

Community Preparedness Perception in Lembang District, West Bandung Regency Towards Earthquake Disaster Risk Due to the Lembang Fault

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ABSTRACT

West Java Province is an area where several faults pass, including the Lembang Fault. Its existence poses a serious threat to the people of Lembang District, which is geographically crossed by the Lembang Fault. Especially if it is connected to the condition of Lembang District as a center for social and economic activities. The current problem is that there is a tendency that the public does not pay attention to the dangers of the Lembang Fault. The public still does not understand the dangers of the Lembang Fault and the vulnerabilities they have, so this affects the community's preparedness in facing the threat of earthquake disasters caused by the Lembang Fault. The research uses qualitative methods. The research results show that the Lembang community, consisting of the government, the private sector and the community, shows different perceptions in the context of knowing, interpreting and reacting to the risk of earthquake disasters due to the Lembang Fault. Especially elements of society who still do not have sufficient knowledge about threats, vulnerabilities and capacities, so understanding and reactions tend not to lead to preparedness. There are five factors that influence people's perceptions of the risk of earthquake disasters due to the Lembang Fault, starting from experience, value systems, knowledge, motivation and goals, as well as perception situations. Experience is the most dominant factor influencing people's perceptions

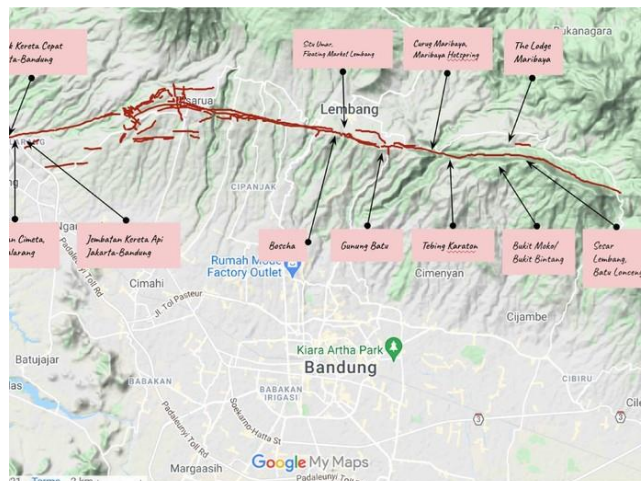
INTRODUCTION

Earthquakes are one of the potential disasters in question, where West Java itself has several active faults and two plates, namely the Cimandiri Fault, Lembang Fault, Cimandala Fault, Cugenang Fault, and Baribis Fault, as well as the Eurasian Plate and the Indoaustralian Plate.

The complex geological order is one of the reasons why West Java Province is prone to geological disasters in almost all of the mountainous regions of West Java in the south.

The Lembang Fault is currently a serious threat to the people of West Java, especially areas through which it passes directly, such as Lembang District, West Bandung Regency. The Lembang Fault is a potential earthquake source located in the center of West Java Province which has a length of 29 kilometers stretching from West to East, starting from Padalarang, West Bandung Regency, to Manglayang, Bandung Regency. The location of the Lembang Fault is not that far from Bandung City, which is the capital of West Java, which is only around 10 KM. If fault movement occurs, the impact could be felt in two cities and four districts, namely Bandung City, Cimahi, Bandung Regency, West Bandung, Subang and Sumedang.

LITERATURE REVIEW



Source: BMKG
Figure 1. Lembang Fault

The Lembang Fault can be said to be an active fault and has the potential to cause earthquake disasters with a displacement rate of around 1.95 millimeters to 3.45 millimeters per year. The Lembang fault can produce earthquakes measuring 6.5-7.0 on the Richter scale with a recurrence time of between 170-670 years. The people of Lembang District must be fully aware of the threats they face and start increasing their capacity so that they have the minimum ability to save themselves. Society must also have resilience both scientifically, physically, economically and socially in order to be able to live in harmony with threats.

Some people in Lembang District are aware of the dangers of earthquakes caused by the Lembang Fault, however, there is still a tendency that people do not pay attention.

