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Factors That Support And Hinder The Effectiveness Of Pre-Natural Disaster Management In Implementing Tsunami Early Warning In Banten

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ABSTRACT

Disaster management in Banten is basically regulated in Law Number 24 of 2007 concerning Disaster Management, Government Regulation Number 21, 22, 23 of 2008 concerning Implementation of Disaster Management and Regional Regulation Number 3 of 2010 and Regional Regulation Number 1 of 2015.

The natural disaster management policy is divided into three stages, namely pre-disaster, emergency response and post-disaster. In accordance with the conditions in the Banten region which is very prone to natural disasters, it is very important to pay attention to the pre-disaster stage in order to reduce the risks that occur due to natural disasters. At the pre-disaster stage, the implementation of major disaster management is divided into two, namely in situations where a disaster does not occur and in situations where there is the potential for a disaster to occur. Furthermore, it is further explained that the implementation of disaster management in situations where there is a potential for disaster to occur is divided into three actions, namely preparedness, early warning and disaster mitigation.

The focus of this research is threefold, namely Factors that support and hinder the effectiveness of natural disaster management policies in Banten. Specifically on pre-disaster management policies for Tsunami early.

In this research, the effectiveness of pre-disaster management, especially regarding tsunami early warning, is measured in more detail through aspects. The research results, supporting factors for the effectiveness of natural pre-disaster management policies in implementing tsunami early warning in Banten, namely human resources from community groups who have awareness of tsunami early warning and stakeholders in government institutions, adequate in quality and quantity, well-maintained infrastructure and facilities. complete infrastructure. Factors that hinder Tsunami early warning policies are the ineffective implementation of Tsunami early warning applications, including internet network failures and power outages, overlaps in logistics provision, Tsunami early warning information applications that have not been utilized optimally, lack of public awareness of Tsunami early warnings and lack of fast coordination between stakeholders in implementing early warning disaster management. Thus, there is one aspect that is not yet effective, namely Not Effective in Dissemination and Communication.

Keywords: Disaster management, natural disaster management policy, effectiveness of pre-disaster management, supporting factors, Tsunami early warning policies

Introduction

Banten Province, which is the youngest province and is a division area of West Java Province, is an area that is also prone to natural disasters. Natural disasters that occurred in Banten Province included floods, landslides, earthquakes, abrasion and tsunamis. The tsunami disaster that hit the Banten and Lampung Provinces was due to the eruption of the sub-mountain Krakatoa, resulting in waves as high as 57 (fifty seven) meters capable of destroying at least 5 (five) regencies in the Banten and Lampung Provinces, namely Pandeglang, Serang, South

Lampung, Pesawaran and Tanggamus, killing 437 people and destroying approximately 2,752 residents' houses. Banten Province itself, the area worst affected by the tsunami was Pandeglang Regency, precisely in the Sumur District area. The impact of the tsunami that can be seen in Sumur District, for example, flattened buildings due to the impact of terrible waves, the destruction of fishing boats which are the livelihood of most Wells community not to mention the many people who died as a result of the tsunami that occurred.

Meanwhile, based on research by Niken (2019), in 2018 in Banten Province there was a disaster that affected 2 districts, namely Pandeglang and Serang. Another province whose areas are affected is Lampung province. The total number of victims who died was 437 people, then 14,059 people were injured, 16 people were missing, and 33,721 were displaced. Damaged buildings included 2,752 houses and 92 accommodation or food stalls. Transportation equipment for 510 boats and ships, 147 vehicles, as well as two dock and shelter facilities were also damaged. Pandeglang is the worst hit area. The distance between Mount Anak Krakatau and Pandeglang Regency is around 65 km. Pandeglang region had the most deaths, namely 296. Most are visiting tourists. Other victims were 7,656 people injured, 8 people missing, and 20,726 people displaced. The tsunami disaster destroyed the entire coast of Serang Regency, Banten Province due to the eruption of Mount Krakatoa in 1883. This disaster even wiped out almost the entire coast of East and South Asia with hundreds of thousands of victims.

