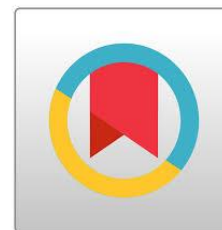


The Role of the Regional Disaster Management Agency in Flood Disaster Mitigation Efforts in Banyulegi Village, Dawarblandong District, Mojokerto Regency

Peran Badan Penanggulangan Bencana Daerah dalam Upaya Mitigasi Bencana Banjir di Desa Banyulegi Kecamatan Dawarblandong Kabupaten Mojokerto



Fa'ulul Denisy¹, Diana Hertati^{2*}


¹² Public Administration Study Program, Faculty of Social and Political Sciences, UPN “Veteran” East Java

¹² Jl. Rungkut Madya No.1, Gn. Anyar, Surabaya, East Java, 60294, Indonesia

Corresponding Author: fadenisy@gmail.com¹; diana_hertati.adneg@upnjatim.ac.id^{2*}

ARTICLE INFORMATION

<p>Keywords <i>Role; Regional Agency For Disaster Management; Flood Disaster Mitigation;</i></p>	<p>ABSTRACT Banyulegi Village is an area that has the potential for flood disaster as it is a downstream area of the Kali Lamong River Basin. Consequently, this flood disaster instigates problems, both material and non-material damage and loss. Thus, it needs the role of the Regional Disaster Management Agency or BPBD of Mojokerto Regency in disaster mitigation efforts to reduce the risk and impact of flood disasters. This study applied a qualitative method with descriptive approach by using primary and secondary data obtained from observation, interviews, and documentation. The focus of this study is the role of the BPBD in disaster mitigation efforts based on the provisions of Mojokerto Regency Regent Regulation Number 102 of 2021 concerning Position, Organizational Structure, Main Duties and Functions and Work Procedures of the Regional Disaster Management Agency of Mojokerto Regency in the Prevention and Preparedness Sector Article (15) paragraph (1). The results of this study explain that the BPBD of Mojokerto Regency has carried out its role in mitigation efforts according to its duties and functions, including: 1) The role of BPBD in mitigation efforts through facilitation and outreach; 2) The role of BPBD in implementing cooperation with related agencies or institutions; 3) The role of BPBD in mitigation efforts through education and training; 4) The role of BPBD in mitigation efforts through simulation. There are several efforts to reduce flood disasters, through structural and non-structural mitigation. The inhibiting factor in this study was the activity of the village community, but this obstacle could be minimized through a joint decision between the BPBD of Mojokerto Regency and the village community. The supporting factor was the involvement of all elements of the Banyulegi Village community to participate in the activities as well as the related agencies or institutions that play a role in reducing disaster risk in Banyulegi Village.</p>
<p>Kata Kunci <i>Peran; Badan Penanggulangan Bencana Daerah; Mitigasi Bencana Banjir;</i></p>	<p>ABSTRAK Desa Banyulegi merupakan daerah yang memiliki potensi terhadap bencana banjir karena merupakan daerah hilir dari Daerah Aliran Sungai (DAS) Kali Lamong. Akibat bencana banjir ini menimbulkan permasalahan yakni kerusakan dan kerugian materil maupun non materil. Sehingga perlu diatasi dengan adanya peran BPBD Kabupaten Mojokerto dalam upaya mitigasi bencana untuk mengurangi resiko dan dampak bencana banjir. Penelitian ini menggunakan jenis metode kualitatif dengan pendekatan deskriptif dengan menggunakan data primer dan sekunder yang diperoleh dari observasi, wawancara, dan dokumentasi. Fokus Kajian penelitian ini adalah peran BPBD dalam upaya mitigasi bencana berdasarkan ketentuan Peraturan Bupati Kabupaten Mojokerto Nomor 102 Tahun 2021 Tentang Kedudukan, Susunan Organisasi, Tugas Pokok dan Fungsi serta Tata Kerja Badan Penanggulangan Bencana Daerah Kabupaten Mojokerto pada Bidang Pencegahan dan Kesiapsiagaan Pasal (15) ayat (1). Hasil dari penelitian ini menjelaskan bahwa BPBD Kabupaten Mojokerto telah menjalankan perannya dalam upaya mitigasi sebagaimana tugas dan fungsinya yaitu: 1). Peran BPBD dalam upaya mitigasi melalui fasilitasi dan sosialisasi 2). Peran BPBD dalam</p>

	<p>pelaksanaan kerjasama dengan instansi atau lembaga terkait, 3). Peran BPBD dalam upaya mitigasi melalui pendidikan dan pelatihan, 4). Peran BPBD dalam upaya mitigasi melalui simulasi. Terdapat beberapa upaya dalam mengurangi bencana banjir yaitu melalui mitigasi struktural dan non struktural. Faktor penghambat dalam penelitian ini yaitu pada aktivitas masyarakat desa, akan tetapi kendala tersebut dapat diminimalisir melalui keputusan bersama antara pihak BPBD Kabupaten Mojokerto dan masyarakat desa. Faktor pendukungnya adalah keterlibatan seluruh elemen masyarakat Desa Banyulegi dalam mengikuti kegiatan dan instansi atau lembaga terkait yang berperan dalam pengurangan resiko bencana di Desa Banyulegi.</p>
<p>Article History Send 9th June 2023 Review 27th May 2023 Accepted 23th October 2023</p>	<p>Copyright ©2024 Jurnal Aristo (Social, Politic, Humaniora) This is an open access article under the CC-BY-NC-SA license. Akses artikel terbuka dengan model CC-BY-NC-SA sebagai lisensinya.</p> 

Introduction

According to Law of the Republic of Indonesia Number 24 of 2007 concerning Disaster Management, it is explained that disasters are events that threaten and disrupt the lives and livelihoods of the community, caused both by natural factors and non-natural factors as well as human factors that can cause environmental damage, human casualties, property losses, and psychological impacts. Based on the type, disasters are classified into three, including natural disasters caused by events or a series of events caused by nature, such as earthquakes, tsunamis, erupting mountains, floods, droughts, typhoons, and landslides. Non-natural disasters are disasters caused by non-natural events or series of events that include technological failure, failure of modernization, epidemics, and disease outbreaks. Social disasters are disasters caused by events or series of events caused by humans which include social conflicts between groups or between communities, and terror. Disasters are something that often occurs in Indonesia, as one of the countries with a high level of natural disaster vulnerability and varies from the aspect of the type of disaster (Damaiyanti et al, 2017).