METHODOLOGY

The method and design of this research is qualitative research with a phenomenological approach. Qualitative research is methods for exploring and understanding the meaning that a number of individuals or groups of people ascribe to social or humanitarian problems. Meanwhile, phenomenological research is a research design originating from the study of philosophy and psychology where researchers describe human life experiences regarding a particular phenomenon. The qualitative research method is a type of method for describing, the meaning that a number of individuals or groups of people ascribe to social or humanitarian issues (Creswell 2013:4-5). The choice of method is based on research tendencies with the aim of finding the meaning of the phenomena that occur among the people of Lembang District. This research process attempts to dig deeper into the meaning of public perceptions of the Lembang Fault by interpreting the data obtained. The phenomenological approach is very appropriate.

RESULT AND DISCUSSION

Lembang District is an administrative region located in West Bandung Regency, West Java Province. Geographically, Lembang District is located between 107° 1.10' East Longitude - 107° 4.40' East Longitude and 6° 3.73' South Latitude - 7° 1.031' South Latitude with an area of 10,620 Ha. Located in the eastern and northern tip of West Bandung Regency, geographically Lembang District has regional boundaries which include the north bordering Subang Regency, the east bordering Bandung Regency and Sumedang Regency, the south bordering Bandung City and Bandung Regency, and the west bordering borders Parongpong District, West Bandung Regency.

Judging from its geographical location, Lembang District is quite strategic with all its potential and natural features. This is supported by the location of Lembang District which is only 120 KM from the Center of the National Capital City, 18 KM from the Provincial City Center, and 14 KM from the Center of West Bandung Regency. Apart from that, Lembang District is also located at an altitude of 1,256 M/asl with an average temperature ranging between 19°C-30°C. This certainly has an effect on the level of rainfall in Lembang District. The average annual rainfall in Lembang District reaches 2,200 mm/year. This situation has had a significant influence on the development of Lembang District, both from a social and economic perspective.

Lembang District has 16 villages as part of its territory, including Lembang Village, Gudangkahuripan Village, Sukajaya Village, Cikahuripan Village, Jayagiri Village, Cibogo Village, Cikole Village, Cikidang Village, Wangunharja Village, Suntenjaya Village, Cibodas Village, Langensari Village, Kayuambon Village, Pagerwangi Village, Mekarwangi Village, Wangunsari Village.

Judging from the demographic aspect, Lembang District is said to have a fairly high population density with various complexities in community activities ranging from social, economic and cultural aspects. In 2017 the population in Lembang District reached 196,690 people consisting of 101,150 men and 95,540 women spread across 16 villages. The population of Lembang District is also the largest population in West Bandung Regency. In terms of disasters, Lembang District has various potential disaster threats.

Table 1. Potential Hazards of Lembang District

| No. | Types of | Hazardous | |
|-----|-----------------|-----------|-----------|
| | | Area (Ha) | Class |
| 1 | Flood | 1.547 | Low |
| 2 | Flood | 108 | Tall |
| 3 | Bandang | 8.065 | Tall |
| 4 | Earthquake | 8.065 | Currently |
| 5 | Drought | 6.649 | Tall |
| 6 | Extreme Weather | 5.216 | Tall |
| 7 | Landslide | 2.332 | Low |
| 8 | Eruption | 5.772 | Tall |

Source: West Bandung Regency BPBD, West Bandung Regency Disaster Risk Assessment Document 2017-2021

In this research, the potential threat of disasters in Lembang District is more focused on the threat of earthquakes, especially those related to the Lembang Fault. The potential threat of earthquake disasters in Lembang District is in the high class with an exposure area of 8,065 Ha. This means that the potential threat of an earthquake disaster can occur in almost all areas of Lembang District. One of the reasons for this is the Lembang Fault which extends 29 KM from west to east through several villages in Lembang District. The disaster risk component consists of disasters consisting of threats, vulnerabilities and capacities.

- Community Perception of Danger

Perception of danger is the condition of how people know about the Lembang Fault and how they view it as a danger that can threaten their lives. From this meaning, it can be seen what attitudes and behavior tendencies the community will have towards the Lembang Fault. In this research, the society in question is classified into 3 elements, namely government, society and the business world. Government elements have considered the Lembang Fault as a real and potential threat to West Bandung Regency, especially Lembang District. The large number of academic activities conducting research on the Lembang Fault has meant that governments from central to regional levels have paid attention to this threat.