Based on more detailed statistical data, in the 2019-2020 period in the Banten region, especially in Walantaka, Taktakan, Serang, Serang City, Kasemen, Curug and Cipocok Jaya, there were 124 flood disasters, 22 fire disasters, 222 hurricane disasters, and landslides as many as 10 disaster cases (BPS 2020). Nurjanah et.al (2012) explained that there are 3 (three) factors that cause disasters, namely (1) Natural factors (natural disasters) due to natural phenomena and without human intervention. (2) Non-natural factors (nonnatural disasters), namely not due to natural phenomena and also not the result of human actions, and (3) Social/human factors (man-made disasters) which are purely the result of human actions, for example horizontal conflict, vertical conflict, and terrorism. In this case, it can be said that the factors that cause disasters consist of several aspects that must be taken into account. Seeing the impact of natural disasters, the public is always advised to remain vigilant and alert. Regarding hydrometeorological disasters, BNPB asks the public to pay attention to weather forecasts provided by the Meteorology, Climatology and Geophysics Agency (BMKG). Family preparations need to be made to face a number of potential dangers. Natural disasters are disasters caused by events or a series of events caused by nature, including earthquakes, tsunamis, volcanic eruptions, floods, droughts, hurricanes and landslides.

Preventive efforts are very necessary to prevent natural disasters, but this does not mean that natural disasters will not occur, but they can be minimized. After preventive efforts have been carried out, the next thing that needs to be focused on is efforts to overcome natural disasters that occur. In managing natural disasters, it is necessary to carry out natural disaster management in order to minimize the impact of the disaster. Prastika (2020) explains that one of the efforts made by BNPB and BPBD in disaster management is through the formation of Disaster Resilient Villages/Villages in villages and sub-districts with high disaster risk. Monardo (2020) implicitly said that basically Indonesia has made efforts to deal with disasters and recover post-disaster conditions immediately from the detrimental impacts of disasters, if they are hit by a disaster. Disaster Resilient Villages have been formed especially for disaster-prone areas. This Disaster Resilient Village is regulated in the Regulation of the Head of the National Disaster Management Agency Number 1 of 2012 concerning General Guidelines for Disaster Resilient Villages/Subdistricts (Perka BNPB 1/2012). The community and non-governmental organizations, individually and collectively, have made efforts to strengthen community resilience through the Village Disaster Risk Reduction (PRB) Forum. Disaster Resilient Villages really help disaster management efforts so that they can reduce the risks that occur.

Preparedness is one part of the disaster management process and in the current concept of disaster management, increasing preparedness is an important element of pro-active disaster risk reduction activities, before a disaster occurs.

The Tsunami early warning system is an important part of the community preparedness mechanism, because warnings can be an important key factor that connects the preparedness and emergency response stages. Theoretically, if a Tsunami early warning is delivered on time, the negative impact of an event that can cause a devastating disaster can be minimized. An early warning system is a series of systems to notify about the occurrence of natural events, which can be in the form of disasters or other natural signs. Early warning to the public regarding disasters is an act of providing information in language that is easily digested by the public. In critical situations, in general, early warning, which is the delivery of information, is realized in the form of sirens, bells and so on. The hope is that the public can respond to this information quickly and accurately. The community's alertness and speed of reaction is needed because of the limited time between the release of information and the (suspected) arrival of a disaster. Critical conditions, limited time, major disasters and saving people are factors that require early warning. The earlier the information is conveyed, the more time there is for residents to respond.

Ristrini (2012) explains that in disaster management preparedness policy, it can be interpreted that preparedness is an important stage in disaster management, which must be anticipated by both government, private and community elements, in the form of developing regulations, preparing programs, funding and developing networks. disaster preparedness institutions or organizations. In technical implementation, preparedness is then referred to as a continuous and integrated process resulting from various risk reduction

