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EVALUATION OF FLOOD DISASTER PREPAREDNESS IMPLEMENTATION IN BANDUNG REGENCY

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ABSTRACT

Flood disasters are a challenge for every region, including the Bandung Regency. The Agency for Regional Disaster Management (BPBD) of Bandung Regency seeks to reduce the risk of flood disasters through prevention and preparedness. This study aims to evaluate the implementation of flood disaster preparedness in Bandung Regency using William N Dunn's policy evaluation theory with the parameters of effectiveness, efficiency, adequacy, equity, responsiveness, and accuracy. The method was descriptive and qualitative with an inductive approach. Based on the research results, implementing flood disaster preparedness in Bandung Regency in terms of effectiveness, efficiency, adequacy, equity, responsiveness, and accuracy can be good. The supporting factors are regional heads' implementation of disaster management, as evidenced by the availability of a disaster management task force and the implementation of effective coordination in reducing disaster risks. The inhibiting factors are limited facilities and infrastructure, lack of human resources, and limited budget to socialize maps of disaster-prone areas. The author can suggest increasing the quality and quantity of human resources, maintaining the available facilities and infrastructure, and increasing the dissemination of disaster information through social media.
Keywords: *evaluation, preparedness, flood disaster*

ABSTRACT

Bencana banjir menjadi tantangan bagi setiap daerah, termasuk Kabupaten Bandung. Badan Penanggulangan Bencana Daerah (BPBD) Kabupaten Bandung berupaya mengurangi risiko bencana banjir melalui pencegahan dan kesiapsiagaan. Tujuan penelitian ini untuk mengetahui evaluasi pelaksanaan kesiapsiagaan bencana banjir di Kabupaten Bandung dengan menggunakan teori evaluasi kebijakan William N Dunn dengan paramenter Efektivitas, Efisiensi, Kecukupan, Perataan, Responsivitas dan Ketepatan. Metode penelitian yang digunakan adalah kualitatif deskriptif dengan pendekatan induktif. Berdasarkan hasil penelitian diketahui bahwa pelaksanaan kesiapsiagaan bencana banjir di Kabupaten Bandung dari segi efektivitas, ketepatan, efisiensi, perataan, kecukupan dan responsivitas bisa dikatakan baik dengan terdapat faktor pendukung dan penghambatnya. Faktor pendukungnya adalah adanya komitmen Kepala Daerah dalam penyelenggaraan penangulangan bencana yang dibuktikan dengan tersedianya Satuan Tugas penanggulangan bencana dan terlaksananya koordinasi yang efektif dalam mengurangi resiko bencana. Faktor penghambatnya antara lain: Sarana dan prasarana yang terbatas; Kurangnya SDM; dan Keterbatasan anggaran sosialisasi tentang peta daerah rawan bencana. Saran yang dapat penulis berikan adalah: Peningkatan kualitas dan kuantitas SDM, Perawatan sarana dan prasarana yang tersedia; dan Peningkatan penyebaran informasi kebencanaan dengan memanfaatkan media sosial.
Kata kunci: evaluasi, kesiapsiagaan, bencana banjir

INTRODUCTION

Indonesia is an archipelagic country with a very strategic geographical location. It is located between two continents and two oceans. The western part of Indonesia borders the Asian continent, the southeastern part borders the Australian continent, and the Indian Ocean borders the western waters of Indonesia. The Pacific Ocean borders the eastern waters of Indonesia.

Indonesia's astronomical location, 6º LU - 11º LS and 95º E - 141º E, is along the equatorial imaginary line. Its tropical climate receives sunlight continuously and is only affected by dry and rainy seasons. The high rainfall causes high average air humidity.

Geographical conditions, topography, and various factors make Indonesia fertile land. One threat is that Indonesia is in a tropical climate region and experiencing extreme global climate change. These extreme weather changes result in disasters detrimental to humans, such as landslides, floods, droughts, fallen trees, and forest fires.

The National Disaster Management Agency (BNPB) recorded a total of 3.544 disaster events that occurred in Indonesia in 2022, with the highest flood disaster occurrence being dominated by 1.531 incidents throughout 2022, starting from January 1, 2022, to December 31, 2022, according to data from the National Disaster Management Agency (BNPB, 2022)

West Java is one of the areas that is included in the flood subscription area. The area of West Java Province is 35,377.76 km2, located at 104° 48' - 108° 48' East Longitude and 5° 50' - 7° 50' South Latitude and consists of 27 districts or cities with 18 districts, nine cities, 627 sub-districts, and 5,957 villages (BPS, 2022).