Disaster management according to Law of the Republic of Indonesia Number 24 of 2007 concerning Disaster Management is an effort to provide protection to the community from potential disasters, harmonize existing regulations, legislation, ensure the implementation of disaster management in an integrated, coordinated, and comprehensive manner, build public and private participation and partnerships, encourage the spirit of mutual cooperation, solidarity, generosity, create peace in the life of the nation and state. Thus, disaster management is a series of efforts from the government aimed to provide protection to the community against potential disaster threats, carried out through the establishment of disaster risk development policies, disaster prevention activities, emergency response activities, and rehabilitation.

Disaster mitigation is a term to describe all preventive actions and efforts that can be taken before a disaster occurs, such as preparedness and long-term disaster risk reduction strategies that can be done to reduce the impact of disasters. Disaster mitigation according to Law of the Republic of Indonesia Number 24 of 2007 concerning Disaster Management is a series of efforts to reduce disaster risk, both through physical development and awareness as well as through the improvement of community awareness and capacity to face disaster threats. Disaster mitigation activities include planning and implementing activities to reduce risks posed by natural and man-made hazards as well as disaster response planning processes. The mitigation process includes disaster prevention and damage reduction to the adverse effects of disasters (Tamitiadini, et al, 2019).

Based on Regulation of the Head of the National Disaster Management Agency Number 02 of 2012 concerning General Guidelines for Disaster Risk Assessment, disaster-prone areas are the areas that have geological, biological, social, cultural, political, economic, and technological conditions or characteristics for a certain period of time that reduce the ability to prevent, mitigate, achieve readiness, and reduce the ability to respond to the adverse impacts of certain hazards. Geographically, East Java Province has eighteen regencies/cities that are considered to be potentially prone to disasters such as floods, tornadoes, landslides, earthquakes, erupting mountains, tsunamis, and so on. Almost all regions in East Java are disaster-prone areas.

Based on Data and Information from the Indonesian National Disaster Management Agency (DIBI) for 2020-2022, there were 767 disaster events from several types of disasters. It is stated that the whole disaster events occurred in East Java Province is dominated by hydrometeorological disasters. Hydrometeorological disasters are natural disasters caused by weather activities such as the hydrological cycle, rainfall, wind, humidity, and temperature. The hydrometeorological disasters referred are including floods, landslides, abrasion, tornadoes, forest fires, and droughts. East Java Province has three major potential hydrometeorological disasters, including floods, tornadoes, and abrasion with 314 flood disasters, 159 tornado disasters, and 111 abrasion disasters. Among the three major disaster events, the highest is flooding. As a result of the flood disaster, the impacts are in the form of material and non-material losses. The following is the data on disaster victims and losses of buildings and infrastructure due to floods for the 2020-2022 period in East Java Province:

Table 1. Data on Flood Victims in 2020-2022 East Java Province

Year	Flood Victim Data				
	Die	Disappear	Injured	Suffer	Flee
2020	6 people	1 people	14 people	296,553 people	1,338 people
2021	2 people	2 people	0 people	282,542 people	3,552 people
2022	2 people	0 people	5 people	23,890 people	1,280 people

Source: Indonesian Disaster Information Data, 2023

Table 2. Data on Building and Infrastructure Losses Due to Flood Disasters in 2020-2022 East Java Province

Year	Building and Infrastructure Loss Data				
	House	Education	Health	Worship	Public Facilities
2020	381	11	0	37	0
2021	131	0	0	0	0
2022	9	3	0	0	0

Source: Indonesian Disaster Information Data, 2023

The area of Mojokerto Regency is an area in East Java Province that is potentially prone to flood disasters. Almost all sub-districts in Mojokerto Regency are flood-prone areas with floods occurring every year, and are flood-prone areas with low, medium and high flood land vulnerability classes, including the sub-district of Bangsal, Dawarblandong, Dlanggu, Gedeg, Gondang, Jatirejo, Jetis, Kemlagi, Kutorejo, Mojoanyar, Mojosari, Ngoro, Pacet, Pungging, Puri, Sooko, Trawas, and Trowulan. The flood land vulnerability class is categorized in three colors with the low flood vulnerability class categorized in green, the medium flood vulnerability class categorized in yellow, and the high flood vulnerability class categorized in red (PRB Data of Mojokerto Regency, 2021). Mojokerto Regency is one of the regencies/cities in East Java Province that has a high risk score for flooding. Based on the 2021 Indonesian Disaster Risk Index Book, Mojokerto Regency with a score of 15.71 is classified as a high risk class.

There are 12 sub-districts in Mojokerto Regency that are included in the flood red zone, including Dawarblandong, Kemlagi, Jetis, Gedeg, Sooko, Trowulan, Puri, Mojoanyar, Bangsal, Mojosari, Pungging, and Ngoro Districts. The high potential for flooding in the 12 sub-districts is caused by the existence of several rivers such as the Brantas, Sadar, Marmoyo, and Kali Lamong Rivers. Of the 12 sub-districts, there are several areas affected by floods with high flood vulnerability class based on the disaster-prone map data (Mojokerto Regency Disaster-Prone Map, 2021). Based on these data, one of the villages with high flood potential and a high flood land vulnerability class area in Dawarblandong District is the Banyulegi Village. Banyulegi Village is located two kilometers to the east of Dawarblandong District, at coordinates S 7° 18' 59.404" E and 112° 26' 49.935". Overall, this village is located at an average altitude of 240 meters above sea level with an area of 329,552 Ha. Banyulegi Village consists of 4 Hamlets, 10 Community Pillars and 21 Neighborhood Pillars.

