

# Implementation the Kendari Regional Disaster Management Agency (BPBD) Function in Flood Disaster Management on the Wanggu River, Indonesia

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## Article History

Received: 31 July 2021

Revised: 27 February 2022

Published: 27 February 2022

## Abstract

This research aims to find out and describe the implementation regional disaster Management Agency ( BPBD) Kendari function in flood disaster management in the Wanggu River, Kendari. The research used a qualitative descriptive where data were collected using interviews, observation and documentation. Number Informants were ten people, and the data analysis technique consisted of data collection, data reduction, data presentation and conclusions/verification. The management of the Wanggu River flood disaster carried out by the Kendari City BPBD consists of 1) pre-disaster activities, 2) during a disaster (emergency response) and 3) post-disaster. The total indicators have been implemented quite effectively. Prevention and preparedness in pre-disaster have been carried out well. In the event of a disaster, all resources, equipment, logistics, and disaster management actions have been carried out properly, then in post-disaster, rehabilitation and reconstruction activities well done too. The Kendari local Government has also made various efforts to reduce the risk of flooding on the Wanggu River by building flood control retention from upstream to downstream, normalizing the river, improving drainage, and offering to relocate houses in the wilderness, which are currently still become problems.

**Keywords:** Disaster Management, Flood, River, Kendari

## Introduction

Disaster Management Law no.24 of 2007 is the basis for establishing the National Disaster Development Agency ( BNPB) which was established in 2008, and the Regional Disaster Management Agency ( BPBD) . This shows Indonesia's awareness and commitment to

**Citation Information:** Mustafa, F. , K, A. , Armada, L. , & Rustaman, L. ( 2021) . Implementation the Kendari Regional Disaster Management Agency ( BPBD) Function in Flood Disaster Management on the Wanggu River, Indonesia. *Asian Political Science Review*, 5(1), 42-50. <https://doi.org/10.14456/apsr.2021.9>.

disasters. Based on this, the Kendari City government issued Kendari City Regional Regulation No. 4 of 2011 concerning the Establishment of the Organization and Work Procedure of the Kendari City Regional Disaster Management Agency. With the issuance of Regional Regulations, it is hoped that they will become government guidelines and guidelines to overcome existing disasters. Kendari City is still an area that is prone to natural disasters. Identify the priority of a recurrent expenditure rule based on non-resource and non-grant revenue, that is interdependently determined by government debt and budget balance targets with predicted disaster shocks. This original fiscal rule is categorized as a natural disaster-resilient fiscal rule, and it offers a slew of new benefits above conventional fiscal laws. The third-generation fiscal rule is the name given to this new form of fiscal regulation. It takes into account natural catastrophes and climate change, relies solely on budget data, does not require escape clauses, and functions on a timely basis (Nakatani, 2021).

BNPB (2020) data shows the highest flood disaster incidence. Namely, in 2019 there were 1,276 flood disasters recorded. Then at the beginning of 2020, 429 incidents claimed 37 lives (dead and missing). This flood disaster in Indonesia was caused by several things, one of which was Indonesia's geographical factor. The position of the territory of Indonesia, which is on the equator and in the form of an archipelago, makes Indonesia have a high potential for various types of hydro meteorological disasters, one of which is the phenomenon of flooding. In addition, climate change conditions in Indonesia also contribute to an increase in hydro meteorological disasters (Bencana, 2017).

In Southeast Sulawesi itself, the flood disaster is also one of the severe problems faced by the community every year. It is known that there were several flood disaster points in 2019, including Kendari City, North Konawe, South Konawe, Konawe, East Kolaka, Bombana, and North Buton. The occurrence of high-intensity rain that flushed almost all areas of Southeast Sulawesi, starting from May to June 2019, made seven districts flooded. The impact of losses caused by the flood was not small. For example, in the North Konawe area, material losses are estimated at billions of rupiah, where damage to the agricultural, plantation, and fishery lands and residents' houses were flooded so that people were required to evacuate. Infrastructure buildings were also badly damaged by the floods. There were three broken bridges, and one connecting bridge between provinces (Southeast Sulawesi-Central Sulawesi) collapsed so that transportation access became isolated (Aksar, 2019). In Kendari City, the Wanggu River is one of the flood-prone points every year. Looking at flood event data for the past three years (2017-2019) in Kali Wanggu, Kendari City, it was recorded that the Wanggu river had experienced floods for three years in a row. In 2017, in April-June, there was a big flood due to the overflow of the Wanggu River, which caused damage to infrastructure, loss of property, and people were required to evacuate themselves. Then in May and June 2018, floods occurred again and caused significant losses. Finally, in 2019 last June, there was another flood disaster.