The complexity of the geological structure owned by West Java Province is caused by mountainous areas in the central and southern parts and the northern region in the form of lowlands. West Java Province has a high disaster risk due to population density and the complexity of the geographical conditions of the West Java region (BPS West Java, 2022). The total population of West Java province, based on data from the Central Statistics Agency (BPS) of West Java in 2022, is 49.405 million.

Based on data from the West Java Open Data 2023 website, West Java experienced an increase in flood disasters from 2018 to 2021 and a decrease in 2022. Although flood disasters decreased from 2021 to 2022, they may increase again due to the topography of West Java Province, the soft contours of the land that easily absorb water, and high rainfall.

West Java Province has a risk index of 131.62 (moderate), and the Bandung Regency area has a high disaster risk index. Judging from the data above, the four (4) cities/regencies with the highest disaster risk index in West Java province are Cianjur, Sukabumi, Tasikmalaya, and Garut. Meanwhile, Bandung Regency ranks 8th with a high disaster risk index in West Java province. With a high disaster risk index, Bandung Regency must be vigilant against all disaster risks (InaRISK, 2022).

Bandung Regency has an area of 174.084,34 Ha, consisting of 31 sub-districts, 270 villages, and 10 sub-districts. Geographically, it is located at the coordinates 107º22' - 108º50' East Longitude and 6º41' - 7º19' South Latitude. Bandung Regency is a highland area, and most of Bandung is mountainous. The land in Bandung Regency can absorb 0.793-2.115 billion cubic meters of water per year.

The water catchment area in Bandung Regency is divided into five parts. The main catchment area is mostly in the southern part of Rancabali District, Pasirjambu District, and Ciwidey District. The waterproof area, situated in Kutawaringin District, the meaningless catchment area, the additional catchment area, and the groundwater discharge area in Solokanjeruk District, Margahayu District, Rancaekek District, Katapang District, Baleendah District, Majalaya District, and Bojongsoang District. Therefore, because it is used as a water release area, the area in the sub-district during the rainy season often experiences flood problems.

Based on data from the Regional Disaster Management Agency (BPBD) of Bandung Regency, flood disasters in Bandung Regency experienced fluctuating events from 2020 to 2022. In 2020, flood disasters in Bandung Regency were 100 incidents. There was an increase in the number of flood disaster events in 2021, with as many as 111 incidents, then decreased in 2022, where flood events occurred as many as 93 incidents in Bandung Regency.

If reviewed based on disaster conditions, according to data from the Bandung Regency Information and Documentation Management Officer (PPID), Bandung Regency often experiences disasters in 2022 landslides, while flood disasters frequently occur after landslides. However, flood disasters cause the most victims. A total of 14.264 families and 47.141 victims were affected by the flood disaster.

Judging from the problems and strategic issues of Bandung Regency Regional Regulation Number 9 of 2021 concerning the Regional Medium-Term Development Plan (RPJMD) of Bandung Regency for 2021-2026 in Chapter IV of the sub-material on Peace, Public Order, and Community Protection, it is explained that Bandung Regency still needs to improve disaster prevention and disaster management services

and also not optimal disaster mitigation efforts because disaster mitigation regulations are still not optimal.

Based on the existing problems, the author is interested in researching and evaluating the implementation of flood disaster preparedness in Bandung Regency, West Java Province. The formulation of the problem in this study is how to evaluate the implementation of preparedness carried out by the Bandung Regency BPBD in the event of a flood disaster and what the supporting and inhibiting factors are for implementing flood disaster preparedness in Bandung Regency. In line with the formulation of the problem, the purpose of this study is to find out the evaluation of the implementation of readiness carried out by the Bandung Regency BPBD in the event of a flood disaster and the supporting factors and obstacles to the implementation of flood disaster preparedness in Bandung Regency.

LITERATURE REVIEW

According to Law Number 24 of 2007 concerning Disaster Management, a disaster is an event or series of events that threaten and disrupt people's lives and livelihoods caused by natural and/or non-natural and human factors. Disasters can result in human casualties, environmental damage, loss of ownership, and psychological effects. They are divided into three types: natural, non-natural, and social.