Banyulegi Village is traversed by the Kali Lamong River and has a high potential for flooding. Kali Lamong River is one of the rivers that passes through Mojokerto Regency and is a barrier between Mojokerto Regency and Gresik Regency. The Kali Lamong Watershed has an area of 720 km which originates in Lamongan Regency and Mojokerto Regency and ends in Gresik Regency and Surabaya Madya City. Every rainy season in the Kali Lamong watershed, flooding often occurs downstream due to discharge that exceeds the river's capacity. When the rainy season arrives, the Kali Lamong River is unable to accommodate all water discharge, causing flooding in the Kali Lamong Watershed. This is due to changes in land use in the form of sugarcane plantations, silting of rivers due to the accumulation of sediment and the behavior of throwing garbage in rivers, increased rainfall and the existence of dams downstream of the river located in Gresik Regency (Pane, Y.P.S Sholicin, M & Asmaranto, R., 2021).

This study examines the role of the Regional Disaster Management Agency or BPBD based on the provisions of Mojokerto Regent Regulation Number 102 of 2021 concerning the Position, Organizational Structure, Duties and Functions and Work Procedures of the Regional Disaster Management Agency of Mojokerto Regency in the Field of Prevention and Preparedness Article 15 paragraph 1, which has the task of assisting the Chief Executive in coordinating and implementing policies in the field of prevention, mitigation, preparedness, community empowerment and disaster risk reduction at the pre-disaster stage and in carrying out tasks as referred in paragraph (1) of the Prevention and Preparedness Sector. The researchers intend to examine the problems regarding flood disaster mitigation in Banyulegi Village based on the role of the Regional Disaster Management Agency of Mojokerto Regency in the Main Tasks and Functions, including:

1. The implementation of facilitation and socialization in disaster prevention and preparedness; Based on the results of the researchers' observations during initial observations in the field, problems related to the tasks and functions of BPBD in the community are the low level of community participation in the socialization activities due to the daily activities of the community. Thus, the implementation of socialization cannot be maximized. Hence, the role of BPBD in the implementation of facilitation and socialization in disaster management prevention and preparedness is needed as an effort to deliver disaster-related information to the community in increasing awareness and preparedness to face disasters. The importance of these efforts is intended to anticipate floods which will cause losses due to disasters.

2. The implementation of cooperation with relevant agencies or institutions in the field of prevention, mitigation, preparedness, community empowerment and disaster risk reduction at the pre-disaster stage;

Based on the results of the researchers' observations during initial observations in the field, the problem related to the construction of dikes carried out by the local government is flooding that occurred after the construction of dikes by the district government in early 2020 due to the overflow of the Lamong River in early 2022, causing water to pass through the embankment, inundating settlements and agricultural land of the residents. The impact of the flood disaster resulted in the submergence of approximately 60 houses, forcing some residents to evacuate at the homes of their relatives. The height of the flood approximately reached 165 centimeters (cm). The community complained that the flooding was getting worse after the embankment was built, thus the community hoped that there would be efforts from the government to overcome this problem. The dike that was supposed to be made to overcome the problem of flooding turned out to have a greater impact on flooding. Indeed, this is not in accordance with the expectations of the community that the construction of dikes can overcome the flood problem.

In this case, the role of BPBD is to collaborate with related agencies or institutions in the fields of prevention, mitigation, preparedness, community empowerment and disaster risk reduction at the pre-disaster stage. These efforts are needed to establish coordination with relevant agencies or institutions in structural mitigation and non-structural mitigation efforts. Therefore, disaster mitigation can be carried out in an integrated, coordinated manner in overcoming these problems.

3. The implementation of education, training, simulation and rehearsal for disaster management preparedness

Based on the observations of researchers during initial observations in the field, the problem related to the duties and functions of BPBD in the community is that the people in Banyulegi Village actually already understand the potential for flooding in the community, floods are disasters that are considered commonplace in Banyulegi Village because of the frequent floods occurred every year. Surely, this causes losses in the form of disruption of community activities, damage to infrastructure buildings such as dikes that cause submergence of residential areas. Thus, BPBD needs to conduct the implementation of education, training and simulation as an effort made by the Regional Disaster Management Agency to build awareness and preparedness related to how to deal with disasters in order to minimize the impact of greater flood disasters.

Based on the background of the problems above, it is in accordance with the Main Duties and Functions of the Regional Disaster Management Agency of Mojokerto Regency or BPBD in the Field of Prevention and Preparedness Article (15) which has the task of assisting the Chief Executive in coordinating and implementing policies in the field of prevention, mitigation, preparedness, community empowerment and disaster risk reduction at the pre-disaster stage and in carrying out the duties as referred to in paragraph (1) Prevention and Preparedness. Hence, BPBD Mojokerto Regency plays a role in the efforts to mitigate flood disasters in Banyulegi Village, including structural mitigation efforts in physical development and non-structural mitigation through increasing community capacity in dealing with flood disasters which are expected to reduce the impact and risk of flood disasters. Based on the background of the research on "The Role of the Regional Disaster Management Agency in Flood Disaster Mitigation Efforts in Banyulegi Village, Dawarblandong District, Mojokerto Regency" above, several problems can be formulated as follows:

1. What role does the Regional Disaster Management Agency of Mojokerto Regency play in mitigating flood disasters in Banyulegi Village?
2. Why do flood mitigation efforts in Banyulegi Village need to be implemented?
3. How are the efforts of the Regional Disaster Management Agency of Mojokerto Regency to overcome the inhibiting factors in the mitigation efforts of flood disasters in Banyulegi Village?

