

Gender-based Disaster Preparedness innovation Study

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ABSTRACT. Cikole Village is located in Lembang Sub District, West Bandung Regency, West Java Province, Indonesia. This village is prone to natural disasters for located on an active Lembang fault. Therefore, disaster preparedness information is required to be applied thoroughly and fast. It is observed that every Village has community of housewives that actively empower families. Therefore, there is an advantage in applying gender-based approach into the spreading of disaster preparedness information. This study aims to describe the innovation of gender-based disaster preparedness in Cikole Village. This study uses qualitative method by applying a comparative study on the disaster preparedness management performed by men and women. The data was taken by collecting and observing the opinion put forward by community groups in focus group discussions (FGD). The discussions are divided into three main topics, namely Disaster Preparedness Management in Cikole Village, Gender and Technology Based Disaster Preparedness, and Innovation of Cikole Village Disaster Preparedness Management. Data from the discussion is then analyzed by comparing the knowledge held by men and women in the society to the existing references. The results showed that the role of women in Cikole Village was very dominant in disaster affairs, especially from the aspects of knowledge and skills of utilizing information on applications published by the government. This condition shows an opportunity to empower village women to carry out disaster preparedness. Therefore, the implication of the findings is forming a women's community organization as a driving force in handling disaster preparedness.

1 INTRODUCTION

Indonesia is a country with high potential for natural disasters, one of which is an earthquake. Cikole Village, which is located in Lembang District, West Bandung Regency, West Java Province, Indonesia (see Figure 1) has a high potential for earthquakes since this area is traversed by a Lembang fault. In Indonesia, disaster management is carried out by the National Disaster Management Agency as its central command. Meanwhile, at the regional level, West Bandung Regency has the National Disaster Management Agency (BNPD). This institution coordinates directly with the Village Head. Disaster preparedness management is often overlooked by the village government because it collides with other routine government tasks. As a result, disaster problems will usually be handled after a disaster occurs, when the fact is the Lembang Fault disaster will occur in the blink of an eye, at any time without warning. As a result, there is a very high chance of disaster risk, especially since Cikole Village is a village that has a tourist attraction and has a relatively high growth in regional development. For this reason, disaster preparedness must become a routine activity that continuously provides preparation, learning and warning to its residents.

In 2016, a building arrangement was carried out in Cikole Village, which is relatively dense for the size of a village. Research on disasters in Cikole Village has been carried out in 2019-2020. The results showed that the role of women in Cikole Village is very dominant in dealing with disaster affairs, especially with regard to their knowledge and skills in utilizing information contained in applications published by the government. This condition shows that there is an opportunity to empower village women in facing disaster preparedness. There have been many studies on gender and disaster carried out, but the focus is more on the resilience of women affected by disasters, such as research conducted by M.R. Hasan in Bangladesh in 2019, and many more. Meanwhile, the role of women in handling disaster preparedness has not been studied.

Disaster preparedness research that has been carried out so far is still general without considering the gender aspect. When in fact, there are potential aspects of these gender characteristics, such as what happened in Cikole

Village. To fill the gap, this research on disaster preparedness in Cikole Village, Lembang District will focus on the gender issues. Thus, this study aims to describe gender-based disaster preparedness innovations.



Figure 1. Position of Lembang District

2. METHODS

2.2 Data Collection Procedure

Data were collected by conducting a survey, in February 2020, for one day. One month before carrying out the survey, a survey request letter was sent to the Cikole Village officer to determine the day of community gathering as well as to borrow the Cikole Village Hall. After the timing and the target of respondents had been agreed upon by the research team and village officials, the survey was then carried out within one day, starting from 7.00 - 16.00. Female respondents were drawn from the Women's community who were active in the Family Welfare Education (PKK) organization group, while male respondents were drawn from the Karang Taruna community and the Head of Rukun Warga. The total number of respondents collected in the Village Hall Room were 20 women and 20 men.

The survey facilitator team consisted of 10 people. The respondents were divided into 4 groups; 2 groups for women and 2 groups for men. Before being divided into groups, all respondents were given material on disaster preparedness, from 7.00 - 12.00, delivered by the head of the research team and representatives of the research team. After getting a break at 12.00-13.00, discussions were separately held in each group of women and men from 13.00 - 16.00.

The discussion material was guided by 2 facilitators/surveyors. The discussion material provided was about exploration of disaster preparedness. From the discussion result, the data obtained were about the level of knowledge and the types of actions they took on the phenomenon of the Lembang fault, as well as their literacy of technology used. The discussion and all their activities are recorded with a recording device (camera) and taken note directly.