Disaster management is all efforts or activities carried out to prevent, mitigate, prepare, respond to emergencies, and recover from disasters before, during, and after them. It is activities carried out to control disasters and emergencies and provide a framework to help communities in high-risk situations avoid and recover from disasters. According to Eva Eviany and Sutiyo (2023), disaster management is part of applied science that studies managing and solving disaster problems through systematic analysis and actions (Eviany & Sutiyo, 2023).

Flooding occurs when the river overflows into the surrounding lower plains because the water exceeds the river reservoir (Yulaelawati, 2008:4). Kodoatie and Sugiyanto 2002:73 stated that flooding is the process of overflowing river water to the mainland, which causes property losses and can cause casualties.

Ndraha (Ndraha, 2005) states that policy evaluation is the process of comparing standards with data and analyzing them. The evaluation model is divided into the following:

1. The before-after model, comparing before and after an action (actor, treatment)

2. The group model of the watershed-watershed of the sein compared what should be with the actual one, the benchmark of the watershed solen.
3. The control-control-test group model compares the control group (without treatment) to the test group (given treatment); the benchmark is the control group.

William N Dunn (Dunn, 2003) revealed that evaluation has six aspects of policy criteria, including:

a. Effectiveness: Motivation to achieve goals correctly through appropriate actions and policies according to their goals and functions.
b. Efficiency: efforts made to achieve optimal results by using existing resources.
c. Adequacy: policy carried out with programs and regulations set between organizational performance cooperation to get the desired results according to the objectives.
d. Leveling: organizations and the environment are given the achievement of policy outcomes comprehensively following their duties and functions.
e. Responsiveness: the ability to know the needs of the community and develop policies that can meet the needs and aspirations of the community.
f. Accuracy: certainty of implementing activities carried out in a targeted manner so that the objectives of the set implementation tasks can be achieved.

According to Nick Carter (1991) in LIPI-UNESCO ISDR (2006), preparedness is an action that allows governments, organizations, societies, communities, and individuals to respond quickly and appropriately to disasters to reduce losses and casualties. Preparedness aims to minimize the negative effects of hazards generated by effective vigilant measures and ensure that emergency responses are provided promptly, accurately, and effectively. Preparedness must be considered as a continuous process. The preparedness action includes a disaster management plan, resource maintenance, and personnel training.

According to BNPB, preparedness is a series of activities to anticipate disasters quickly and appropriately (BNPB, 2022).

Article 1, paragraph (7) of Law Number 24 of 2007 concerning Disaster Management states that preparedness is a series of actions intended to systematically, appropriately, and effectively anticipate disasters.

According to the study of the level of school community preparedness using a framework developed by LIPI in collaboration with UNESCO/ISDR in 2006, there are five disaster preparedness parameters (Marlyono, 2018)

1. Knowledge and attitude

   Knowledge is an important element in preparedness. The parameters of the index of high, medium, and low knowledge levels are measured (Marlyono, 2018).

2. Policies and scouting

   Natural disaster preparedness policies are very important and are a concrete effort in carrying out disaster preparedness.

3. Plans for natural disaster emergencies

   Plans are an important part of preparedness related to evacuation and rescue to minimize disaster victims.

4. Disaster warning system

   This system includes warning signs and dissemination of information about disasters. This can help the community take appropriate actions to reduce casualties, property damage, and environmental damage.

5. Resource Mobility

   Human resources (HR), funding, and essential emergency infrastructure are potentials that can support and even become obstacles to natural disaster preparedness.

Government is a social symptom that is seen in relationships between individuals, between groups, and also between individuals and groups. At a certain point, the government emerged in a society (Ndraha T., 1997). According to Ndraha, the government is responsible for the people's interests. The government is also responsible for manufacturing, distributing, and selling tools to meet the community's needs, namely public and civil services (Ndraha, 2003).

In the 2020 book Theory of Regional Government (Sadu Wasistiono and Fernandes Simangunsong), it is stated that the government in a country that implements decentralization by transferring part of its power to autonomous regions as a unity of legal society, in which there are various entities such as regional governments, regional people's representative councils, and other autonomous communities. Other autonomous communities are cultural communities, tribal communities, religious communities, and so on.

