



Model of Rescue from the Earthquake and Eruption of Mount Merapi Kerinci in the Community of Kayu Aro District

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Abstract. Kerinci Regency is one of the areas prone to disasters in the form of the eruption of Mount Kerinci which is spread over 3 sub-districts, namely Gunung Tujuh District, Kayu Aro and West Kayu Aro, with a total of 59 villages. However, until now, in 2022, there is no assistance team, especially for vulnerable groups, including pregnant women, breastfeeding mothers, childbirth mothers, toddlers and the elderly in Gunung Tujuh District. Efforts will be made with protection in the form of training and mentoring of 13 village teams so that they are able to take anticipatory steps in the event of a catastrophic eruption of Mount Merapi Kerinci. Regarding these problems, community service activities were designed starting with the dissemination of important assistance to vulnerable groups, followed by training and mentoring activities with village teams and the preparation of performance indicators according to activity standards and ending with monitoring and evaluation and disaster response simulations in Gunung Tujuh District.

Keywords: Disaster · Training · Vulnerable groups

1 Introduction

Indonesia is a country that geographically, demographically, socio-economically and politically is a disaster-prone area, and also has the potential to experience natural, non-natural and social disasters, such as disasters: earthquakes, floods, volcanic eruptions, fires, landslides, disease outbreaks, technological failure, social conflict, terrorism [1]. Disaster events will result in emergencies, mass casualties and health problems in the community, besides that disaster events will also result in damage to public facilities, health facilities, disruption of communication channels and others that will disrupt people's lives and livelihoods [2].

The Central Government is currently at the stage of policy formulation (the process of drafting several Government Regulations is underway) and policy implementation (BNPB has been formed and is currently pushing the process of establishing BPBDs in the regions). While the Regional Government is in the stage of setting the agenda and making decisions. Some areas that have experienced major disasters have gone further in

the stages of policy formulation and policy implementation. Apart from the three parties mentioned above, namely the Central Government, Regional Government, and BNPB, Law no. 24 of 2007 also recognizes the participation of other parties, namely business institutions and international institutions [3].

In addition to having to develop an ideal disaster management policy through the right process, it is also necessary to clearly stipulate the following matters: 1) Division of responsibilities between Central and Regional Governments, 2) Appropriate allocation of resources between Central and Regional Governments, as well as between various related functions. 3) Changes in regulations and institutions that are clear and firm. 4) Mechanisms of work and arrangements between various disaster-related institutional portfolios. Article 28 of Law no. 24 of 2007 formulates the role of business institutions involved in disaster management, it is necessary to prepare the participation of the community and government institutions to strengthen community preparedness in disaster areas with self-reliance and community empowerment in the form of a safe community [4].

Disasters are very difficult to prevent, therefore our task is to reduce and even avoid casualties if a disaster occurs, for this is in accordance with the Sendai agreement (SFA 2015) that risk reduction efforts must be prioritized, by means of prevention, mitigation and preparedness. One form is by carrying out basic rescue training for people in disaster areas [5].

The application of rescue as a disaster management preparedness can be implemented in accordance with geographical conditions and the condition of its population, such as the geographical location of the area in Kerinci Regency in 2019, which was an area affected by a fairly strong earthquake due to the earthquake and eruption of Mount Merapi, causing not only environmental problems but also health problems. This is a concern for researchers to do community service to carry out basic earthquake rescue procedures for the people of Kayu Aro District [6].

Kayu Aro District has an area of 18,763 m², consisting of 17 villages with a total of 14,563 households. The facts show that during 2021 there have been 113 male live births (2 people died) and 106 live births women (1 person stillborn), but when compared to the total number of pregnant women who gave birth as many as 216 of the total pregnant women a total of 254 people. If we compare it with the productive age in the Kayu Aro District, there are 12,597 people. For toddlers, it turns out that there are 1,434 children under five, but those who have received health services have only reached 84.2% of the number of children under five, the rest have not been served properly [7].

If it is mapped that Kayu Aro District is within a radius of +3 km from Mount Kerinci, so steps and concrete efforts are needed to protect against eruptions from the threat of Mount Kerinci, earthquakes and handling special clouds, for the existing community considering there are several limitations in its protection, so it is necessary to provide a model basic rescue.

2 Activity Method

The method of implementing training and mentoring for the Kerinci Regency BPBD team in the Kayu Aro District area began with a structured brainstorming through several activities, namely first socializing the importance of mentoring the basic rescue

model for the eruption of Mount Kerinci, earthquakes and special clouds. The material presented included the definition of basic rescue model assistance, establishment of village-level Disaster Risk Reduction Forums consisting of various elements in the village, assessment of disaster threats, capacities and vulnerabilities of villages, preparation of village Disaster and Contingency Management Plans, standard indicators of success of model assistance activities basic rescue in dealing with volcanic eruptions, earthquakes and special clouds. Then carried out training and mentoring on basic rescue models for mountain eruptions, earthquakes and clouds specifically with material, namely identification of types of disaster threats, patient examination skills, bleeding control, upper and lower fracture immobilization, lifting and moving patients, CPR and BLS, Adult two-aid CPR. Body management, incident command system, triage, water emergencies and basic search and rescue, both knowledge and skills/attitudes. After that, post-training and mentoring monitoring and evaluation is carried out.