Meanwhile, in the middle of 2020, the Kendari City BPBD has still determined the Wanggu River as a flood-prone point so that monitoring is still being carried out (Heeryl, 2020). One of the main problems with the overflow of the Wanggu River is related to the increasingly volatile water discharge, wherein in the dry season, the water discharge is very low. In contrast, in the rainy season, the water discharge is very high, causing flooding in the middle and downstream areas. The cause of the overflow of the Wanggu Watershed (DAS) was caused by several factors, including the increasing number and activity of residents in the Wanggu watershed area both in the upstream and in the middle, the occurrence of land conversion from forest areas become agricultural land, mining area C and settlements, loss of function of mangrove forests due to deforestation, low public awareness not to throw garbage and industrial waste into rivers, and the implementation of regulations regarding the

prohibition of throwing garbage and waste into rivers has not been strictly enforced (Anindito, 2020).

Seeing various data on threats and damage due to flooding in the Wanggu River, Kendari City every year, of course, a strategic step is needed in efforts to overcome flood disasters. Regarding the implementation of the Kendari City BPBD in disaster management, especially the Wanggu river flood problem, the party that has the authority is the Kendari City Regional Disaster Management Agency (BPBD). To cope with the flood disaster in the Wanggu river area, of course, BPBD (Regional Disaster Management Agency) Kendari City, in addition to carrying out internal coordination of course, also carried out external coordination between related agencies, which includes the social sector (Kendari City Social Service), Health Sector (Kendari City Health Office), River basin hall, Public Works Sector (Kendari City Public Works Department), Cleaning Sector (Kendari City Sanitation Service), Police, and Indonesian Nation Armed Forces (TNI).

This study aims to determine the implementation of the functions carried out by the Kendari City BPBD in disaster management efforts. The authors take a legal basis that can be used as a guide and direction by BPBD in carrying out its function as one of the disaster management institutions, which is based on the Kendari City Regional Regulation No.2011 concerning the Establishment of the Organization and Work Procedure of the Kendari City Disaster Management Agency. Meanwhile, in the effort to overcome the Wanggu river flood, the researcher uses an explanation of the theoretical view of (Ulum, 2014) which describes disaster management policy activities into three stages, namely: 1) pre-disaster activities; 2) activities in the event of a disaster; and 3) post-disaster activities.

### **Research Questions**

The establishment of guidelines and directives by the central government's policies, the National Disaster Management Agency, and local governments have given to BPBDs has become one of the government's efforts in rapid and targeted disaster management. The function of BPBD is to assist the Kendari city government in disaster management in the city as BPBD is one of the institutions in the province/region as an extension of the central BNPB whose implementation has functions based on the legal basis of Regional Regulation No.4, Years 2011 consist of three parts: 1) Coordination, 2) Command, 3) Implementation. The coordination function as referred to is a BPBD function which is carried out through coordination with other regional work units, vertical agencies in the region, business institutions or other parties needed at the pre-disaster and post-disaster stages. The command function, as intended, is a BPBD function that carried out through the deployment of human resources, equipment, logistics from other regional work units, vertical agencies in the area, and other steps needed in the context of handling disaster emergencies. At the same time, the implementing function, as referred to, is a BPBD function carried out in a coordinated and integrated manner with other regional work units, taking into account policies for implementation, disaster management, and provisions of laws and regulations.

