

The Role of Lumajang's Regional Disaster Management Agency Facing of Semeru Volcanic Eruptions

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Abstract:- Disaster is one of the threats that can disrupt national security. At the national level, which has a role in disaster risk reduction is the National Disaster Management Agency. Meanwhile, at the regional level, the responsibility is the Regional Disaster Management Agency. The role of regional disaster management agencies is to make contingency plans that can be used in the event of a disaster emergency. Lumajang is included in an area that has a risk of a Semeru Volcano eruption disaster so that the Lumajang Regional Disaster Management Agency must prepare a contingency plan. In the Contingency Plan of the Lumajang Regional Disaster Management Agency, it is written that how to plan in the event of a disaster. Starting from the assessment of disaster threats, data collection of people living in disaster risk areas, data collection of vulnerable infrastructure, to implementation simulations carried out with the community.

Keywords:- Role; Regional Disaster Management Agency; Lumajang; Semeru Volcanic Eruption; Contingency Planning.

I. INTRODUCTION

National security is a description of a country's ability to fulfill the protection and defense of its citizens (Osisanya, 2014). National security is not only the ability of the state to protect against military attacks but also from disasters (Makinda and Samuel, 1998). An event that causes serious disruption to the survival function of a community or society on any scale (UNDRR, 2007).

The nature of the impact caused by a disaster can be felt directly or locally, but the impact of a disaster is often widespread because it can last for a long period of time depending on the type of disaster (UNDRR, 2007). So that the

effects caused by the disaster can exceed the ability or capacity of the community or community in dealing with the disaster using existing resources, thus requiring assistance from outside agencies such as the National Disaster Management Agency (NDMA) or Regional Disaster Management Agency (RDMA) (UNDRR, 2007). NDMA and RDMA have a role in disaster management at the national and regional levels.

Within the scope of the Sendai Framework for Disaster Risk Reduction 2015-2030, there are several types of impacts and the possibility of a disaster occurring. the following terms are also considered (UNDRR, 2007):

Small-scale disaster: a type of disaster that only afflicts local communities who need assistance outside of the affected communities.

Large-scale disaster: a type of disaster that affects communities in need of national or international assistance.

Frequent and infrequent disasters: depending on the probability of occurrence and the period of return of a hazard and its impact. The impact of frequent disasters can be cumulative, or become chronic for a community or society.

Late onset disasters are defined as disasters that appear gradually over time. Late arrival disasters can be associated with, for example, droughts, desertification, sea level rise, epidemic diseases.

Sudden disasters are disasters that are triggered by a dangerous event that occurs quickly or unexpectedly. Sudden disasters can be associated with, for example, earthquakes, volcanic eruptions, flash floods, chemical explosions, critical infrastructure failures, transportation accidents.

Currently, Indonesia is recorded to have 129 active volcanoes spread from the eastern tip of Indonesia to West Indonesia except Borneo. Indonesia has 13% of the world's volcanoes. Indonesia is one of the areas located between three tectonic plates, namely the Eurasian Plate which moves to the south, the India-Australian Plate moves to the north, and the Pacific and the Plates move to the west (Zaenuddin, 2010).

Based on volcanic activity and eruptions, Indonesia has three types of volcanoes, namely: type A, type B, and type C

(Kusumadinata et al., 1979). Type A volcanoes, including volcanoes that show magmatic eruptions at least once since 1600, have increased volcanic activity, or even only phreatic eruptions. Included in this type are Semeru, Dukono, Merapi, Agung. Like Mount Semeru which often emits hot clouds. Other volcanoes of this type erupt periodically for a maximum of 1-5 years. Therefore, type A volcano is a top priority monitored by the Center for Volcanology and Geological Hazard Mitigation, which is the main government agency in volcanic eruption disasters (Zaenuddin, 2010).

Table 1. Distribution of Indonesian Active Volcano

Area	Active Volcanoes			Sum
	A Type	B Type	C Type	
Sumatera	12	12	6	30
Java	21	9	5	35
Bali	2	-	-	2
Lombok	1	-	-	1
Sumbawa	2	-	-	2
Flores	17	3	5	25
Laut Banda	8	1	-	9
Sulawesi	6	2	5	13
Kepulauan Sangihe	5	-	-	5
Halmahera	5	2	-	7
Sum	79	29	21	129

Definition of Active Volcanoes Indonesia:

- A - Type: Volcano since the year 1600 shows an increased activity, magmatic or even only phreatic eruption.
- B - Type: Volcano in solfataric and/or fumarolic activity, since the year 1600 there is neither evidence of increasing of its activity nor eruption.
- C -Type: Solfatara and/or fumarole field, some times the volcanic edifice is not clear.