activities and resources (International of Red Cross and Red Cresscent Society, 2016).
Triana (2017) explains that mitigation can be categorized into two, namely based on cultural and structural approaches. Structural mitigation is an effort to minimize disasters carried out through the construction of various physical infrastructure and using technological approaches, while nonstructural is through legislation, training and others. Cultural mitigation is the control and prevention of disasters that can be carried out using the culture and traditions of local communities as well as local community wisdom. In disaster mitigation there are terms which constitute a level in disaster mitigation planning, namely: disaster threats include unexpected disasters, expected and observed disasters and vulnerability as the identity of disaster conditions.
Based on existing data related to forms of policy regarding pre-disaster management in the implementation of early warning, it is known that there are several parties involved and integrated. Based on the guidelines for early warning services (2012) which are based on Law Number 31 of 2009, as an example of the case in Tsunami early warning communications, the parties involved in this case are BMKG, National and local TV/radio media, BNPB, BPBD, The TNI, POLRI, cellular service providers, hotel and tourist attraction managers and the public are at risk.
Each party has duties and functions to be able to carry out pre-disaster management in implementing early warning effectively. Based on the policies that have been regulated, BMKG is the provider of early warning news in Indonesia. BMKG conveys earthquake news, Tsunami early warning news, and suggestions for follow-up action in areas threatened by a tsunami to other parties in the Tsunami early warning communication chain. BNPB is obliged to follow up on earthquake news and early warning news as well as suggestions submitted by BMKG. BNPB helps disseminate early warnings and advice to the Regional Disaster Management Agency (BPBD). The local government is obliged to follow up on earthquake news and early warning news as well as suggestions submitted by the BMKG. The regional government is the only party in the early warning communication chain that has the authority and responsibility to decide and officially announce evacuation status based on information from BMKG. Based on Law 24/2007 articles 46 and 47; PP 21/2008 article 19 and Perka BNPB 3/2008 especially in Chapter 2 which states that local governments are responsible for immediately and widely announcing clear and instructive directions to help residents and visitors in the area act quickly and appropriately against the threat of a tsunami.
The TNI and POLRI are obliged to follow up on earthquake news and early warning news as well as suggestions submitted by the BMKG. The TNI plays a role in efforts to disseminate earthquake news or early warning news, especially at the regional level. TV and radio stations at the national or regional level (government and private) are required to broadcast earthquake news and early warning news as well as advice provided by the BMKG. Communities at risk have the right to receive information about the tsunami threat as well as instructive guidance that enables people threatened by disaster to act appropriately and quickly. Cellular service providers are one part of the chain of disseminating earthquake news and early warnings via SMS mode. Hotel managers are obliged to save the guests who stay at the hotel, visit the hotel, and the people around the hotel. Thus, it is important to research further into what factors hinder and support the effectiveness of early warning policies in Banten Province.

LITERATURE REVIEW

Effectiveness Concept

The word effective comes from English, namely effective, which means successful or something done successfully. The popular scientific dictionary defines effectiveness as accuracy of use, useful results or supporting goals. James L. Gibson et.al (2012) provide an understanding of effectiveness using a systems approach, namely (1) the entire input-process-output cycle, not just output, and (2) the reciprocal relationship between the organization and its environment. According to Handoko (2016) effectiveness is the relationship between output and goals, the greater the contribution (contribution) of output to achieving goals, the more effective the organization, program or activity. Effectiveness focuses on outcomes, programs or activities that are considered effective if the output produced can meet the expected goals.
Effectiveness is a basic element for achieving predetermined goals or targets in every organization, activity or program. It is said to be effective if the goals or targets are achieved in accordance with what has been determined. This understanding is in accordance with the opinion of Mahmudi (2005:92) which states that effectiveness is the relationship between output and goals, the greater the contribution (contribution) of output to achieving goals, the more effective the organization, program or activity. Kurniawan (2005:109) defines effectiveness as the ability to carry out tasks, functions (operations, program activities or missions) of an organization or the like without pressure or tension between its implementation. Based on several expert opinions, it can be interpreted that effectiveness is a measure that states how far the target or goal has been achieved.

Public Policy Concept

The term public policy is a translation of the English term, namely public policy. Some people translate the word policy as "policy". Meanwhile, Samodra Wibawa, Muhadjir Darwin, and Abdul Wahab translated it as "wisdom". Although there is no agreement that policy is translated as "policy" or policy, the tendency is for policy to use the term policy. Therefore, public policy is translated into public policy (Anggara, 2014).

Dunn (2003) formulates public policy as follows: Public Policy is a guideline containing values and norms that have the authority to support government actions within its jurisdiction. Public policy is everything that is done or not done by the government, why a policy must be implemented and whether it is beneficial for life together must be a holistic consideration so that the policy contains great benefits for its citizens and has a small impact and should not cause detrimental problems, even though Thus, there are definitely those who benefit and those who lose, this is where the government must be wise in establishing a policy (Dye, 2011).