METHODOLOGY

The method used in this study was a descriptive qualitative research method with an inductive approach because the author wanted to provide a clear and accurate description of the problems in the field. Sugiyono (2018) stated, "Qualitative research is often called a naturalistic research method because the research is carried out in a natural setting." Descriptive research aims to describe a phenomenon in detail and depth. Qualitative research is research that develops theories from the data collected. This approach was called inductive because the theory is built on data, not vice versa. Arikunto (2013) stated, "The source of data in the study is the subject from which the data is obtained." The data sources used were primary data and secondary data. The researcher used the Purposive technique in taking data sources, which, according to Sugiyono (2017), was sampling data sources by paying attention to certain considerations. The informants in this study were the Chief Executive, Secretary, Head of Prevention and Preparedness, and Disaster Mitigation Analyst of BPBD Bandung Regency, Disaster Preparedness Cadets, and four community members. In this study, the researcher played the role of a research instrument, starting from determining the focus of the research, selecting informants, collecting data, assessing data quality, analyzing data, translating data, and drawing conclusions on the findings of the problem to be researched. The data collection technique used observation, interviews, and documentation. According to MiIes and Huberman in Sugiyono (2013), data analysis techniques were done through data reduction, data presentation, and conclusion.

RESULTS AND DISCUSSION

A. Evaluation of the Implementation of Flood Disaster Preparedness in Bandung Regency, West Java Province

1. Effectiveness

The concept of effectiveness refers to achieving desired results in flood disaster management based on the researcher's views and understanding. This concept means that results must be achieved according to the plan and implemented as best as possible following the operational standards set in flood disaster management so that the process can run well.

The relationship between the vision and mission of the Bandung Regency Regional Disaster Management Agency (BPBD) and the effectiveness of the planning results expected from the steps after completing the task in flood prevention and preparedness. The main duties and functions of the Bandung Regency BPBD are regulated in Regional

Regulation Number 11 of 2010 concerning the Establishment of the Bandung Regency Regional Disaster Management Agency Organization.

In implementing flood disaster preparedness, the Bandung Regency BPBD reviewed the weather predictions issued by BMKG. When entering the rainy season, hydrometeorological disasters cannot be avoided because they can occur anytime and anywhere, but the risk of loss can be reduced.

Table 1
Flood Disaster Occurrence in Bandung Regency
Year 2021-2023

It	Year of occurrence	Number of Incidents	Affected Souls
1	2021	111	214.244
2	2022	93	47.141
3	2023	61	62.600
	Total	**265**	**323.958**

Source: BPBD Bandung Regency (2023)

The table above shows that Bandung Regency experienced unpredictable flood disasters. In its implementation, the number of flood disaster events from 2021 to 2023 has decreased in the number of incidents. Still, the victims affected by the disaster flood in Bandung Regency experienced a fluctuating event, with a decrease in the number of affected souls from 2021 to 2022 and an increase from 2022 to 2023.

The program policy steps taken by the Bandung Regency BPBD in carrying out disaster prevention and preparedness efforts are by continuing to monitor, especially in the affected communities. Furthermore, massive prevention and preparedness efforts are carried out by providing disaster information, education, and socialization to increase community capacity. In addition, the Bandung Regency BPBD is assisted by the role of the pentahelix in implementing flood disaster preparedness.

Table 2
Realization of Bandung Regency BPBD Program Performance in 2021-2023

Achievement Indicators	**2021**		**2022**		**2023**	
	Target	**Realization**	**Target**	**Realization**	**Target**	**Realization**
Disaster Prone Information Services						
Number of Citizens Obtaining Disaster Prone Information	667.569 people	**667.569 people**	382.675 people	**382.675 people**	1.506.013 people	**1.506.013 people**
Disaster Prevention and Preparedness Services						
Number of citizens who receive Disaster Prevention and Preparedness services	269.552 people	**269.552 people**	357.994 people	**357.994 people**	1.058.718 Person	**1.058.718 Person**
Rescue and Evacuation Services for Disaster Victims						
Number of Citizens Receiving Disaster	217.192 people	**217.192 people**	**49.819 people**	**49.819 people**	**808.718 Person**	**808.718 Person**

Victim Rescue and Evacuation Services						

Source: BPBD Bandung Regency (2023)

Based on the table above, BPBD Bandung Regency consistently implements programs in the form of policies for implementing disaster prevention and preparedness every year following Permendagri Number 101 of 2018. In its implementation, the program adjusts to the needs and circumstances in the field. This is in the form of taking appropriate actions to implement prevention and preparedness, which the Bandung Regency BPBD wants to achieve.

2. Efficiency

The Bandung Regency BPBD must be efficient in carrying out its business. In the researcher's view, efficiency in prevention and preparedness is the realization of goals based on desired results by minimizing the efforts made.