The urgency of this research is to describe the role played by the Regional Disaster Management Agency of Mojokerto Regency in the efforts to mitigate flood disasters in Banyulegi Village, Dawarblandong District, Mojokerto Regency using mitigation theory which divides mitigation into two forms, the structural mitigation and non-structural mitigation. Structural mitigation is accomplished through infrastructure as an effort to minimize the impact caused by floods in the form of dike construction efforts. Meanwhile, non-structural mitigation is in an effort to increase the capacity of rural communities through the implementation of facilitation and socialization activities, education and training, and disaster simulation. Therefore, in this research, efforts both structural and non-structural mitigation need to be carried out to reduce the risk of flood disasters.

Method

According to Ramdhan, M. (2021), research methods are defined as scientific ways to obtain data with specific purposes and uses. The research method used is descriptive research with a qualitative approach. Descriptive type of research with a qualitative approach is the type of research that is useful in describing problems as a whole and in depth, as well as describing the problems contained in the research by conducting research that is oriented towards natural phenomena or symptoms. Through qualitative-descriptive research methods, this study aims to collect, analyze and interpret data on the role of the Regional Disaster Management Agency of Mojokerto Regency in the efforts to mitigate flood disasters in Banyulegi Village. The research location is in Banyulegi Village, Dawarblandong District, Mojokerto Regency. However, to complete the data, researchers need to extract data and information from the Regional Disaster Management Agency of Mojokerto Regency, as the agency plays a role in flood disaster mitigation efforts.

According to Sugiyono (2019), the focus of qualitative research is holy, meaning that it is comprehensive and inseparable, therefore qualitative research is based on the overall social situation under study, including aspects of the actor's place and activities that interact synergistically. Determining the focus in qualitative research is based more on the level of novelty of the information to be obtained from social or (field) situations. Research focus refers to the subject matter that serves as the focal point or purpose of the study. The focus of this research is the role of BPBD in disaster mitigation efforts based on the provisions of the Mojokerto Regency Regent Regulation Number 102 of 2021 concerning the Position, Organizational Structure, Main Duties and Functions and Work Procedures of the Regional Disaster Management Agency of Mojokerto Regency in the Field of Prevention and Preparedness Article (15) paragraph (1), which has the task of assisting the Chief Executive in coordinating and implementing policies in the field of prevention, mitigation, preparedness, community empowerment and disaster risk reduction at the pre-disaster stage and in carrying out tasks as referred to in paragraph (1) of the Field of Prevention and Preparedness. The focus of this research can be stated as follows:

1. The role of BPBD in mitigation efforts through facilitation and socialization;
2. The role of BPBD in the implementation of cooperation with related agencies or institutions;
3. The role of BPBD in mitigation efforts through education and training;
4. The role of BPBD in mitigation efforts through simulation.

Table 3. Research focus

Research Focus	Conceptual Definition	Operational definition
The role of BPBD in mitigation efforts through facilitation and socialization	The role of BPBD in mitigation efforts through facilitation and socialization is the provision of basic information and direction to the people of disaster-prone areas regarding how important mitigation efforts are, as well as what must be done in terms of disaster management to minimize the impact of disasters.	<ul style="list-style-type: none"> a. The target or audience of the socialization activities b. Place and time period of the socialization activities c. Media used in the socialization activities d. Material presented on the implementation of socialization activities e. Community conditions before and after the implementation of socialization activities f. Obstacles faced during the implementation of socialization activities.
The role of BPBD in the implementation of cooperation with related agencies or institutions	The role of BPBD in the implementation of cooperation with related agencies or institutions is an effort between agencies, institutions, units to the community, related to the implementation of certain tasks and functions or activities in order to help, fill, and complement each other, thus common goals can be resolved properly. The collaboration carried out by the Regional Disaster Management Agency with related agencies or institutions is an effort to unify the concept, thus the activities carried out by the Regional Disaster Management Agency of Mojokerto Regency, including flood disaster mitigation, can be carried out in an integrated and coordinated manner.	<ul style="list-style-type: none"> a. Related parties involved in cooperation in disaster mitigation efforts b. Efforts made for the disaster mitigation in overcoming disaster problems that exist in the community. c. What kind of efforts made to build trust in related agencies or institutions during collaboration regarding disaster mitigation program. d. The obstacles faced in the implementation of cooperation.
The role of BPBD in mitigation efforts through education and training	Education and training is an effort made to know and understand something learned. The education and training on disaster mitigation is a process performed to build public awareness in facing disasters. The importance of education and training on disaster	<ul style="list-style-type: none"> a. The target or audience of the education and training activities b. Place and time period of the educational and training activities c. Media used in the educational and training activities d. Material presented on the implementation of education and training activities

	mitigation is that it will provide knowledge and skills to the community in carrying out prevention and preparedness for actions that need to be taken before or during a disaster and finding alternative ways in disaster mitigation efforts. Thus, it can give rise to the ability of the community to think and act effectively when a disaster occurs.	e. Community conditions before and after the implementation of education and training activities f. Obstacles encountered during the implementation of education and training activities
The role of BPBD in mitigation efforts through simulation	Simulation is a way of presenting learning experiences by using artificial situations to understand certain concepts, principles and skills. The simulation on disaster mitigation is an imitation process related to preparedness steps in facing disasters, and aims to provide knowledge and experience to the community to increase awareness of disaster hazards.	a. The target or audience of the simulation activities b. Place and time period of the simulation activities c. Material presented in the implementation of simulation activities d. The facilities and infrastructure as well as the resources prepared in the implementation of simulation activities e. Parties involved in disaster the simulation activities f. The condition of society before and after the implementation of simulation activities g. Obstacles faced during the implementation of simulation activities

Based on the focus of the existing research, the data sources in this study include the primary and secondary data sources. Data collection techniques used by the researchers in this study were observation, interviews, and documentation. The data analysis technique used in this study was a data analysis technique developed by Miles and Huberman. According to Ardiana, Dewa Puthu Yudhi, et al. (2021), qualitative data analysis techniques are divided into several parts, consisting of data collection, data reduction, data presentation (data display), and conclusion drawing or verification (conclusion).