Stages of Public Policy

The process of making public policy is a complex process because it involves many processes and variables that must be studied. Therefore, several political experts who are interested in studying public policy divide the processes of formulating public policy into several stages. The purpose of a division like this is to make it easier for us to study public policy. However, some experts may divide these stages in a different order. The stages of public policy according to William Dunn (2013) are as follows:

1) Agenda preparation stage

At this stage, elected and appointed officials place issues on the public agenda. Previously, this issue competed first to be included in the policy agenda. Ultimately, several issues enter the policy agenda of policy formulators. At this stage, perhaps a problem is not touched upon at all, while another problem is determined to be the focus of discussion, or there are also problems for certain reasons that are postponed for a long time.

2) Policy formulation stage

At this stage, issues that have entered the policy agenda are then discussed by policy makers. These problems are defined and then the best solution is sought. The solution to this problem comes from various existing alternatives or policy options. In policy formulation, each alternative competes to be chosen as the policy taken to solve the problem. In this stage, each actor will compete and try to propose the best solution to the problem.

3) Policy adoption stage

At this stage, of the many policy alternatives offered by policy formulators, in the end one of the policy alternatives is adopted with the support of the legislative majority, consensus between institutional directors or a judicial decision.

4) Policy implementation stage

At this stage, a policy program will only remain elite records if the program is not implemented, namely carried out by administrative bodies or government agents at lower levels. The policies that have been taken are implemented by administrative units that mobilize financial and human resources. At this implementation stage various interests will compete with each other. Some policy implementations have the support of implementers, but others may be opposed by implementers.

5) Policy evaluation stage

At this stage, the policies that have been implemented will be assessed or evaluated, to see to what extent the policies have been made to achieve the desired impact, namely solving problems faced by society. Therefore, measurements or criteria are determined which are the basis for assessing whether the public policy that has been implemented has achieved the desired impact or goal or not.

Natural Disaster Management

According to Law no. 24 of 2007, a disaster is an event or series of events that threatens and disrupts people's lives and livelihoods. arakat caused, either by natural factors and/or factors non-natural and human factors, resulting in human casualties, environmental damage, property loss and psychological impacts. The Asian Disaster Preparedness Center (ADPC) defines disaster in the formulation "The serious disruption of the functioning of society, causing widespread human, material or environmental losses, which exceed the ability of the affected communities to cope using their own resources" (Abarquez & Murshed, 2004). According to Law no. 24 of 2007 Natural disasters are disasters caused by events or a series of events caused by nature, including earthquakes, tsunamis, volcanic eruptions, floods, droughts, hurricanes and landslides. The Ethiopian Disaster Preparedness and Prevention Commission (DPPC) explains that natural hazards are disasters caused by natural processes over which humans have little or no control. Humans can minimize the impact of hazards by developing appropriate policies, such as spatial and regional planning, building requirements, and so on (Handmer, 2007).

Effectiveness of Natural Disaster Management Policies

In effectiveness theory, according to Steers (2015), effectiveness is the extent to which an organization can carry out all its main tasks or achieve all its targets. Lemieux (2000) formulates public policy as a product of activists intended to solve public problems that occur in a particular environment carried out by political actors whose relationships are structured. In Law Number 24 of 2007, disaster management is defined as a planned process carried out to manage disasters properly and safely. In this case, the effectiveness of natural disaster management policies can be interpreted as the achievement of all targets that have become a product that has been prepared in order to solve problems related to natural disasters that are managed well and safely.

In recent years, disaster management policies have experienced several changes in trends as can be seen in the table. Some trends to pay attention to are:

1. The political context is increasingly pushing disaster management policies to become legal responsibilities.

2. Greater emphasis on increasing community resilience or reducing vulnerability.
3. Disaster management solutions emphasize community organization and development processes.
In establishing a disaster management policy, the process that generally occurs consists of several stages, namely agenda setting, decision making, policy formulation, policy implementation, and policy evaluation. In the case of Indonesia, the Central Government is currently at the stage of policy formulation (the process of drafting several Government Regulations is underway) and policy implementation (BNPB has been formed and is encouraging the process of establishing BPBDs in the regions).
Meanwhile, the Regional Government is at the agenda setting and decision making stage. Several regions that experienced major disasters have gone further in the policy formulation and policy implementation stages.