Disaster management needs to be carried out as efficiently as possible. The Bandung Regency BPBD measures resource efficiency in terms of personnel, budget, and infrastructure. The BPBD can work optimally if it streamlines the roles and performances of employees and volunteers on the field.

The researcher obtained information from the Bandung Regency BPBD based on the position map in the Position Analysis and Needs Analysis (Anjab/ABK). In 2021-2026, the Bandung Regency BPBD employees needed approximately 127 people, but 82 people, consisting of 27 civil servants and 55 non-civil servants, carried out their duties and functions to achieve performance.

The measure of efficiency success can also be judged by the budget or costs incurred in achieving the goal to get the desired results. It is efficient when it achieves performance targets in its implementation and spends a small budget or cost. Based on data from the 2023 Bandung Regency BPBD LAKIP

Table 3
Resource Use Efficiency (Budget) in 2023

STRATEGIC GOALS	TARGET PERFORMANCE INDICATORS	% Performance Target (≥ 100%)	Budget Absorption %	Efficiency Rate %
Increasing regional capacity in disaster management	1. Regional Capacity Index (IKD) 2. Percentage improvement in services to community members affected by the disaster	100	92.68	7.32

Improving the Quality of Apparatus Performance and the Implementation of Government Affairs in the Field of Peace and Public Order and Community Protection	1. SAKIP Values 2. IKM Values	100	87.43	12.57
	3. Percentage of BMD in good condition			

Source: LKIP BPBD Bandung Regency 2023

The data on the efficiency of using budget resources above the number of targets achieved by using effective resources shows that the budget has achieved high efficiency. This is under the principles of public budget management and good governance, one of which is effective budget management to achieve goals and objectives.

Table 4
List of Operational Goods
Handling the 2023 Flood Plan

It	Item Name	Sum
1	Rescue Car	3
2	KLX Motorcycles	7
3	Safety Rescue Air Helmet	30
4	Flexible Buoy	5
5	Small Machine Saw	5
6	Viber LCR Boat	2
7	Rubber Boat	6
8	Water Pump Machine	10
9	Suction Hose	2
10	Exhaust Hose	6
11	Torpedo Buoy	5

Source: BPBD Bandung Regency (2023)

Based on data obtained by researchers from the Bandung Regency BPBD, the availability of facilities for handling flood disasters can be limited. Using existing facilities must be streamlined to overcome disaster management quickly and optimally.

The steps to implement the flood disaster prevention and preparedness command and also the role of the community in it are first with the issuance of a warrant from the Chief Executive of the Bandung Regency BPBD to the Prevention and Preparedness Division, then reassigning relevant personnel to carry out preparedness both by training, counseling, dissemination, and disaster information to the people of Bandung Regency both through social media and appeal letters.

In carrying out its duties, the Bandung Regency BPBD makes considerable efforts in disaster management, including disaster prevention and preparedness. Employees are distributed evenly according to the needs and conditions of the field, which volunteers also assist. The assigned personnel actively provide training, counseling, dissemination,

and disaster information to the community through disaster preparedness. Budget and supporting facilities are used as needed, following disaster prevention and preparedness needs.

3. Adequacy

Standard Operating Procedures (SOPs) in flood disaster prevention and preparedness are influential factors. A plan can solve disaster problems and achieve the desired results.

Implementing disaster prevention and preparedness of the Bandung Regency BPBD refers to the Regulation of the Minister of Home Affairs Number 101 of 2018 in the regulation explaining the Technical Standards for Basic Services in the Minimum Service Standards for Regency/City Regional Disaster Sub-Affairs. Following Article 9 Paragraph (3), the basic services of disaster sub-affairs consist of disaster-prone information services, disaster prevention and preparedness services, and rescue and evacuation services for disaster victims.

Table 5
Performance Achievements of BPBD Bandung Regency in 2023

Strategic Goals	Target Performance Indicators	Target 2023	Realization 2023
Increasing regional capacity in disaster management	Regional Capacity Index (IKD)	0.56	0.56
	Percentage improvement in services to community members affected by the disaster	100%	100%
Improving the Quality of Apparatus Performance and	SAKIP Value and IKM Value	72	77.60
		77	83.43
Organizer of Public Peace and Order Affairs and Community Protection	BMD Percentage in Good Condition	80%	48.64

Source: LKIP BPBD Bandung Regency, 2023

The priority programs of the Regional Capacity Index (IKD) of the Bandung Regency BPBD include risk assessment and integrated planning; strengthening policies and institutions; development of training and logistics information systems; increasing the effectiveness of disaster prevention and mitigation; thematic handling of disaster-prone areas; development of disaster recovery systems; and improving disaster emergency preparedness and development. Judging from Table 5, the performance achievements of the Bandung Regency BPBD achieved the desired results in its realization, following or even exceeding the targets made.