2.3 Data Analysis

The data analysis was carried out by collecting the results of the focus group discussion (FGD) and observing the results of each group's discussion regarding disaster preparedness and the use of information tools for disaster preparedness. Then, the results of the discussion are described, interpreted and compared, by highlighting the variables of their knowledge with existing references, especially regarding disaster preparedness. The results were then compared between the women's and men's groups. Based on the results of these comparisons, an

innovation construction that must be carried out in Cikole Village was designed, namely the construction of innovation in the organizational structure for disaster preparedness.

3. RESULT AND DISCUSSION

3.1 Disaster Preparedness Management in Cikole Village

Disaster management in Indonesia is handled by a special agency, namely the National Disaster Management Agency (BNPB). BNPB has duties at the national level to the regional level such as at the city / district level. In carrying out disaster management, BMKG (Meteorology, Climatology and Geophysics Agency) will publish information about earthquakes within 5 minutes after the earthquake occurs. Early warning messages will be delivered by BMKG in two ways; Short version via WRS (Warning Receive System) in DVB (Digital Video Broadcast), and SMS (Short Message Service) formats. Radio systems are also used for disaster emergency response preparation. The Indonesian Ministry of Communication and Information has allocated HF / SSB radio frequencies to BNPB (National Disaster Management Agency), and 11,473.5 MHz and VHF frequencies with a frequency of 171,300 MHz repeaters to BPBD (Regional Disaster Management Agency) (Yulianto, 2020). Disaster management at the local level will be anticipated by the BNPB city/district according to the administrative area. Cikole Village is under the administrative area of West Bandung Regency, so Cikole Village disaster management is under the authority of the West Bandung Regency BNPB (Regional Disaster Management Agency).

Villages in Indonesia are led by a Village Head. The Village Head has autonomy of power in village management, especially in administrative matters. The Village Head manages village government affairs assisted by the village secretary and several staff who manage village management affairs, such as: the head of development affairs, the head of government affairs, the head of welfare affairs and the head of financial affairs. The task of the government is to cooperate with the Village Consultative Body (BPD). BPD is the representative of the villagers who are elected to become its members. The election is conducted by holding deliberations. Village organizations like this are enforced in all areas of the Republic of Indonesia, because they have been regulated in Laws and village government regulations. The Head of Cikole Village is in charge of coordinating with the Regent of West Bandung Regency. Likewise, when carrying out disaster management, the village head must coordinate with the West Bandung Regency BNPB.

Disaster management in Cikole Village is the responsibility of the village head. However, if you pay attention to the organizational structure, as in most organizational structure of village government in other regions in Indonesia, Cikole Village does not have a special sub-division for disaster management affairs; even though, this village is a village that has the potential to experience the Lembang fault. The Lembang Fault has a very strong risk of earthquake shocks, resulting in the collapse of permanent buildings. Cikole Village has the possibility to be affected by earthquake shocks because it is an active technical area of the Lembang Fault (Agustina, et al, 2020). Anticipating disaster management of the Lembang Fault is a must, because anticipatory actions such as early warning information will reduce risks due to disasters (B. Tang et al, 2019). Early warning systems institutionalized in the development and humanitarian sectors are increasingly needed to anticipate reducing disaster risks (K. Cui et al, 2018). Preventive action taken before a disaster occurs generates preparedness for future traumatic events and increases resilience (Norris FH, 2008;Levy J, 2010; Buckingham-Howes et al, 2017; Grattan LM,2017)

An organization must be able to play a role in planning, developing and mapping out an adequate and appropriate action. Meanwhile, during the pre-disaster phase, preventive actions must be prepared. When a disaster occurs until after the disaster, it must be able to intervene quickly and effectively to deal with the impact of the disaster, as well as to respond and carry out recovery (Hadi Purnomo, 2007). The village government and the district level BNPB need an organization that plays a fast and effective role in anticipating the Lembang Fault disaster. If Cikole Village only relies on village organizations and BNPB at the West Bandung Regency level, the implementation of disaster management will not be optimal because of the large and wide area of duties, functions and coverage.

3.2 Gender and Technology Based Disaster Preparedness

The Cikole Village community is a potential asset that can be empowered for disaster preparedness. In general, society has the ability to live through plans that are drawn up to deal with all levels of life risks faced.