Preparedness

Nick Carter in (LIPI, 2006) states that preparedness of a government, community group or individual is actions that enable the government, organizations, society, communities and individuals to be able to respond to a disaster situation quickly and effectively. Preparedness is a series of activities carried out to anticipate disasters through organization and appropriate and effective steps (Law No. 24 of 2007 concerning Disaster Management). Preparedness is an activity carried out by both individuals and groups in society who have the ability both psychologically and physically to face a disaster. Preparedness is a part of disaster management that is currently developing based on its management and preparedness cannot be separated from integrated disaster management. The concept of disaster preparedness is used in reviewing the school community preparedness research framework which emphasizes the ability to carry out emergency response activities well before the disaster. , during a disaster, and after a disaster occurs appropriately and quickly (LIPI, 2006).

Early Warning

The early warning system is a specific link (critical relationship) between preparedness actions and emergency response activities. There are 2 (two) factors that play a role in the Early Warning System framework, namely the Decision Maker and the Community. On the community side, there are 3 (three) elements that determine how the community reacts to the Early Warning System. These elements consist of Knowledge, Attitude and Behavior. The first step in shaping the public's reaction to the Tsunami Early Warning System is to provide information about the Early Warning System. It is hoped that people who have gained knowledge of this information will have a positive change in attitude towards the Early Warning System. It is hoped that this change will be able to make people behave positively towards the Early Warning System. If the stages of change in the community's reaction to the Tsunami Early Warning System are as expected, then the Tsunami Early Warning System can reach the community accurately. Apart from community factors, another factor that plays a role in the Early Warning System framework is the Decision Maker. In Indonesia, through Presidential Decree Number 111/2001, we know that disaster management and refugee handling are coordinated by Bakornas PBP at the National level, Satkorlak PBP at the Provincial level and Satlak PBP at the Regency/City level. Through the existence of this institution, policies can be made related to the Tsunami Early Warning System, especially matters related to the Early Warning System framework, for example Protap, Operational Procedures and Working Mechanisms. In this way, the Tsunami Early Warning System as an initial sub-segment in the preparedness stage can play a good role so that in the end when a disaster occurs, its severity can be controlled. With a good conceptual framework, the Tsunami Early Warning System as a chain between preparedness actions and emergency response activities will produce response activities that lead to overcoming losses due to disasters so that disaster victims can be reduced.

Research methods

In this research, the approach used is a qualitative research approach which is descriptive qualitative in nature, meaning that in this research the process carried out is natural and natural without manipulation, where everything objectively matches the conditions at the research site (Zaenal Arifin, 2012). The method of this research is policy study. Majchrzak (1984) explained in Sugiono (2017) that: "Policy research is a research process carried out on, or analysis of, fundamental social problems, so that the findings can be recommended to decision makers to act practically in solving problems.
The purpose of this research focus is to focus the objectives of this research so that it is more concentrated. With a research focus, the initiation of observations in research is more focused after being observed and analyzed. Moleong (2014), stated that the focus of research is intended to be an internal limitation so that relevant data can be determined. A more detailed description of the focus of this research is as follows:
Factors that support and hinder the effectiveness of natural disaster management policies in Banten. Especially in early warning pre-disaster management policies.
In the focus of this research, there are two sub-focuses as follows:
a. Supporting factors in the effectiveness of natural disaster management policies in Banten, especially pre-disaster management policies in situations of potential disasters in Tsunami early warning activities which include:
1) Adequate Human Resources
2) Well Maintained Infrastructure
3) Completeness of Infrastructure

b. Inhibiting factors in the effectiveness of natural disaster management policies in Banten, especially pre-disaster management policies in situations of potential disasters in Tsunami early warning activities, include:
1) The implementation of early warning applications has not been effective
2) Lack of Public Awareness of Early Warning
3) Lack of fast coordination between stakeholders in implementing Early Warning Disaster Management