The researcher observed where the embankment collapsed while researching at the Bandung Regency BPBD, precisely in the Citeureup Village area, Dayeuhkolot District, Bandung Regency. The embankment collapse occurred due to the rapid overflow of the Cigede River due to heavy rain on Thursday, January 11, 2024. As a result, the flooded residential area reached two meters in the house. In this incident, the Bandung Regency BPBD immediately reacted by sending personnel to direct a team of volunteers to evacuate and conducting commands to coordinate disaster management with OPD and related elements.

4. Alignment

Prevention and preparedness for flood disasters must be carried out to reduce the risk of events and losses caused by disasters. In the process of leveling disaster prevention and preparedness, BPBD Bandung Regency makes efforts to make policies for the community, including:

1) Providing disaster-prone information services for the community through email and social media.
2) Conducting disaster-prone socialization, communication, information, and education (KIE) to residents in disaster-prone areas who obtain disaster-prone information according to the type of disaster threat.
3) Conduct disaster prevention and mitigation training for volunteer teams and the community.
4) Control operations and provision of disaster preparedness facilities.
5) Strengthening regional capacity for prevention and preparedness by forming three disaster-resilient villages and disaster-resilient families.
6) The capacity of the Disaster Rapid Reaction Team (TRC) has been developed, increasing participation in TRC technical guidance, mountain and river schools, and SAR from the community.

The efforts carried out by the Bandung Regency BPBD are quite good and effective, judging from the policies that are evenly distributed to different communities following the situation and conditions experienced by the area. From the community side, they are already aware of prevention and preparedness in dealing with disasters.

Budgeting regulations refer to the local government budget, which has been regulated in such a way that regular compensation for residents affected by disasters can use routine funds from the Regional Expenditure Budget (APBD) of Bandung Regency or, during

emergencies, can use unexpected expenditure budgets in massive circumstances that can disrupt livelihoods during emergency response status. The *jitupasna* team, or the rehabilitation and reconstruction field, oversees calculating losses, reported to PUPR or Disperkimtan, which determines whether it is in light, medium, or severe damage when it is included in the light category of BPBD by the agency that conducts verification.

Disaster prevention and preparedness efforts carried out by the Bandung Regency BPBD to provide costs, benefits, and policies that are evenly distributed to different groups that researchers obtained from the Bandung Regency BPBD LKIP in 2023, improving services for residents affected by disasters in the form of citizens who receive disaster-prone information services to as many as 1.506.013 people. The number of citizens who received disaster prevention and preparedness services is 1.058.718 people, and the number of citizens who received rescue and evacuation services for disaster victims is 808.718 people. BPBD Bandung Regency also carried out Socialization, Information Communication, and Education (KIE) activities (installation of disaster signs), Disaster Prevention and Mitigation Training, Regional Capacity Strengthening for Prevention and Preparedness (the formation of three Disaster Resilient Villages and Disaster Resilient Families), Post-Disaster Handling, TRC Technical Guidance, SAR, Mountain and River Schools, Disaster Preparedness Rehearsals, disaster emergency rapid response and search, and help and evacuation of disaster victims.

5. Responsiveness

Disaster management is the government's responsibility and a joint affair responsible for its implementation. Responsiveness is an effort by various parties to respond to BPBD's performance. Therefore, the pentahelix concept must collaborate, and the government, academics, business actors, the media, and the community must unite to handle disaster management in collaboration with BPBD.

One of BPBD's functions is the command function, where BPBD leads, coordinates, and supervises integrated disaster management operations. This includes making the right decisions before, during, and after disasters.

Disasters cannot be anticipated and can occur at unexpected times, so the role of all elements in handling them is needed, which has its role. The Bandung Regency BPBD implements a pentahelix cooperation pattern, such as the government, academics, business actors, the media, and the community must collaborate in handling disasters. BPBD must always be ready anywhere and anytime when there is a report of a disaster event because disaster handling must be managed immediately before having a greater

impact. Therefore, BPBD always implements a response time of 60 minutes since the report is received and works 7x24 hours. The team assigned to the field is always assisted by a team of disaster volunteers and the community when the situation is in emergency response, so handling it always works effectively and efficiently. BPBD ensures the community is ready to face disasters by providing disaster information, socialization, and education, especially communicating with the area's disaster volunteer team and village heads. BPBD collects data and asks about the condition of the injured victims and victims who have suffered losses due to the disaster.