Mount Semeru erupted on Saturday, December 4th, 2021 at 14:50 GMT +7. Visual eruption was not observed. This eruption was recorded on a seismograph with a maximum amplitude of 25 mm and a duration of 5160 seconds (Pura, 2021). And Center for Volcanology and Geological Hazard Mitigation give some recommendations in the form of :

- The public/visitors/tourists are not active within a radius of 1 Km from the crater/peak of Mount Semeru and a distance of 5 Km to the direction of the crater opening in the southeast-south sector, and be aware of hot clouds avalanche, lava avalanches, and lahars along rivers/valleys that originate from at the peak of Mount Semeru. The radius and distance of this recommendation will continue to anticipate if there is a change in hazard symptoms.
- So that the community or not to move in the hot cloud material area because the temperature is still high.
- It is necessary to watch out for potential slides along the valley of the Besuk Kobokan hot cloud path.
- Be aware of the threat of lahars in the river channel/valley that originates at Mount Semeru (considering the large amount of volcanic material that has been formed).This template, modified in MS Word 2007 and saved as a “Word 97-2003

II. METHODS

In this study, researchers used descriptive qualitative research methods with interviews from the Regional Disaster Management Agency which has a role in the preparedness of the Lumajang community. Qualitative research is research that collects and analyzes non-numeric data such as text, video and audio (Bhandari, 2020). With the existing data, the researcher must understand the concept, opinion, or experience. Research using this method can gather in-depth insights about research ideas from researchers (Bhandari, 2020). Researchers also use literature reviews from previous studies to strengthen this research. Systematic reviews have been developed primarily in medical science as a way to synthesize research findings in a systematic, transparent and reproducible manner and have been referred to as the gold standard among reviews (Davis et al., 2014)

III. RESULTS AND DISCUSSION

Role theory refines three things that are important to practitioners (counselors, psychologists and social workers). First: define the structure and context of behavior in a wide range of situations. This forces us to look specifically at the roles played, significant others, role expectations and consequences of failed behavior. Second: There are differences between behavior and people (doers) and the assumption that problematic behavior can be repeated. Third: it forces us to carefully judge ourselves about our expectations, values and assumptions. Role theory reminds us that all behavior can occur in a social setting and there is no such thing as right or wrong behavior. The relativity of this approach is specifically equated

with the search for understanding without making judgments (searching for right or wrong) (Nuqul, 2022).

Role theory is a theory which is a combination of various theories, orientations, and disciplines. Apart from psychologists, role theory originated from and is still used in sociology and anthropology. In the three fields of science, the term "role" is taken from the world of theater. In theater, an actor must reflect as a certain character and in his position as a character he is expected to behave in a certain way (Sarwono, 2013: 215).

Suhardono in Patoni (2007:40), reveals that the role can be explained in several ways, namely: first, historical explanation: the concept of role was originally borrowed from people who have a close relationship with drama and theater that thrived in Ancient Greece or Rome. In this case, the role means the character that is carried or performed by an actor in a stage with a certain play. Second, the notion of role according to social science, role in social science means a function that a person carries when occupying a position in a certain social structure. By occupying a certain position, a person can play his function because of the position he occupies.

Preparedness is an active protection activity carried out before a disaster occurs and during a disaster so that it can provide short-term solutions as well as long-term recovery. (Dodon, 2013). Preparedness is a series of activities carried out to deal with disasters through fast, precise and efficient steps (Indonesia Law 24, 2007). Preparedness is basically an activity carried out before a disaster occurs to respond quickly to conditions/situation during a disaster and immediately after a disaster. This effort is very much needed by the community to anticipate the possibility of a disaster in order to avoid the loss of life, loss of property and objects, and changes in the social order (SuDaysni, 2019: 585).

➤ *Regional Disaster Management Agency has the following duties:*

- To stipulate guidelines and directions for disaster management efforts which include disaster prevention, emergency management, rehabilitation, reconstruction in a fair and equal manner.
- Establish standardization and the need for disaster management implementation based on the provisions of the legislation;
- Develop, establish, and inform disaster-prone maps;
- Develop and establish permanent procedures for disaster management;
- Report the implementation of disaster management to the Regent once a month under normal conditions and at any time in a disaster emergency;
- Controlling the collection and distribution of money and goods;
- Accountable for the use of the budget received from the regional revenue and expenditure budget;
- The implementation of other general government duties given by the Regent in accordance with the procedures and provisions of the legislation.

- In carrying out the tasks as referred to above, REGIONAL DISASTER MANAGEMENT AGENCY has the following functions:
- Formulation and stipulation of disaster management policies and handling of refugees by acting quickly and appropriately, effectively and efficiently;
- Coordinating the implementation of disaster management activities in a planned, integrated and comprehensive manner;
- Data collection and processing in the context of planning in the field of disaster management;
- Implementation of increasing community preparedness in disaster management;
- Assessment, communication, consultation, development and guidance in disaster preparedness efforts;
- Implementation of search and rescue of disaster victims;
- Implementation of coordination with regional apparatus/other agencies in the context of post-disaster rehabilitation and reconstruction;
- Implementation of Budget Implementation Documents and Budget Implementation Changes Documents;
- Implementation of the Internal Control System;
- Implementation of Minimum Service Standards;
- Implementation of Community Satisfaction Survey;
- Evaluating and Reporting on the implementation of duties and functions; and
- Implementation of other functions given by the Regent in accordance with his duties.