Data collection

Data collection in this research refers to the opinion of Cresswell (2016) because it is in accordance with research needs. Data collection carried out by researchers is through unstructured or semi-structured interviews, observations, documents and visual materials to collect information.
In collecting data, researchers first determine informants who understand what will be researched. In accordance with the research objectives, researchers collect data in the form of documents or visual materials that can support research data.
The interview technique in this qualitative research is in-depth and unstructured or semi-structured interviews. Interviews are carried out on the basis of previously created guidelines so that the questions asked are quite focused and not too loose even though in practice there is question development. In determining informants, purposive sampling technique was used to obtain a representative sample of informants. The informants interviewed are those who are related and know about the information that will be asked, whether directly or indirectly, regarding the effectiveness of natural disaster management policies in Banten. In particular, pre-disaster management policies in situations with the potential for a disaster to occur, namely officers who prepare and implement policies at BMKG stakeholders, Ministry of Transportation, KKP, Regional Government, BNPB/BPBD, TNI/POLRI, Public Broadcasting Institutions and the community.
One of the techniques used to collect data is through observation to observe phenomena both physically and socially in accordance with real conditions. Aspects of human action as well as the effectiveness of disaster management policies are things to be observed. The observations carried out were structured observations. Sugiyono (2016) explains that structured observation is systematic and precise in observing what is observed, when and where. Observations were made in real conditions regarding the activities of stakeholders in carrying out their duties and roles when carrying out early warning pre-disaster management.

Data analysis

Data analysis techniques were carried out in this research to answer what was in the problem formulation. Creswell (2016) states that there are six stages in the qualitative data analysis process. (1) Researchers process data and prepare data for analysis. (2) The researcher reads all the data and reflects on its meaning as well as notes on general ideas from the data obtained, (3) The researcher carries out data analysis in more detail through data coding, (4) The researcher carries out descriptions of settings, categories, people and themes used, (5) The researcher shows writing a qualitative narrative or report to show a description of the data, (6) The researcher interprets the data.

Research Results and Discussion

Supporting factors in policy effectiveness Factors that support and hinder the effectiveness of pre-natural disaster management policies in implementing early warning in Banten

1. Adequate Human Resources

Based on the results of research regarding factors that support early warning policies in terms of human resources, both community and government, according to BMKG, BMKG human resources are well available, both in quantity and quality. Public awareness of BMKG information is also increasing and the Government provides full support for the programs organized by BMKG.
According to BPBD Baten, BPBD human resources are well available, both in quantity and quality. BPBD formed a team of volunteers to optimize human resource needs. Public awareness of BMKG information is also increasing. This is also supported by the statement by the Chief Executive of BPBD Cilegon City (RM) that there is support from all agencies, communities, CERT and in the process of forming a Tsunami Ready Community.
According to the Banten Province PUPR Service, the factors that support disaster management policies in terms of the availability and completeness of facilities and infrastructure are the completeness of facilities and infrastructure that are adequate and ready to be used if needed in disaster management. Such as rubber boats, heavy equipment, etc.
From other stakeholders, according to the TNI, TNI's human resources are adequate up to sub-district level, there are Babinsa in every sub-district. Meanwhile, according to the Banten Regional Police, the National Police is the easiest force to mobilize. The system spans control up to the sub-district level.
According to the Banten Province SAR Agency which is related to . factors that support the early warning policy in terms of human resources, both community and government, are that all agencies related to disasters support every activity carried out.
Meanwhile, according to the opinion of the public (RNI), the factors that support early warning policies in terms of human resources, both society and government, are various social media and electronic media.

According to public informants, the factors that support the early warning policy are in terms of human resources, both the community and the government. The BMKG social media admin is very responsive in answering public questions regarding information currently circulating in the community. So it can reduce the circulation of hoax news, because people can ask BMKG directly.
It can be concluded that the supporting factor for early warning policies in terms of human resources, both community and government, is the availability of good human resources from BMKG human resources, both quantity and quality as well as BPBD human resources and BPBD forming a volunteer team to optimize human resource needs. Public awareness of BMKG information is also increasing and human resources for the TNI and Polri are adequate at sub-district level.

2. Well Maintained Infrastructure

Based on the research results, the factors that support the Early Warning policy in terms of infrastructure maintenance are that financial support for equipment maintenance is always available. According to BMKG, financial support for equipment maintenance is always available.
BPBD Banten explains that the facilities and infrastructure are complete. Meanwhile, according to the Chief Executive of the Cilegon City BPBD (RM), the facilities and infrastructure provided by government agencies/institutions are supported by maintenance funds sourced from the APBN/APBD and from companies in the Cilegon City area.
According to the PUPR Department of Banten Province, the factors that support the PB policy in terms of maintenance of facilities and infrastructure are that maintenance of facilities and infrastructure is carried out using routine activity budgets that are always available.
According to the Social Service, the factors that support the Early Warning policy in terms of infrastructure maintenance are the existence of deconcentration funds from the Ministry of Social Affairs, and CSR funds from entrepreneurs.
According to Danrem Maulana Yusuf Banten, the factors that support the early warning policy in terms of maintenance of infrastructure are maintenance of facilities and infrastructure supported by an equipment maintenance budget. Every purchase of disaster management equipment is always followed by a maintenance budget. Meanwhile, from the Banten Regional Police, the factor that supports the early warning policy in terms of maintenance of infrastructure is the existence of contingency funds. Likewise, the Banten Province SAR Agency stated that the factor that supports the Early Warning policy in terms of maintenance of infrastructure is that there is funding for disaster education activities and maintenance of equipment and infrastructure.

