not including undocumented volunteers. Most volunteers are equipped with skills and skills related to disasters. Even many volunteers with special abilities are sent to other disaster areas to help victims there. In terms of budget resources, the local government has given budget allocation to BPBD Sleman to manage the budget related to disaster management in Sleman Regency. The budget ranges from nine to ten billion annually.

Another field finding related to the starting condition is that volunteers participate voluntarily so as not to want any incentives from the government or other parties. This is certainly a very supportive thing in disaster risk reduction activities. The sincerity of the volunteers in helping the government's work related to disasters deserves thumbs up. Volunteers have a clear attitude regarding incentives that for them it becomes taboo when they receive rewards for what they do in helping people affected by disasters. They don't want to be labelled as paid volunteers. The study also found obstacles related to the initial condition of the existing budget system sometimes complicates the maintenance system of equipment owned. Another finding is that BPBD Sleman sometimes carries out activities by including pocket money for the participants, this can cause social distress among volunteers.

Joint Capacity

Collaboration brings benefits with the exchange and incorporation of knowledge that each actor has collaboration. Transfer of knowledge and distributing to each collaboration participant will improve the capabilities and quality of human resources of collaboration participants. This advantage is obtained in collaborative governance of disaster risk reduction of Mount Merapi eruption in Sleman Regency. Volunteers numbering thousands of people who are members of various communities have different knowledge and skills. This diversity provides its advantages, where volunteers will share their knowledge and skills. These conditions create dynamic collaboration and continue to evolve towards more. The skills and skills of volunteers needed in disaster management reach 26 clusters. This need will certainly be difficult to meet if it relies on only one volunteer community. Therefore, it takes transfer knowledge and skills between volunteers. With the collaboration between disaster volunteers, of course, the 26 clusters can be easily realized. Transfer of

knowledge and knowledge between volunteers will improve the relationship between volunteers.

Joint capacity not only occurs between volunteers but also between villages. The sister village and sister school programs encourage each other to share facilities and infrastructure while the eruption of Mount Merapi hits. The program will mobilize all resources to support disaster survivors to be safe from the threat of the Mount Merapi eruption. This can be realized because of the willingness and ability of each stakeholder in mobilizing the resources owned. Buffer villages feel that they have a responsibility to the affected areas. The buffer village will make maximum efforts in carrying out evacuation and assistance to the affected villages. As long as the area is a refugee site, the buffer village will strive to be a good host by helping disaster survivors according to their abilities.

Information Sharing

Collaboration is an activity that involves many parties so that the delivery of information becomes an important part of a collaboration. Errors in the delivery of information can create failures to the future of collaboration. This study found related information sharing in collaboration with a disaster risk reduction of Mount Merapi eruption that to reduce disaster risk Regional Disaster Management Board known as BPBD Sleman has used technology especially in the delivery of information related to disaster threat early warning system. Researchers also found there is a community of disaster volunteers who still use local knowledge or local wisdom to be used as a source of disaster information.

Today's technological advances contribute to disaster management efforts by utilizing technology for early warning systems. Information delivery can be done through information media that has been widely owned by the public. The technology used to start with the latest technology such as applications on gadgets and old technologies such as topophone. However, this does not make the community leave local wisdom in monitoring and obtaining warnings of the eruption of Mount Merapi. The knowledge obtained through generations is done by observing natural phenomena that occur around Mount Merapi such as the mobility of wild animals around the slopes of Merapi. Both sources of information are equally trusted by the people on the slopes of Merapi.

Commitment to a common purpose

Collaboration has the purpose of gaining mutual advantage so that it should not favor either party alone. To achieve these goals, commitment is required from all parties involved. Commitment to a common purpose is seen from the vision and mission of Sleman Regent because of the attitude of leaders who can act as facilitators, distributors and drivers of various interests of participants who are crucified in collaboration. Based on the vision and mission of the regional head of Sleman Regency in the period 2016-2021, disaster risk reduction is included in one measure of Sleman cultured community through indicators of increased comfort and order as well as community mitigation capabilities to disasters.

Researchers do not find in the vision and mission of regional leaders that put disaster risk reduction inclusively, but disaster risk reduction is only used as an indicator to measure cultured communities. Sleman regency as one of the regencies whose area is directly related to the most active mountain in Indonesia should inclusively place disaster risk reduction. Nevertheless, the Regent and Deputy Regent of Sleman and their ranks have shown great attitude and attention to disaster risk reduction efforts in Sleman Regency. This is seen in several disaster risk reduction activities of the Mount Merapi eruption which was attended directly by the two officials of Sleman Regency.

In terms of the basic rules of collaboration support, researchers found that the executive and legislative institutions of the Sleman region have

provided clear rules of play in disaster management in Sleman. This is proven by the Sleman Regional Regulation according to ([UUTPB, 2007) on Disaster Management. The regulation provides legal shade for the implementation of disaster management and prioritizes cooperation or collaboration between the government, the community and the business world. Several regent regulations as well as other technical rules have also been issued by the government.

CONCLUSIONS

The local government of the Sleman regency has conducted a series of disaster risk reduction activities of Mount Merapi eruption. The activity has been going well. The activity involves government parties and actors outside the government with the dominant actors still in the government and volunteer community. These activities are influenced by the initial condition of each actor involved, the ability to move resources owned, information disclosure and knowledge sharing and the desire to maintain the commitment of mutual agreement to achieve the desired goals.

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