Result and Discussion

The researchers describe the role of the Regional Disaster Management Agency of Mojokerto Regency in the efforts to mitigate flood disasters in Banyulegi Village, Dawarblandong District, Mojokerto Regency, based on the Mojokerto Regent Regulation

Number 102 of 2021 concerning the Position, Organizational Structure, Duties and Functions and Work Procedures of the Regional Disaster Management Agency of Mojokerto Regency in the Field of Prevention and Preparedness which has the task of assisting the Chief Executive in coordinating and implementing policies in the field of prevention, mitigation, preparedness, community empowerment, and disaster risk reduction at the pre-disaster stage. The Regional Disaster Management Agency of Mojokerto Regency as a government institution that has regional authority is responsible for carrying out its duties to protect the community from disaster threats. The role of local governments include all actions and policies performed in carrying out their duties, authorities, and obligations in maintaining public order and peace in their regions in accordance with their duties, including their functions as protectors and public servants (Nilasari, M., 2021). In this stage, BPBD Mojokerto Regency plays a role in preparing a plan and implementing an effort to reduce the impact and risk due to flood disasters. Banyulegi Village in Dawarblandong District is an area in Mojokerto Regency that has a high potential for flooding, thus the BPBD of Mojokerto Regency is inseparable from the rights and obligations to handle it, which in this case are the duties and functions that have been determined by the Mojokerto Regency government as stated in the Mojokerto Regency Regent Regulation Number 102 of 2021 concerning the Position, Organizational Structure, Main Duties and Functions and Work Procedures of the District Disaster Management Agency Mojokerto in the Field of Prevention and Preparedness Article (15) paragraph (1). Hence, the role carried out by the BPBD of Mojokerto Regency in the efforts to mitigate flood disasters is based on the main tasks and functions in the Field of Prevention and Preparedness Article (15) paragraph (1), as follows:

1. The role of the Regional Disaster Management Agency in mitigation efforts through facilitation and socialization

Facilitation and socialization activities are non-structural disaster mitigation acts aimed to increase public awareness and preparedness in facing disasters. Based on the observation results of the researchers found in the field, the Regional Disaster Management Agency of Mojokerto Regency has played a role in the efforts to mitigate flood disasters in Banyulegi Village through facilitation and socialization activities. This role is in accordance with the focus and target of the study based on the Main Tasks and Functions of the BPBD of Mojokerto Regency in the Field of Prevention and Preparedness Article 15 paragraph 1 which has the following functions; the implementation of disaster prevention, as well as the facilitation and socialization in disaster management preparedness. The role carried out by BPBD in disaster mitigation efforts related to this function is the role of the Regional

Disaster Management Agency in mitigation efforts through facilitation and socialization. The facilitation and socialization activities referred are providing basic information and direction to the people of disaster-prone areas regarding the importance of mitigation efforts, as well as what must be done in terms of disaster management to minimize the impact of disasters.



Figure 1. Documentation on the facilitation and socialization activities in Banyulegi Village

Source: Banyulegi Village Government, 2023

According to the Regulation of the Head of BNPB Number 4 of 2008 concerning "Guidelines for Preparing Disaster Management Plans", the community is the initial actor of disaster management as well as victims of disasters, and they must be able to handle disasters within certain limits. People in disaster-prone areas are the first to provide first aid when a disaster occurs. Thus, the targets of facilitation and socialization activities are all elements of the community, including village officials, villagers (community leaders, religious leaders, and affected residents), and village community organizations. Hence, it is hoped that the delivery of information or socialization materials has reached the target of activities, to all elements of society. The place where facilitation and socialization activities are carried out is at the Banyulegi village hall, the time period is carried out once at the establishment of a Disaster Resilient Village or Banyulegi Village Disaster Risk Reduction Forum.

The socialization method is conducted by the facilitator through the provision of materials directly to the community through lectures. The media used is electronic media such as laptops and Liquid Crystal Display (LCD). The delivery of materials in the implementation of facilitation and socialization activities in the form of: (1) Basic introduction material for disaster management related to all efforts or activities conducted in the context of prevention, mitigation, preparedness, emergency response, as well as recovery efforts

related to disasters conducted at the stages before, during and after disasters; (2) Disaster Risk Assessment material is related to how the community recognizes disaster risk in their respective regions (3) Early warning material is about how the community can recognize the signs of a disaster; (4) Disaster-prone map material. The facilitators and communicators in delivering socialization materials are from the BPBD of Mojokerto Regency in collaboration with the PRB or (Disaster Risk Reduction) forum of Mojokerto Regency, where the PRB forum of Mojokerto Regency consists of associations of volunteers and academics. The delivery of materials through socialization has reached the target of activities, which is the people of Banyulegi Village.

Furthermore, the Regional Disaster Management Agency of Mojokerto Regency introduced the SIMONA (the Disaster Information System) application to the community to report disaster events. Stakeholders and the public can monitor disaster information through the link <http://bpbd.mojokerto.kab.go.id/simona>. As a manifestation for disaster-resilient communities, BPBD Mojokerto Regency launched an android-based SIMONA application. SIMONA is a development of the SIKK (Mojokerto Regency Disaster Information System) web application. The SIMONA application is used to collect, manage, and disseminate disaster information in Mojokerto Regency. Through this application, it is expected that people can easily report disaster events around them. In addition, the community can also monitor the condition of their village if there is a potential disaster that arises from the message of the Pusdalops (Operation Control Center) for Disaster Management by BPBD Mojokerto Regency.