3. Completeness of Infrastructure

Based on the results of research relating to factors that support early warning policies in terms of the availability and completeness of facilities and infrastructure, according to the Acting Deputy for Geophysics at BMKG (SPH), complete facilities and infrastructure are available, such as EEWS, WRS New Gen, BMKG Info Application, MHEWS, etc. . The leadership of the Banten BPBD (NS) and the Chief Executive of the Cilegon City BPBD (RM) also conveyed the same thing that complete facilities and infrastructure were available.
According to the Banten Province PUPR Service, the factors that support Disaster Management policies in terms of human resources are related to both the community and government, where the human resources of the Banten Province PUPR Service are always ready to carry out and support disaster management activities even without a task force team being formed and without a decree being issued. Meanwhile, the Banten Social Service is forming volunteers to form Tagana and there is deconcentration funding from the Ministry of Social Affairs.
Meanwhile, according to Danrem Banten (MY), the factors that support the early warning policy in terms of the availability and completeness of facilities and infrastructure are that the facilities and infrastructure are completely available. Especially in potential disaster areas, each Kodim is equipped with heavy equipment, rubber boats, equipment. health, and others. This is also supported by the Banten Regional Police's statement that the factors that support the early warning policy in terms of the availability and completeness of facilities and infrastructure are that complete facilities and infrastructure are available, such as control range systems, Comm Centers, Smart phones. Likewise, according to the Banten Province SAR Agency, complete facilities and infrastructure are available.

Inhibiting factors in policy effectiveness Factors that support and hinder the effectiveness of pre-natural disaster management policies in implementing early warning in Banten.

1. Ineffective Implementation of Early Warning Applications

Based on the research results, according to the Acting Deputy for Geophysics at BMKG (SPH), the factors that hinder the early warning policy in terms of the availability and completeness of facilities and infrastructure are if the internet network fails and the electricity goes out. According to BMKG, the implementation of early warning applications has not been effective. If radar/equipment shows the potential for extreme weather, then BMKG always releases PD information. This makes the early warnings released by BMKG too numerous/frequent so they are not exclusive.
Furthermore, the factors that hinder the ineffective implementation of early warning applications are that the early warning information provided by BMKG is very adequate. Various modes have been reached. For example

social media. However, this is because the early warning information delivered is not location-based (everyone gets the same information even though they live in different locations). This makes it less effective. People will only look for information/access social media when their area shows signs of extreme weather. Or when people are going to travel to an area.
From the Regional Police related to. Factors that hamper early warning policies in terms of the ineffective implementation of early warning applications are Comm. The center owned by the Banten Regional Police is more focused on monitoring road congestion.
From a community perspective related to factors that hinder early warning policies in terms of the ineffective implementation of early warning applications, namely early warning information can only be obtained by accessing social media or the BMKG info application. Some people don't know about social media
Based on the results of the interview, it can be seen that the obstacles to the early warning policy in terms of the ineffective implementation of the early warning application in Banten Province are internet network and electricity failures, there is often overlap in the provision of logistics with BPBD, the people of Banten are still stubborn and need to increase public education in maintaining equipment, the weather early warning information application installed by BMKG has not been utilized optimally to convey information on extreme weather early warning, early warning information can only be obtained by accessing social media or the BMKG info application.
In line with the results of the interview, in the Banten Province Community-Based Early Warning System Guidelines document, in disaster early warning, the community has the responsibility to: 1. Follow the directions issued by the institution responsible for providing disaster early warning; 2. Participate in early warning training activities in the community; 3. Provide appropriate information related to potential disasters that occur; 4. Maintain all installed resources and equipment to support the disaster early warning system; 5. Actively involve in disaster risk reduction efforts

In line with the results of observations, not all of the Banten coastal areas have been installed with an EWS (Early Warning System) to monitor sea water levels, as an early warning if a tsunami occurs. Then, there is only one tsunami shelter, in Labuan District, Pandeglang Regency and there is an EWS device that is not yet functioning optimally.