The Disaster Volunteer Team was formed by the Bandung Regency BPBD in each village so that all areas in Bandung Regency can be monitored and get a quick response if signs of a disaster occur. The Disaster Volunteer Team is given qualified training to know how to implement what residents can do in the form of prevention, preparedness, emergency response, and evacuation in dealing with disasters. The Disaster Volunteer Team also received disaster information continuously from the Bandung BPBD Regency.

The Bandung Regency government's anticipatory efforts to deal with possible disasters in the future take several approaches. The formation of community groups that care about disaster management, such as the Disaster Volunteers, the Disaster Risk Management Forum (FPRB), and disaster preparedness cadets (*tagana*), are valuable resources for implementing disaster management.

6. Accuracy

It is not uncommon to find several obstacles in implementing flood disaster prevention and preparedness by the Bandung Regency BPBD, so it is necessary to form a business to carry out activities that support its success.

In carrying out the implementation of flood disaster preparedness, the Bandung Regency BPBD implements Standard Operating Procedures (SOP) following applicable laws and regulations, especially guided by the Regulation of the Minister of Home Affairs Number 101 of 2018, namely regarding the Minimum Service Technical Standards for disaster sub-affairs:

1) Disaster-prone information services

As much as possible, when facing obstacles when handling flood disasters, the Bandung Regency BPBD strives to make disaster-prone maps and inform the entire community through various media, such as the official website *https://bpbd.bandungkab.go.id/* and also on the official social media Instagram, Twitter, and Facebook of the Bandung Regency BPBD *@bpbd_kabbandung*. In addition to other efforts in the form of preparedness to face hydrometeorological

natural disasters, the Bandung Regency BPBD always issues a circular letter from the Regent. This was shown when, in 2022, the weather forecast conditions issued by BMKG predicted that there would be a peak rainy season in January and February 2023, so the Regent of Bandung Regency issued Circular Letter (SE) No. BC.02./3731/BPBD concerning Preparedness to Face Potential Natural Disasters in Bandung Regency, West Java Province. Other efforts are also coordinated with all stakeholders to inform about disasters.

2) ServicePrevention and disaster preparedness

As a follow-up to the dissemination of information, the Bandung Regency BPBD took steps to prevent and prepare for flood disasters, namely preparing an action plan that is useful for the implementation of preparedness for flood disasters, specifically providing training for volunteer teams, socialization, and community education, and also installing disaster signs in the areas of Pangalengan, Majalaya, Ibun, Kertasari, Cimaung, Kutawaringin, Soreang, Bojongsoang, Dayeuhkolot, and Baleendah. These areas are the most prone to disasters. The installation of signs is prioritized in areas with disaster vulnerability that have the potential to cause casualties, such as landslides, earthquakes, and flash floods.

In addition, the Bandung Regency BPBD strengthens regional capacity for prevention and preparedness by building disaster-resilient villages in the areas of Tenjolaya Cicalengka Village, Kutawatingin Village, Pasawahan Village, Ciburial Cimenyan Village, Majalaya Village, Lamajang Pangalengan Village, Panenjoan Cicalengka Village, Nanjungmekar Rancaekek Village, Citaman Nagreg Village, and Nanjung Mekar Village. Disaster-resilient villages can recognize threats in their area and can organize community resources to reduce vulnerability and, at the same time, increase capacity to reduce disaster risk.

3) Rescue and evacuation services for disaster victims

In the implementation of the evacuation, the Bandung Regency BPBD handled the situation quickly after a disaster incident was reported. It also assisted victims affected by the flood disaster in meeting basic needs during the emergency response period.

Based on interviews and observations conducted by researchers regarding the accuracy of the planned regulations, they are considered quite good because they benefit the community. The implementation of disaster prevention and preparedness handling, especially floods, when affected residents provide reports, BPBD Bandung Regency always assists and is right on target.

B. Supporting Factors and Inhibiting Factors

1. Supporting Factors

Factors that support the implementation of flood disaster prevention and preparedness based on the results of interviews and observations of researchers at the Bandung Regency BPBD include:

1) There is a commitment from the elected regional head in the implementation of disaster management in Bandung Regency.

Regional heads have important roles in disaster management that can affect everyone. They need to lead public opinion on the importance of prevention and preparedness in dealing with disasters.