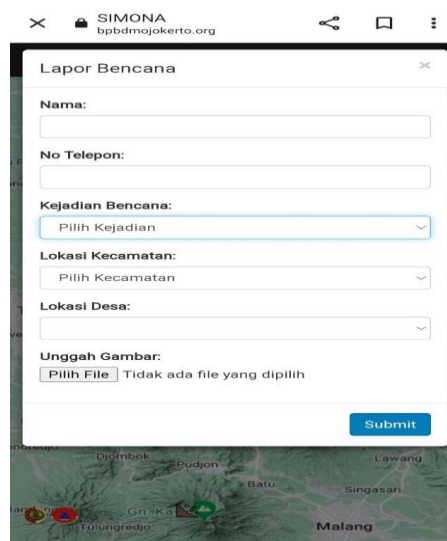


Figure 2. Documentation on the Disaster Report Filling Features

Source: Author's Documentation, 2023

Regarding the implementation of facilitation and socialization activities in Banyulegi Village, BPBD Mojokerto Regency hopes that the activities have a positive impact toward the community related to disaster mitigation efforts, increasing community knowledge and preparedness in facing disasters. This is in line with the theory of disaster mitigation goals according to (Arif, L, 2020), that is increasing public knowledge in dealing with and reducing the impact / risk of disasters, so that people can live and work safely.

During the implementation of facilitation and socialization activities, the community welcomed and supported the activities conducted by the BPBD of Mojokerto Regency because of the involvement of all elements of the community during these activities. However, in its implementation, obstacles arise from the community activities. The community cannot participate if the activities are conducted in the morning to evening due to constraints in their daily activities. Thus, the BPBD of Mojokerto Regency seeks to minimize the obstacles by adjusting the time owned by the community, by which the facilitation and socialization activities are carried out at night.

2. The role of the Regional Disaster Management Agency in the implementation of cooperation with related agencies or institutions

The implementation of cooperation between the BPBD of Mojokerto Regency and related agencies or institutions includes non-structural mitigation efforts and structural mitigation. Non-structural mitigation efforts are including the establishment of *Tangguh Bencana* Village or the Disaster Risk Reduction Forum. According to the Regulation of the Head of BNPB Number 1 of 2012 concerning Guidelines for Disaster Resilient Villages, it is one manifestation of the government's responsibility to provide protection to the community from the threat of disaster. Disaster Resilient Village is a community-based disaster risk reduction to protect communities from disaster threats.

The establishment of the Disaster Resilient Village was carried out through collaboration with the participants of the Disaster Resilient Village which included all elements of the community including Banyulegi Village officials, villagers (community leaders, religious leaders, and affected residents), village community organizations, sub-district elements, police elements, TNI elements, health elements, business elements, academic elements and volunteers who are members of the PRB (Disaster Risk Reduction) forum of Mojokerto Regency, namely Nahdlatul Ulama Institute for Disaster Management and Climate Change (LPBI-NU). Based on the Regulation of the Head of BNPB Number 1 of 2012 concerning Guidelines for Disaster Resilient Villages, the purpose of establishing a Disaster Resilient

Village is to increase cooperation between stakeholders in DRR, local governments, business institutions, universities, non-governmental organizations (NGOs), community organizations, and other concerned groups. In line with this, through the establishment of a Disaster Resilient Village in Banyulegi Village, the role of implementing cooperation between BPBD Mojokerto Regency and stakeholders both from government agencies and related institutions in non-structural mitigation efforts in Banyulegi Village can be achieved as an effort to provide protection to the community from disaster threats.



Figure 3. Documentation on the Establishment of Banyulegi Village's Disaster Resilient Village
Source: Banyulegi Village Government, 2023

Furthermore, according to Pribadi in (Kamasuta, 2020) structural mitigation is an effort to reduce disaster risk through engineering physical development that is resistant to disasters. The form of cooperation between BPBD Mojokerto Regency through structural mitigation is physical development in the form of dike construction. There are findings from the observations conducted by the researchers that the BPBD of Mojokerto Regency stated that there were no physical development efforts carried out by BPBD. However, physical development efforts are carried out through the collaboration of BPBD Mojokerto Regency with the community and the village government as well as the local governments through assessments in the form of collecting data from the community regarding the causes and impacts of flood disasters.

The physical development conducted was in the form of elevating an emergency embankment in Banyulegi Village which was previously built in 2020, but there was a flood disaster in early 2022 caused by high rainfall, resulting in the Lamong River overflowing and inundating residential areas.



Figure 4. The Banyulegi Village embankment collapsed due to flooding from the Lamong River in 2022

Source: <https://radarmojokerto.jawapos.com/mojokerto/01/04/2022/peningkatan-tanggul-diusulkan-rp-500-juta/>, 2023

Therefore, BPBD Mojokerto Regency conducted an assessment to Banyulegi Village to find out the causes and impacts of the flooding problem. After knowing the cause of the flood, it was found that the problem was due to the lack of height of the embankment built before, thus water from the overflow of the Lamong River inundated the residential areas. BPBD through the Rapid Reaction Team conducts funding related to the causes and impacts of flood disasters in Banyulegi Village. Then, they report it to local government leaders to be followed up by collaborating with related agencies in terms of physical development. Hence, as a respond to the proposal for the construction of embankment resulted from the assessment to the local government, Banyulegi Village received heavy equipment assistance from the Public Works and Spatial Planning (PUPR) office.



Figure 5. The process of elevating the embankment in Banyulegi Village

Source: Personal Documentation, 2023



Figure 6. The embankment of Banyulegi Village that has been completely elevated

Source: Personal Documentation, 2023

Based on the observations of the researchers, there are findings related to the construction budget of the embankment, which the budget comes from the village government itself. Meanwhile, from the government represented by the PUPR office, they help with heavy equipment. The construction of the embankment is carried out by self-help from the village community, starting from planning, implementation, and maintenance.

During the implementation of the collaboration between BPBD Mojokerto Regency and related agencies or institutions, things that support the implementation of the collaboration are government agencies, volunteers, village governments, and Non-Governmental Organizations (NGOs) of Banyulegi Village who swiftly participate in handling disaster problems in the efforts to mitigate flood disasters in Banyulegi Village. In addition, the community also supports and accepts the efforts made by the BPBD with related agencies or institutions. The community is aware about the importance of disaster mitigation efforts that must be done to minimize the impact of the disaster.