However, an abnormal event, such as a disaster, can result in changes in the community's capacity to cope with it. These incidents require a response from a number of agencies and assistance from resources that have special abilities (H. Purnomo, 2007). Resilience at the highest community level involves action throughout the community and the public and private domains (Naderpajouhet al., 2020). The results of the survey show that the people of Cikole Village understand the potential for natural disasters in their homes. 71% men and 100% women know about disaster risk management programs. In addition, 64% men and 76% women know the phase of the West Java provincial government program planning. These data indicate that the Cikole Village community is capable of playing an important role in disaster management.

The people of Cikole Village are accustomed to using smartphones for disaster information initiated by BNPB. Social media posts can help governments and other agencies to prepare and take necessary steps to manage emergencies to minimize losses due to disasters (Saroj, A, & Sukomal Pal, 2020). BMKG's disaster application, *Inarisk*, is the smartphone applications that are commonly accessed by the Cikole Village community. 64% of men and 65% of women know this cell phone/smartphone application for disaster information. While, 50% men and 59% women know that the government has issued applications that can be used as disaster monitoring. An interesting phenomenon found in gender roles in disaster management in Cikole Village is the dominance of women in every knowledge of disaster management.

3.3 Innovation of Cikole Village Disaster Preparedness Management

It is a fact that earthquakes of high magnitude often result in unavoidable casualties. This is due to factors such as aftershocks, serious traffic disruption occurring in the affected area, which can delay or prevent rescue teams from reaching the injured immediately (B. Tang et al.). The government, according to Helsloot and Ruitenber (2004 in Hadi Purnomo, 2007), may not be able to respond to all aspects of disaster response and recovery efforts alone. Therefore, it is necessary to involve various other resources, one of which is by having disaster preparedness in Cikole Village. In addition, an innovation is needed to assist the role of the government in handling disaster preparedness. The phenomenon of Cikole Village, which shows that women are more dominant in disaster preparedness, provides an opportunity for these women to handle disaster preparedness actions.

Gender differences can be accommodated in local practices that allow women to access resources (A. Rush-ton et al., 2020). Women in Cikole Village have an active role in accessing family / household units in the village. For this reason, in efforts to practice disaster preparedness at the local-village level, women play a major role in providing access of information to the family unit. The realization of women's empowerment in disaster preparedness practices is done by arranging a women's group in Cikole Village as a driving force in handling disaster preparedness. The organizational framework is as shown in Figure 3 below.

This organizational framework is an innovation in disaster preparedness management that has never been formed before. In addition, the previous organizational framework relied more on village organizational structures that focused on village administration issues. When in fact, handling the Lembang Fault disaster preparedness requires the construction of an organization that is more focused on providing technical information on sustainable preparedness to household / family units.

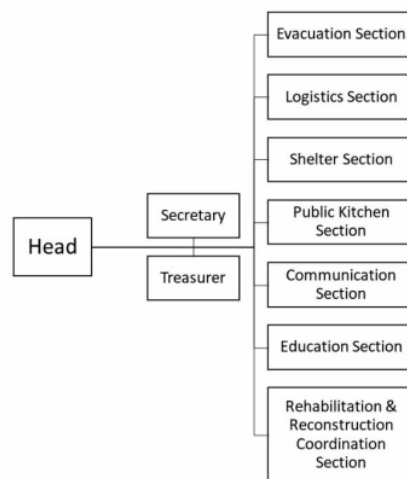


Figure 3. Organizational Framework

This non-governmental organization must be supported by the Cikole Village government in its legal form and the National Regional Disaster Management Agency (BNPD). Building a disaster resilient community takes consistent time and effort. Disasters are considered as unexpected, whether natural or man-made disasters, that cause large loss or damage to physical property and resources, livelihoods and infrastructure (Sadeka, et al,2020). Village governments must build structured governance to centralize communities in the decision-making process (K. Iuchi, J. Mutter ,2020), especially in disaster preparedness. It is hoped that the women's community organization in Cikole Village will be able to build consistent efforts towards a disaster resilient community.

4. CONCLUSIONS

Handling natural disasters in areas with high disaster potential needs to be done and prepared seriously and carefully. All existing resources and potentials need to be optimized to assist disaster management. Based on the results of the research, the innovation that needs to be constructed for handling disaster preparedness in Cikole Village is the formation of a disaster preparedness community, which consists of women's groups. This women's group was formed because of their dominant responsiveness to disasters that are likely to occur in Cikole Village. In addition, women's groups are also more responsive in using smartphones as a digital media for disaster information. In the future, other innovations also need to be developed in order to continue to increase the level of disaster preparedness and management, especially in areas with high disaster potential like Cikole Village.

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