3 Results

3.1 Achieved Output Results (Output)

1. Implementation of socialization on the importance of mentoring the basic rescue model for the eruption of Mount Kerinci, earthquakes and special clouds which was attended by the people of Kayu Aro Subdistrict, especially vulnerable groups and supported by stakeholders both at the village level and at the district level.
2. Implementation of training, mentoring, and simulation of assisting the basic rescue model for the eruption of Mount Kerinci, earthquakes and clouds specifically in Kayu Aro District.
3. Implementation of training and assistance in the preparation of Performance Indicators according to Service Standards and coordination with the stakeholders involved in the preparation of Performance Indicators
4. Socialization participants understand the importance of providing basic rescue model assistance for the eruption of Mount Kerinci, earthquakes and clouds specifically in Kayu Aro District
5. Active support from the BPBD Kerinci Regency team
6. Document of Plan of Action (POA) Follow-up Plan for Outreach Formation of a Management Team for saving the basics of the eruption of Mount Kerinci, earthquakes and clouds specifically for Kerinci Regency in 2022.

3.2 Functions and Benefits of Activity Results

Functions and benefits derived from this activity, among others

1. Building public awareness, as well as increasing capacity to deal with disaster threats
2. Building a resilient community, so that people care about their area and the environment to minimize the occurrence of disasters. Fast and structured coordination when disasters occur, especially eruptions of Mount Kerinci, earthquakes and special clouds

3.3 Impact on the Economy and Social

Kayu Aro is famous as a tea-producing area, which is produced by tea plantations. Kayu Aro belongs to PTPN 6 which includes the largest tea garden in the world in one area. The tea produced by Kayu Aro is exported to various countries in the world and domestically. One sub-district which is also under the foot of Mount Kerinci is the Gunung Tujuh sub-district. If the impact of the occurrence of disasters, especially the eruption of Mount Kerinci, earthquakes and special clouds, can be avoided, it will certainly improve the economic and social functions of the Kayu Aro community (Fig. 1) [8].

4 Discussion

Knowledge about the importance of the rescue process when a disaster occurs, which is useful for reducing and overcoming disaster risks. These efforts are in the form of repairing and modifying the physical environment, building community awareness, and increasing the ability to deal with disaster threats, all of this can be done structurally and non-structurally, the example taken is building technical earthquake-resistant buildings, it can also be based on culture, namely the community reduces vulnerability to disasters by changing the paradigm of saving victims, knowledge and skills to maintain the safety of all citizens. Efforts to increase knowledge and skills aim to build a resilient community, so that people care about their territory and their environment to minimize the occurrence of disasters [9].

There were several materials taught to the people of Kayu Aro Subdistrict in dealing with disasters, including how to examine victims during a disaster, how to control bleeding, how to immobilize fractures, how to lift and move patients, CPR and Basic Life Support (BLS). Overall, all participants who amounted to 30 people were very enthusiastic in participating in the rescue model training. This can be seen in the assessment of rescue practices, the community was given three repetitions. The community was very enthusiastic to try, with the highest score being 80. And the lowest score being 70. In the third experiment, the assessment of the results of practice was focused on the community's desire to help, not on the best results, because in carrying out assistance during a disaster is one's readiness community responders to help others.

The material provided will be evaluated and simulated in coordinated disaster simulation activities with the Disaster Management Agency, health workers, firefighters and Basarnas so that it can be carried out properly when a disaster occurs.

5 Conclusion

The implementation of this rescue model provides additional community knowledge and provides skills in simulation exercises on knowing the principles of evacuating, stabilizing and transporting victims of a volcanic eruption disaster with makeshift equipment, and planning phase two assistance in 2023 in collaboration with BPBD, Health Workers, Fire Department and Basarnas.



Fig. 1. Documentation of Service Activities

References

1. R. Miceli, I. Sotgiu, and M. Settanni, "Disaster preparedness and perception of flood risk: A study in an alpine valley in Italy," *J. Environ. Psychol.*, vol. 28, no. 2, 2008.
2. H. A. Permanasari and Sunarto, "Kesiapsiagaan Masyarakat Menghadapi Bencana Gunung Merapi: Studi Kasus di Desa Umbulharjo, Sleman," *J. Kesehatan. Masy. Nas.*, vol. 6, no. 1, 2011.
3. A. Smidt, S. Balandin, J. Sigafoos, and V. Reed, "The Kirkpatrick Model: A Useful tool fo evaluating Training Oucomes.," *J. Intellect. Dev. Dsability*, vol. 3, no. 34, pp. 26–274, 2009.
4. M. Jimu, "Community Development. Community Development: A Cross- Examinationof Theory and Practice Using Experience in Rural Malawi," *Africa Dev.*, vol. 33, no. 2, pp. 23–35, 2008.
5. J. Harvatt, J. Petts, and J. Chilvers, "Understanding householder responses to natural hazards, flooding and sea-level rise comparisons," *J. Risk Res.*, vol. 14, no. 1, 2011.
6. Sukmaniar, *Efektivitas Pemberdayaan Masyarakat Dalam Pengelolaan Program Pengembangan Kecamatan (Ppk) Pasca Tsunami Dikecamatan Lhoknga Kabupaten Aceh Besar*. Semarang: UNDIP, 2007.
7. S. Ramadhon, "Penerapan Model Empat Level Kirkpatrick Dalam Evaluasi Program Pendidikan dan Pelatihan Aparatur di Pusdiklat Migas," *Forum Diklat*, vol. 6, no. 1, pp. 43–54, 2008.
8. E. Suharto, *Membangun Pemberdayaan Masyarakat Dalam Pengelolaan Program Pengembangan Kesejahteraan Sosial dan Pekerjaan Sosial*. Bandung: PT Refika Aditama., 2005.
9. J. Raikes and G. McBean, "Responsibility and liability in emergency management tonatural disasters: A Canadian example," *Int. J. Disaster Risk Reduct.*, vol. 16, 2016.

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