West Bandung Regency BPBD programs and activities related to the threat of the Lembang Fault began to focus in 2018. Seeing the urgency of the threat of the Lembang Fault, the West Bandung Regency BPBD decided to focus all activities in the Lembang area, more precisely on areas that are bypassed by the Lembang Fault. Collaboration in disaster risk reduction is also carried out between government agencies, both at the central level and with horizontal agencies in West Bandung Regency.

West Bandung Regency BPBD also held coordination meetings with agencies within West Bandung Regency. This shows that other agencies that are not in the leading disaster sector are also paying attention to the Lembang Fault. This is a necessity because after all, disasters are a collective matter and involve various parties.

Meanwhile, the response from the people of Lembang in general is that many people still do not know about the threat of the Lembang Fault. As for those who already know, their responses are different, however, they tend to be less concerned, afraid so they don't want to talk about it, or some even take it for granted. Very few people really understand this threat. Even though the Government has taken persuasive steps through outreach and simulation, it has still not been able to reach the wider community.

Most people think as long as they don't live along the Lembang Fault route they will be fine. However, of course this is not the case because when the Lembang Fault releases its energy and causes an earthquake, the impact will spread not only in the area along the fault line.

In terms of knowledge regarding the threat of the Lembang Fault, the business world already has it because to gain profits from the economic activities they carry out, of course they need to pay attention to the strategic environment. In terms of cognition and meaning of the threat of the Lembang Fault, the business world generally understands and understands it, however, attitudes and behavior, especially those related to preparedness for the threat of the Lembang Fault, are mostly still not realized in detail.

- Community Perception of Vulnerability

Perceptions of vulnerability talk about how people know and understand whether they are vulnerable or not. So they will start making various efforts to eliminate the vulnerabilities that exist in them. Vulnerability itself has categories, some of which will be discussed in this research, namely social, physical and economic vulnerability.

In Lembang District there are several villages that are quite densely populated due to the effects of tourism economic activities. Lembang District has the largest population in West Bandung Regency. In 2017 the population in Lembang District reached 196,690 people. In detail, the West Bandung Regency BPBD has also conducted a study of social vulnerability with reference to the potential number of people exposed and potential losses from earthquake disasters. The results of this study have also been included in the 2017-2021 West Bandung Regency Disaster Risk Study document. Pada tataran masyarakat Kecamatan Lembang secara umum, pengetahuan dan pemahaman mereka

tentang kerentanan sosial yang dihadapkan pada ancaman Sesar Lembang ini cenderung belum memberikan makna secara spesifik.

The business world or corporate world is also aware and understands the condition of social vulnerability faced by the threat of the Lembang Fault. Thus, they have a different vision where population density is a potential for them. Moreover, Lembang's image as a tourist destination causes the population to increase drastically on weekends or national holidays. This condition then becomes potential in the Lembang economy, especially companies.

Related to people's perceptions of physical vulnerability. Before the Lembang Fault became a concern, infrastructure development was already occurring as a result of population dynamics. There are quite a few residential buildings, agencies and tourist buildings that stand close to the Lembang fault. Most people don't really understand the condition of buildings that are strong or earthquake resistant.

Meanwhile, it is related to economic vulnerability, which is related to the demands for community welfare, where development of the economic sector absolutely must be carried out by the Government and stakeholders. Moreover, as an autonomous region that was founded in 2007, West Bandung Regency continues to make various efforts to develop the community's economy.

Lembang society in general does not really understand this condition of economic vulnerability. This is because their understanding is still oriented towards meeting their daily needs so they do not think about their economic condition which is faced with the threat of the Lembang Fault. Apart from that, because there are still many people who do not know and understand the essence of the threat of the Lembang Fault, in terms of the meaning of vulnerability, whether social, physical and economic, there tends to be a lack of understanding for the public.

Another view from the private sector also explains that the existence of the Lembang Fault is clearly a threat to their survival in particular and the economic continuity of Lembang in general.

- **Community Perception of Capacity**

Perceptions of capacity in this research emphasize more on how the public generally knows and gives meaning to the capacity of the West Bandung Regency Regional Government and the Capacity of Community Organizations. These two components are very important in reducing disaster risk because in the concept itself there must be a balanced role between the Government and the community represented by a group or organization. In terms of institutional capacity, the West Bandung Regency Government is in the medium class. BPBD itself states that they have the capacity because they often carry out training both for BPBD and the general public who are willing to take part in training as volunteers.