3. The role of the Regional Disaster Management Agency in mitigation efforts through education and training

The implementation of education and training activities is a type of non-structural mitigation to improve the ability and preparedness of the community in facing disaster threats. Based on the observations of the researchers found in the field, the Regional Disaster Management Agency of Mojokerto Regency has played a role in the efforts to mitigate non-structural flood disasters in Banyulegi Village through education and training activities. This role is in accordance with the focus and target of the study based on the Main Tasks and Functions of BPBD Mojokerto Regency in the Field of Prevention and Preparedness Article 15

paragraph 1 which has the following functions; The implementation of education, training, simulation and rehearsal of disaster management preparedness. The role carried out by the BPBD in disaster mitigation efforts related to this function is the role of the Regional Disaster Management Agency in mitigation efforts through education and training. The education and training activities referred are including providing insight and knowledge to the people of disaster-prone areas related to disaster management efforts, thus when a disaster occurs in the region, it can be handled properly and minimize the impact both from casualties and property.

According to the Regulation of the Head of BNPB Number 4 of 2008 concerning "Guidelines for Preparing Disaster Management Plans", the community is the initial actor of disaster management as well as victims of disasters, and they must be able to handle disasters within certain limits. People in disaster-prone areas are the first to provide first aid when a disaster occurs. Thus, the targets of education and training activities are all elements of society including village officials, villagers (community leaders, religious leaders, and affected residents), and village community organizations. Hence, it is hoped that the delivery of information or educational and training materials has reached the target of the activities, to all elements of society. The place where education and training activities are carried out is at the Banyulegi village hall, while the time period is carried out once at the establishment of the Disaster Resilient Village or the Banyulegi Village Disaster Risk Reduction Forum.



Figure 7. The implementation of education and training activities
Source: Banyulegi Village Government, 2023

The delivery of educational and training materials to the people of Banyulegi Village was conducted by using Office Stationery media and electronic media such as laptops and Liquid Crystal Display (LCD) screens as well as panel paper to draw disaster-prone maps.

Furthermore, the education and training materials provided to the community were in the form of assistance and preparation of documents related to disaster management including; (1) Preparation of disaster risk assessment; (2) Preparation of evacuation plans; (3) Preparation of the Village/ Village disaster management plan; (4) Preparation of disaster mitigation plans; (5) Preparation of the Village/ Village contingency plans; and related materials; (6) Training on Emergency Management (PPGD), making maps and evacuation routes along with evacuation shelters, training for village governments, volunteer teams, and villagers in disaster risk reduction efforts. The materials were given by the BPBD of Mojokerto Regency, thus the community understands how the community works in disaster management at the pre-disaster, emergency response and post-disaster stages.

Then, there are also things that the BPBD and the village governments feel as unfortunate regarding important documents where the preparation of documents related to disaster management has been carried out in education and training activities. The documents produced during the implementation of disaster mitigation activities such as the Village Disaster Risk Assessment Document (KRB), Village Contingency Plans, Village Disaster Management Plans (RPB), Village Evacuation Plans are still unclear. The existence of those documents are important as a guideline for the community in implementing the disaster management efforts at the pre-disaster, emergency response and post-disaster stages.

The implementation of joint education and training involving communities in disaster prone areas aims to reduce vulnerability and strengthen the community's own capacity to deal with disaster risks. Community involvement in implementing the disaster risk reduction acts at the local level or at the community environment is a must. With joint education and training that is attended by all disaster management components, it is hoped that the community can independently reduce the risk of disasters in their environment or area. Through education and training activities as a disaster mitigation effort that is in line with the disaster mitigation theory according to (Minhar & Aco, 2021), disaster mitigation is a preventive effort that can be done to reduce the impact of disasters, including preparedness plan strategies and long-term risk reduction measures. Through education and training, BPBD Mojokerto Regency hopes to increase awareness and preparedness of the people of Banyulegi Village in facing disasters.

During the implementation of facilitation and socialization activities, the community welcomed and supported the activities conducted by the BPBD of Mojokerto Regency because of the involvement of all elements of the community during these activities. However, in its implementation, obstacles arise from the community activities. The

community cannot participate if the activities are conducted in the morning to evening due to constraints in their daily activities. Thus, the BPBD of Mojokerto Regency seeks to minimize the obstacles by adjusting the time owned by the community, by which the facilitation and socialization activities are carried out at night.

4. The role of the Regional Disaster Management Agency in mitigation efforts through simulation

Based on the observations of the researchers found in the field, the Regional Disaster Management Agency of Mojokerto Regency has played a role in the efforts to mitigate non-structural flood disasters in Banyulegi Village through simulation activities in accordance with the focus and target of the study based on the Main Tasks and Functions of BPBD Mojokerto Regency in the Field of Prevention and Preparedness Article 15 paragraph 1 which has function, including; the implementation of disaster prevention, as well as the facilitation and socialization in disaster management preparedness. The role carried out by BPBD in disaster mitigation efforts related to this function is the role of the Regional Disaster Management Agency in mitigation efforts through simulation. Simulation is a way of presenting learning experiences through artificial situations to understand certain concepts, principles, and skills. The disaster mitigation simulation aims to provide knowledge and experience to the community to increase awareness of disaster hazards. Thus, when a disaster occurs, the community already has the knowledge and experience on how preparedness measures must be faced.

According to the Regulation of the Head of BNPB Number 4 of 2008 concerning "Guidelines for Preparing Disaster Management Plans", the community is the initial actor of disaster management as well as victims of disasters, and they must be able to handle disasters within certain limits. People in disaster-prone areas are the first to provide first aid when a disaster occurs. Thus, the targets of education and training activities are all elements of society including village officials, villagers (community leaders, religious leaders, and affected residents), and village community organizations. Hence, it is hoped that the delivery of information or educational and training materials has reached the target of the activities, to all elements of society. The place where education and training activities are carried out is at the Banyulegi village hall, while the time period is carried out once at the establishment of the Disaster Resilient Village or the Banyulegi Village Disaster Risk Reduction Forum.