In Indonesia, the disaster management authority at the national level is mandated by the National Disaster Management Agency (BNPB) with the support of relevant Ministries/Institutions, such as the Ministry of Public Works and Public Housing, Ministry of Health, Ministry of Social Affairs, Ministry of Home Affairs, Indonesia National Armed Forces (TNI), Police, Search and Rescue Agency Help (BASARNAS), Meteorology, Climatology and Geophysics Agency (BMKG), Center for Volcanology and Geological Hazard Mitigation (PVMBG), and other relevant Ministries/ Institutions. Meanwhile, the Provincial, Regency, and City Regional Disaster Management Agency (BPBD) is responsible for disaster management at the regional level with the support of the relevant Regional Apparatus Organizations (Bencana, 2017).

In the Regulation of the Head of the National Disaster Management Agency (BNPB) No.4 of 2008 concerning Guidelines for Preparation of Disaster Management Plans, it is explained that: "Efforts or implementation of disaster management are a series of efforts that include the establishment of development policies that pose a risk of disaster, disaster prevention activities, emergency response, and rehabilitation". Meanwhile, according to Government Regulation Number 21 of 2008 in chapter 1 article 3 it is stated that: "the implementation of disaster management includes pre-disaster, emergency response, and post-disaster stages". In general disaster management or often referred to as disaster management can be divided into three main activities, namely: 1) pre-disaster activities, in the form of mitigation and preparedness activities; 2) Activities in the event of a disaster, in the form of disaster emergency response activities; and 3) post-disaster activities, in the form of disaster damage recovery activities (Ulum, 2014).

One of the problems in the disaster management process in Indonesia is that the mitigation that has been carried out so far has not been based on systematic and planned steps, so that there is often overlap, and even essential steps are not handled. Chairman BNPB No.4 of 2008 contains several stages of disaster management so that each activity in each stage can run with direction, including the following: 1) At the Pre-Disaster stage, where there is no disaster, a Disaster Management Plan is prepared, a general and comprehensive plan covering all stages/disaster work areas. In particular, for certain disaster prevention and mitigation efforts, there is a plan called a mitigation plan. At the Pre-Disaster stage, in situations where there is a potential disaster, a Preparedness Plan to deal with an emergency is prepared based on a scenario for dealing with a particular disaster (single hazard), a plan called a Contingency Plan is drawn up. 2) During an Emergency Response, an Operational Plan is carried out, which is the operation/activation of the Emergency Plan or Contingency Plan that has been prepared previously. 3) In the post-disaster stage, a Recovery Plan is prepared, which includes a post-disaster rehabilitation and reconstruction plan. Meanwhile, if the disaster has not yet occurred, the preparation of post-disaster management mechanisms/guidelines is carried out to anticipate future disaster events.

## Research Methodology

This research was carried out at the Kendari City Regional Disaster Management Agency (BPBD) office and residential areas on the banks of the Wanggu river, Kendari City. The research approach used in this research is qualitative (Taylor et al., 2015). The type of this research is descriptive qualitative research. Sources of data in this study came from primary and secondary data. The informants in this study were the Kendari City BPBD Acting, Kendari City BPBD Secretary, Kendari City BPBD Head of Prevention & Preparedness, Kendari City BPBD Head of Emergency & Logistics, Kendari City BPBD Logistics Rehabilitation & Reconstruction Division Head. And Community victims of the flood disaster of the Wanggu River, Kendari City. Data collection techniques are observation, interviews, and documentation, while the interactive model data analysis techniques consist of data collection, data reduction, data presentation, conclusion drawing/verification (Bungin, 2009).

## Research Results

When compared to real site conditions, the degree of compatibility of landslide-prone maps in Kendari City reaches 75%, the mapping of regions sensitive to floods, especially in urban areas, to the resilience strategy chosen as one of the city's disaster resilience efforts. The area with a high risk of fire is one with a high building density and flammable materials that is not traversed by an arterial or collector road. The fire station should be placed near a major fire region, on a main roadway, and near a potential water source (Saleh & Setiadi, 2020; Sejati et

al., 2020; Taridala et al., 2017). The Wanggu River is one of the rivers that drain much water during rainy and dry seasons. This is because the headwaters of the Wanggu River (Wolasi Mountains) are still beautiful, thus providing a large amount of water. The upstream area of the Wanggu river is an area that is still well preserved until now. Lepo-Lepo Village is an area in Kendari City that is crossed by the Wanggu River, emptying into Kendari Bay. In the rainy season, this river has a significant enough potential to overflow. Based on map data of areas prone to floods and landslides in the city of Kendari, Lepo-Lepo, located in the Wanggu Watershed (DAS), is one of the villages that often experiences flooding from year to year when the rainy season arrives, both with high and low-intensity areas. This river flow (DAS) is one of the locations affected by flooding and can be said to be the worst flood in Kendari City.