On the other hand, at the sub-district and village government level, institutional capacity is still lacking. Especially in terms of village preparedness, it is still in a low class as stated in the 2017-2021 West Bandung Regency Disaster Risk Assessment Document. This indicates that the Government at the village level has limitations in disaster management.

In connection with the capacity of the community in Lembang District itself, over time, interest has emerged from community groups to get involved in disasters. So far there have been several movements from community organizations who are members of their respective groups or volunteers. Their movements are quite organized. Apart from that, they also often receive training from BPBD.

Factors that Influence Public Perception

- Experience

The people of Lembang in general have never experienced a truly destructive earthquake. Moreover, it was caused by the Lembang Fault itself. So far, the activity of the Lembang Fault has been recorded several times, but only on a small strength scale so that sometimes it is not felt.

- Value System

There are stories left by ancient people, namely the names of the earth's forms, such as "Oray Tapa", meaning a sleeping snake. This story is an ancient people's mention of the Lembang Fault so that people would not disturb the sleeping snake so that a disaster would not occur. The snake's head is in the Bantu Bells area so if the stone rings you have to be careful.

This attitude of surrendering oneself to God really gives people peace in interpreting the Lembang Fault. People who were initially afraid became calmer by surrendering all their problems to God. On the other hand, this attitude of surrendering oneself to God is not followed by attitudes and behavior that lead to readiness efforts to face the threat of the Lembang Fault. This is of course a mistake because Islam itself does not teach its followers to just surrender without any effort

- Knowledge

People with low levels of education have characteristics that make it difficult to change their mindset in order to understand more about the dangers of the Lembang Fault. People whose education level is below high school have the potential not to know and understand the disaster risk in their surroundings, which in this case is related to the Lembang Fault. Based on population data published by the West Bandung Regency Central Statistics Agency in the 2018 Lembang District in Figures document, it is shown that of the total population aged 10 years and over, only around 4.81% are college graduates.

- Motivation and Goals

The motivation and objectives of the government are more about carrying out their main responsibilities and duties which are oriented towards fulfilling a sense of security for the community. Meanwhile, for the business world, researchers see that their motivation and goals are related to giving meaning to disaster risk, more to do with their need to see the strategic environment which has implications for their goals in achieving profits.

- Perception Situation

The beginning of the dissemination of information regarding the threat of the Lembang Fault began with the activities of experts and academics who carried out various studies and research on the Lembang Fault itself. His research places more emphasis on the threat characteristics of the Lembang Fault itself,

which broadly answers the question of whether the Lembang Fault is active or not and estimates regarding the vulnerability of its earthquake recurrence period. Several research results regarding the Lembang Fault confirm that the Lembang Fault is an active fault and continues to move every year, although the movement is not very significant. Some of them even said that the Lembang Fault had entered its final stage of seismicity. In this case, the media plays a very important role in disseminating information about the Lembang Fault as a "loudspeaker" so that it can be accessed by the Lembang community in general. In the end, the issue of the Lembang Fault became hot news, although currently the intensity of information dissemination tends to decrease.

So far, the Government, both Village and Regency, has provided more information at the level of organizations and community leaders as well as RW and RT officials in the hope that they will disseminate this information on a massive scale to the general public.

Efforts Made to Intervene in Community Perceptions in Supporting Preparedness. The 2018-2022 West Bandung Regency Disaster Management Plan (RPB) is a general planning product that contains policies and strategies as well as action options to achieve the targets for implementing disaster management in West Bandung Regency. The 2018-2022 West Bandung Regency RPB document is a reference in disaster management and can also be a guide in preparing the West Bandung Regency BPBD annual work plan.

The commemoration of Disaster Preparedness Day by BNPB with activities including installing Lembang Fault signs, discussing the Lembang Fault Contingency Plan, socializing and simulating independent evacuation to the community, and even a meeting of 1000 volunteers from West Java Province.

FURTHER STUDY

Further research will conduct research that focuses on the preparedness of the Lembang District community based on indicators according to Law Number 24 of 2007 concerning Disaster Management. First, is The effectiveness of community preparedness in facing earthquakes by preparing early warning system technology. Second, is the effectiveness of community preparedness in facing earthquakes by preparing and training human resources and infrastructure to create disaster-resilient humans equipped with sophisticated disaster equipment. Next, we will conduct in-depth research on community-based disaster risk reduction.

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