The regent of Bandung Regency is very concerned about disaster management. This can be seen from the mission of the elected regent for the 2021-2026 period. Through the third mission, namely "Optimizing regional development based on community participation that upholds creativity in the framework of local wisdom and environmental insight," the objectives and directions of the mission provide direction for implementation where the affairs of peace, order, and community protection enter the affairs of the government, mandatory basic services. The purpose of the activity performance indicator, namely "Realization of a Disaster Resilient Community with Increased Regional Capacity and Community Preparedness," proves that disaster management in Bandung Regency is considered very important.

2) Availability of units Disaster Management Tasks

The Bandung Regency BPBD formed a task force that assists in disaster management. Strengthening regional capacity for prevention and preparedness by adding the establishment of 3 (three) disaster-resilient villages in 2023 and disaster-resilient families. The capacity of the Disaster Rapid Response Team (TRC) developed, and the increase in participation in TRC technical guidance, mountain and river schools, as well as SAR from the community can be seen in Table 2, where every year, the Bandung Regency BPBD strives to improve the implementation of prevention and preparedness to face disasters.

3) Effective coordination efforts to reduce disaster risk

There are efforts and coordination steps from the Regional Disaster Management Agency (BPBD) of Bandung Regency that are effective and comprehensive and integrated into disaster risk reduction in the implementation of development plans and the availability of disaster risk assessments. Disaster risk maps up to the sub-district

and sub-district/village levels. As one example, the Bandung Regency BPBD made a flood disaster risk index map for the Bandung Regency to prevent and prepare for flood disasters so that the community and all related elements can be ready to face flood disasters.

2. Inhibiting Factors

Factors that can hinder the implementation of disaster prevention, preparedness, and disaster management in Bandung Regency that researchers found include:

1) Limited facilities and infrastructure

One of the main supports in disaster management is facilities and infrastructure. Regional Property (BMD), a supporting tool in disaster management, is stored in warehouses, and not a few are abandoned and untouched. If reused, it can result in the tools used being unprepared or even damaged.

BPBD Bandung Regency's facilities and infrastructure to handle natural disasters are guided by Permendagri No. 7 of 2006 (standardization of government infrastructure). However, equipment is still lacking in its implementation, such as the incomplete Rescue KIT. Disaster management facilities and infrastructure have not been optimal due to inadequate budgets, in addition to the number of BMDs that are unsuitable for use, so they need to be destroyed.

2) Lack of Human Resources (HR)

Efficiency in the Use of Resources (Employees) in 2023 based on Position Analysis and Needs Analysis (Anjab/ABK) that in 2021-2026, the Bandung Regency BPBD Employees needed approximately 127 people, but in carrying out their duties and functions to achieve performance are carried out by 82 people. Human resources (HR) in the Bandung Regency BPBD are still lacking in quantity and quality, especially regarding disasters when compared to the workload. As a result, the efficiency of the Bandung Regency BPBD is still low. Structural and functional/technical training is needed to improve the quality of existing human resources and increase the number of civil servants according to organizational needs.

3) Limited effectiveness of information and communication networks in disseminating disaster information to the public

Information and communication are important in disaster management. One effort is mapping disaster-prone areas. However, the map of disaster-prone regions has not been socialized to all districts due to the limited budget for socialization in disaster-prone areas. In addition, mapping potential disaster-prone areas based on the scope of the area and type of disaster has not been optimal.

CONCLUSIONS

The conclusion that can be drawn is that flood disaster preparedness in Bandung Regency has been running well. Based on William N Dunn's theory, implementing flood disaster preparedness is said to be effective through programs to increase community capacity and efficiency in using resources as needed. The implementation follows the applicable SOPs based on Permendagri Number 101 of 2018. In addition, BPBD Bandung Regency provides evenly distributed services and information to the community through flood disaster preparedness, responsiveness, and right on target because it is supported through the collaboration of pentahelix elements, especially disaster volunteer teams and communities that work well together.

The supporting factors are also the inhibiting factors of its implementation, namely:

1. Supporting factors.
   a. There is a commitment from the Regional Head Featured hotels in the implementation of disaster management in Bandung Regency.
   b. Availability of disaster management task force
   c. Effective coordination efforts to reduce disaster risk
2. Inhibiting factors
   a. Limited facilities and infrastructure
   b. Lack of Human Resources (HR)
   c. Limited effectiveness of information and communication networks in disseminating disaster information to the community.

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