2. Lack of Public Awareness of Early Warning

Based on the results of research related to factors that hinder early warning policies in terms of lack of public awareness, according to the Acting Deputy for Geophysics BMKG (SPH) that public awareness of earthquake and tsunami disasters is necessary. With the large number of potential disasters in Banten province, the regional government still lacks focus on disasters. tsunami. However, BMKG continues to carry out approaches/auditions to regional governments to disseminate early warnings for earthquakes and tsunamis. This is also supported by the explanation by the Chief Executive of the Cilegon City BPBD (RM) that the factor that hinders the early warning policy in terms of human resources is that there is still a need for awareness from society as a whole.
According to Danrem Maulana Yusuf Banten, the factors that hinder the early warning policy are related to the background of the Banten community which is still stubborn, where public education is still needed and hard work is needed in maintaining equipment.
Another opinion related to the factors that hinder early warning policies in terms of public awareness is that there is still a lack of being able to actively seek out early warning information from the BMKG, namely that when early warning information is released, in general people will respond to stay away from the beach. For people who live on the coast, they already understand where to evacuate. The problem in general is that tourists are not familiar with the beach environment. They do not understand that there is an evacuation route that has been created by the local BPBD.
Meanwhile, according to the founder of the South Lebak Mitigation Cluster Community (AL), the factors that hinder the early warning policy are the location of South Lebak, which is far from the center of government and the various types of disasters in Lebak Regency, making the Government less focused on following up on the potential tsunami danger in South Lebak. BPBD has not provided support for activities carried out by the South Lebak mitigation cluster community, Lebak Regency BPBD is not involved in Tsunami ready community activities where BPBD should synergize in organizing these activities.
In line with the observations, the Banten Regional Disaster Management Agency (BPBD) has written to the BMKG, requesting that the EWS be repaired immediately. Regarding BMKG's earthquake detection equipment.
Based on the research results, it can be concluded that the obstacle to early warning policy in terms of lack of public awareness of early warning is that public awareness is still lacking to be able to actively seek out early warning information from the BMKG. People will only begin to become aware after a disaster occurs, so anticipating the impact of a disaster will be too late.

3. There is no structured and systematic coordination between stakeholders in implementing Early Warning Disaster Management

Based on the results of research related to factors that hinder early warning policies in terms of not having structured and systematic coordination between stakeholders, the amount of early warning information

conveyed by the BMKG is not immediately responded to with preparedness actions. Stakeholders will usually act after receiving validation information and verifying whether extreme weather is actually occurring. Meanwhile, according to the Banten Regional Police, there is no good coordination between regional government agencies. There are no Governor regulations yet. Meanwhile, according to the Banten Province SAR Agency, human resources are still very minimal, but they must be optimized. Based on research results, community awareness is still lacking regarding disasters. Moreover, communities whose areas do not have the potential for disasters.

According to the Founder of the South Lebak Mitigation Cluster Community (AL), the factor that hampers early warning policies in terms of maintenance of infrastructure is that early warning activities are not supported at all by village funds.

Based on the results of the interview, it can also be seen that the obstacle to early warning policy in terms of not having structured and systematic coordination between stakeholders is that there is no good coordination between local government agencies. There are no Governor regulations yet. Apart from that, stakeholders will also forward this information to areas that have the potential for early warning information, but stakeholders in general will continue to be on standby waiting for verification/validation of the veracity of the information. If there is no report/validation, then stakeholders have not taken preparedness action.

Conclusion

Supporting factors for the effectiveness of pre-natural disaster management policies in implementing Tsunami early warning in Banten are human resources from both community groups who have awareness of Tsunami early warning and stakeholders in government institutions, adequate in quality and quantity, well-maintained infrastructure and adequate infrastructure. complete. Inhibiting factors in the effectiveness of pre-natural disaster management policies in implementing Tsunami early warning in Banten are the ineffective implementation of early warning applications, lack of community activity in seeking information, and lack of structured and systematic coordination between stakeholders in implementing Early Warning Disaster Management.

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