Figure 8. The implementation of simulation activities
Source: Banyulegi Village Government, 2023

The disaster simulation material provided to the community was in the form of handling emergency response when a disaster occurs, such as rescuing and evacuating residents, property affected by a disaster, fulfilling residents' basic needs, evacuation and Emergency Patient Management materials related to health services to disaster victims. Availability of facilities and infrastructure or physical facilities that support during the implementation of simulation activities included rubber boats, stretchers, buoys, and oars. Meanwhile, the supporting infrastructure was in the Banyulegi Village hall. The existence of facilities and infrastructure is needed to expedite the process of simulation activities.

Based on the observations of the researchers, there are parties involved in the simulation activities apart from the people of Banyulegi Village, those are from the Regional Disaster Management Agency of Mojokerto Regency, sub-district elements, police elements, TNI elements, health elements, business elements, and academic elements. There are also volunteers who are members of the Mojokerto Regency Disaster Risk Reduction (DRR) forum. The implementation of disaster simulation activities in Banyulegi Village is expected to provide knowledge and experience to the community to increase awareness of disaster hazards. The supporting factor is the involvement of all elements of the village community and related parties who support the activity. Whereas, the inhibiting factor is related to community activities where the community cannot participate if the activities are carried out in the morning to evening due to constraints in their daily activities. Thus, BPBD Mojokerto Regency seeks to minimize these obstacles by adjusting the time owned by the community, by which the facilitation and socialization activities are carried out at night.

Practical Implications/ Research Policy Recommendations

The role of the Regional Disaster Management Agency is important to be carried out in the disaster mitigation stages, because in this stage we can already know what steps must be

taken in the event of a disaster. The disaster mitigation stages are divided into 2 (two) types, first is structural mitigation including physical development and non-structural mitigation, referred to the efforts to reduce the impact of disasters through policies and regulations. In this stage, the Regional Disaster Management Agency of Mojokerto Regency plays a role in preparing a plan and making an effort to reduce the risk caused by the disaster. In connection with this, the Regional Disaster Management Agency of Mojokerto Regency is inseparable from the rights and obligations, which in this case, are the duties and functions set by the regency/ city government as stated in Mojokerto Regent Regulation Number 102 of 2021 concerning Job Description and Functions of the Regional Disaster Management Agency of Mojokerto Regency.

Research Future Directions

The researchers realize that the findings of this study are still preliminary, therefore it is suggested that further research can be carried out in similar locations related to the role of the Regional Disaster Management Agency in reducing the impact and risk of flood disasters by using different research methods, thus the findings obtained are in accordance with the latest community conditions. The findings can be useful as a reference for scientific studies in policy making at the Regional Disaster Management Agency in managing flood disaster in Mojokerto Regency.

Research Weaknesses

This research has a weakness, including the limited time in carrying out the research in the field. This research also experienced limited data in the form of important documents related to disaster management that have been produced during the implementation of disaster mitigation such as Village Disaster Risk Assessment documents, Village Contingency Plans, Village Disaster Management Plans, Village Evacuation Plans, which are still unclear. The existence of those documents are important as a reference for the researchers in collecting data related to disaster management efforts in Banyulegi village as an area that has the potential for flooding.

Conclusion

Based on the research results and discussion of the four research focuses described, it can be interpreted that the Regional Disaster Management Agency of Mojokerto Regency has played a role in implementing flood disaster mitigation efforts in Banyulegi Village, Mojokerto

Regency in accordance with the research focus based on its main tasks and functions from Mojokerto Regent Regulation Number 102 of 2021 concerning the Position, Organizational Structure, Duties and Functions and Work Procedures of the Regional Disaster Management Agency of Mojokerto Regency in the Field of Prevention and Preparedness Article (15) paragraph (1), including: (1) The role of BPBD in mitigation efforts through facilitation and socialization; (2) The role of BPBD in the implementation of cooperation with related agencies or institutions (3); The role of BPBD in mitigation efforts through education and training; (4) The role of BPBD in mitigation efforts through simulation. Mitigation efforts are implemented through structural mitigation and non-structural mitigation. Although in carrying out this role, there are obstacles in the activities of rural communities, yet these obstacles can be minimized through a joint decision between the BPBD of Mojokerto Regency and the village community.

Then, there are also things that the BPBD and the village governments feel as unfortunate regarding important documents where the preparation of documents related to disaster management has been carried out in education and training activities. The documents produced during the implementation of disaster mitigation activities such as the Village Disaster Risk Assessment Document (KRB), Village Contingency Plans, Village Disaster Management Plans (RPB), Village Evacuation Plans are still unclear. The existence of those documents are important as a guideline for the community in implementing the disaster management efforts at the pre-disaster, emergency response and post-disaster stages. The results of this research are said to be in accordance with the aim of this research, to describe the role of BPBD in flood disaster mitigation efforts in Banyulegi Village, Dawarblandong District, Mojokerto Regency, which can be used as a lesson and improve the planning and implementation of future disaster mitigation activities.

Based on the results of the discussion, the researchers provide further future recommendations for the agencies. The Regional Disaster Management Agency of Mojokerto Regency needs to evaluate the Banyulegi Village government regarding important documents such as Village Disaster Risk Assessment documents, Village Contingency Plans, Village Disaster Management Plans, and Evacuation Plans. It is because the Banyulegi Village government has not received and owned the documents, whereas during the training activities, the documents had already been prepared. These documents are important for the Village as a guideline for the community in disaster management efforts at the pre-disaster, emergency response, and post-disaster stages.

For future researchers, in the next few years, research related to flood disaster mitigation may no longer be valid. Therefore, it is necessary to conduct further research to look for the

latest trends and analyze the potential for flood disasters at that time which may be quite different from current conditions.

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