In order for disaster management to be carried out on the basis of the local government's obligation to protect the community from disaster risk, it is necessary to establish and establish a permanent disaster management agency, namely the Regional Disaster Management Agency. RDMA has the task of creating disaster impact scenarios. The development of the impact scenario is the assumption of the impact on aspects of life due to the eruption of the Semeru Volcano according to the agreement on the determination of the incident scenario in the previous chapter. The impact scenario focuses on the affected aspects that must be immediately restored in the emergency response effort. The development of impact assumptions must take into account the vulnerability and local capacity of the community affected by the disaster, such as the community's understanding of risks, preparedness and availability of resources in disaster management.

Development of scenarios for the impact of the eruption of Semeru Volcano based on map data of vulnerable areas that are overlaid with data on disaster-affected aspects analyzed in the contingency plan. Based on the analysis by REGIONAL DISASTER MANAGEMENT AGENCY of Lumajang Regency together with Kodim 0821, Polres and related SKPD in Lumajang Regency, there are 49 Hamlets in 18 Villages spread over 5 affected Districts with a total assumed population of 56,498 people affected. In developing an impact scenario, there are at least 4 (four) aspects that must be considered, namely population aspects, facilities and infrastructure aspects, socio-economic aspects, environmental aspects and governance.

Tabel 2. Assumption of Impact from Population Aspect.

No	Village	Population	Man		Woman								Baby	Children	5-14 Y.O	15-19 Y.O	Oldster	Disabilities	
					Women of Childbearing Age		Women of Childbearing Age		Pregnant Women		Breastfeeding Women								
			Total	%	Total	%	Total	%	Total	%	Total	%							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
1	CANDIPURO	67.753																	
	Jugosari	3.375																	
	Sumberkajar	899	447	49,7	157	34,7	295	65,3	13	8,3	9	5,7	4	74	249	225	45	-	
	Karangwage	410	178	43,4	98	42,2	134	57,8	14	14,3	13	13,3	6	23	101	95	15	-	
	Sumb.langsep	372	153	41,1	75	34,2	144	65,8	16	21,3	33	44	15	29	68	125	20	-	
	Sumberwuluh	10.844																	
	Kajar Kuning	1.005	519	51,6	256	52,7	230	47,3	23	9	14	5,5	9	47	239	289	64	-	
	Poncokusumo	466	232	49,8	49	20,9	185	79,1	17	34,7	43	87,8	26	47	108	155	19	-	
	Bondeli Selatn	1.155	618	53,5	222	41,3	315	58,7	34	15,3	18	8,1	10	134	287	394	51	-	
	Bondeli Utara	1.177	605	51,4	189	33	383	67	16	8,5	24	12,7	14	55	287	394	51	-	
	Penanggal	7.167																	
	Wonosari	1.024	503	49,1	210	40,3	311	59,7	25	11,9	69	32,9	30	89	241	324	63	-	
	Sumbersari	1.206	489	40,5	192	26,8	525	73,2	13	6,8	45	23,4	15	81	229	295	72	-	
	Sumbermujur	6.899																	
	Kebonsekert	846	417	49,3	67	15,6	362	84,4	13	19,4	15	22,4	7	40	44	259	25	-	
	Wonorenggo	623	320	51,4	65	21,5	238	78,5	10	15,4	17	26,2	8	34	21	165	10	-	
	Sidorejo	1.072	528	49,3	107	19,7	437	80,3	24	22,4	23	21,5	12	35	43	322	45	-	
	Kloposawit	4.235																	
	Pancut	777	409	52,6	110	29,9	258	70,1	16	14,5	14	12,7	4	83	201	229	55	-	
	Selorejo	607	298	49,1	89	28,8	220	71,2	11	12,4	32	36	13	31	187	212	67	-	
	Kebon Jati	585	327	55,9	56	21,7	202	78,3	25	44,6	19	33,9	10	29	120	198	45	-	
	Sumberrejo	6.142																	
	Candi Lor	923	471	51	187	41,4	265	58,6	32	17,1	21	11,2	9	57	199	258	65	-	
	Pang. Nongko	881	431	48,9	235	52,2	215	47,8	15	6,4	33	14	14	43	205	294	49	-	
	Total	14.028	6.945	49,5	2.364	33,4	4.719	66,6	317	4,5	442	6,2	206	931	2.829	4.233	761	-	

Source : Lumajang Regional Disaster Management Agency (2015)

Vital facilities and infrastructure are all facilities that are closely related to their function as a supporting aspect of saving lives and fulfilling basic needs so that they must be a top

priority to restore their functions during the emergency response period.

Table 3. Assumption of Impact on Facilities and Infrastructure Aspects.

NO	Facilities	Districts	Damage Rate	Interruption Duration	Total
1	Bridges (6 units)	Candipuro	Light/Medium	5 Days	6 unit
		Pronojiwo	Hard	30 – 90 Days	17 unit
		Pasrujambe	Hard	15 – 30 Days	1 unit
		Pasirian	Hard	15 – 30 Days	1 unit
		Tempeh	Hard	15 – 30 Days	1 unit
2	Road ((15,3 Km)	Candipuro	Light/Medium	4 Days	15,3 Km
		Pronojiwo	Hard	5 -30 Days	32 Km
		Pasrujambe	Light	5 -7 Days	4 Km
		Pasirian	-	-	-
		Tempeh	-	-	-
3	Place Of Worship (109 units)	Candipuro	Light / Medium	Place Of Worship	48 unit
		Pronojiwo	Hard		42 unit
		Pasrujambe	Light / Medium		19 unit
		Pasirian	Light		-
		Tempeh	Light		-
4	Place of Study (42 units)	Candipuro	Light / Medium	Place of Study	5 unit
		Pronojiwo	Hard		29 unit
		Pasrujambe	Light / Medium		8 unit
		Pasirian	Light		-
		Tempeh	Light		-
5	House (8.241)	Candipuro	Light / Medium	Residence	1.728 unit
		Pronojiwo	Hard		5.867 unit
		Pasrujambe	Light / Medium		601 unit
		Pasirian	Light / Medium		
		Tempeh	Light / Medium		45 unit
6	Agricultural Land (4.661 Ha)	Candipuro	Medium / Hard	Economic Resources	1.369 Ha
		Pronojiwo	Hard		2.042 Ha
		Pasrujambe			450 Ha
		Pasirian			650 Ha
		Tempeh			150 Ha
7	DAM (4.675 M)	DAM Rejali	Hard	Retaining building	300 M
		DAM Mujur	Hard		1.925 M
		DAM Glidig	Hard		2.450 M

Source : Lumajang Regional Disaster Management Agency (2015)

In dealing with the possibility of an eruption of Mount Semeru, the Lumajang Regency Government implements the disaster management of the eruption of Mount Semeru in a planned, integrated and coordinated manner to save human lives and property by adopting the following policies and strategies:

➤ Policy

- All sectors carry out emergency response quickly and accurately.
- Maximize the use of local resources.
- Optimizing the distribution of emergency aid immediately.
- Maintaining the continuity of public services.
- Based on the policies that have been set above. a strategy is made to encourage the implementation of the policy. Each strategy statement below reflects one or more policies that have been established.

➤ Strategy

- The Regional Government prepares the determination of Emergency Alert/Emergency Response through a statement from the Regent.
- Determine the emergency response period for 14 days (can be extended as needed).
- Develop and establish an Emergency Response Command Structure.
- Establishing the Main Command Post for Disaster Management and aid posts from the sub-district and village levels.
- Ordering all public service agencies to provide services for 24 hours.
- Realizing the fixed procedures that were made prior to the occurrence of a disaster.
- Dividing the work implementation tasks of the related elements.
- Order all SKPD/Community to mobilize all resources by using the previously prepared facilities and infrastructure.

- To take an inventory of all losses/victims caused by the disaster.
- Establish a Temporary Evacuation Site (TES).
- Prepare refugee shelters (temporary housing) and refugee services.
- Carry out basic needs services for victims and refugees, including ambulances, medical personnel, medicines, public kitchens, food, clean water, toilets and sanitation.
- Prioritizing protection and services for vulnerable groups which include the elderly, children, hospital patients, people with disabilities and pregnant women.
- Setting up a Health Service Post to help provide health services for victims/refugees.
- Ensure that logistical support for disaster victims is well and evenly distributed.
- If the impact is large enough, it is necessary to submit the required assistance to the donor organization.
- Provide accountability reports for assigned tasks.
- Evaluate the entire implementation of activities that have been carried out as well as planned follow-ups.

IV. CONCLUSIONS

The role of the Lumajang Regional Disaster Management Agency is to develop contingency plans. Within the contingency plan, RDMA establishes a hazard assessment for each disaster. And the Semeru volcano is included in high danger and has a high probability. Not only disaster risk assessment. RDMA also makes the worst case scenario if the Semeru volcano erupts. After that, RDMA develops scenarios that have been made, such as looking at how many people live in disaster risk areas, facilities and infrastructure that are vulnerable. After that, RDMA establishes policies and strategies in an emergency.

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