The Sungai Wanggu Village in Lepo-Lepo Village, Baruga Subdistrict, Kendari City, is an area that is regularly flooded, even with a flood height of up to 2 meters which drowned approximately 200 families who live in the area with permanent housing conditions, the Kendari City Government has taken steps anticipation of the rainy season. Even the discourse on relocating, for residents who are flooded, such as around the Wanggu riverbank, Lepolepo, Baruga Sub-district, but the bid for relocation has not received a good response from the local community. They are reluctant to move because almost the average house is located on the riverbank. have a permanent building texture and other considerations. The Wanggu River, which controls a watershed area of 339.73 km and also has several tributaries that empty into the Wanggu River, causes the river to overflow when it rains with high intensity quickly. The Wanggu Watershed (DAS) is one of the priority watersheds in Southeast Sulawesi. Besides having a hydrological function as the main source of sediment that causes silting of Kendari Bay. The Wanggu watershed is divided into two autonomous regions, namely Kendari City (26.38%) and South Konawe Regency (73.62%), with a total area of 33,208 hectares. The downstream area of the Wanggu watershed is Kendari City, while the upstream area is South Konawe Regency. So far, the management of the Wanggu watershed has been regulated by each autonomous region with different rules.

### **Kendari Wanggu River Flood Disaster Management**

There are many ways to control flooding that can be done to overcome flooding in the Wanggu river area of Kendari City. Flood prevention is a form of control in order to minimize flood disasters that occur. However, no one knows when a disaster will occur, and no one can prevent or hinder the occurrence of floods. In the construction of the discussion on this indicator, the researcher divides the discussion of flood disaster management carried out by the Kendari City BPBD by looking at the aspects of prevention and preparedness. The community's problems choice of settlement places is impacted by variables such as ease of access to a source of livelihood, and they choose locations along the shore. This is also owing to the limited amount of accessible land. Fishermen settlements on the coast have traditionally been able to adapt to natural circumstances, but due to a lack of adequate planning, the settlement environment has grown increasingly slumlike, resulting in additional social issues such as health, social environment, and discomfort (Syaf et al., 2021).

#### **a. Prevention**

From the research results conducted by researchers by conducting a series of interviews, the implementation of disaster management is marked by routine Monitoring and preparedness in disaster risk management, mapping of disaster-prone locations, and the implementation of socialization by the Kendari City BPBD. It monitored disaster-prone locations regularly to reduce the risk of flood disasters. Monitoring is carried out routinely by maintaining monitoring posts by the BPBD task force and checking in disaster-prone areas. From the interview results, it can be interpreted that the Kendari City Regional Disaster Management Agency in pre-disaster activities has carried out monitoring activities on flood-prone

locations regularly in accordance with the proportion of authority given and as programmed every year. In addition, disaster risk prevention is carried out through Monitoring carried out by a task force team formed by the Head of BPBD who is assigned to flood-prone points, especially in the Wanggu river area by occupying guard posts at each disaster-prone post by taking turns guarding the post through routine monitoring carried out around three times in 1 month.

Based on the results of interviews that the Kendari City Regional Disaster Management Agency, in addition to carrying out many flood disaster prevention activities, also pays attention and considers the risk of flood disasters by coordinating and reporting the results of studies on flood control efforts in the area, such as inadequate drainage construction in the Lepo-Lepo area, flood control retention ponds from upstream to downstream, normalization of rivers, and also relocation of residents' houses. From a series of interviews conducted by the author, it can be concluded that from the aspect of prevention in the pre-flood stage carried out by the Kendari City BPBD, the BPBD has been running quite effectively, not only by monitoring flood-prone areas but also by conducting disaster socialization and education to the surrounding community, build evacuation signs, coordinate and report the results of studies on flood control efforts in the area such as construction of inadequate drainage in the Lepo-Lepo area, flood control retention ponds from upstream to downstream, normalization of rivers and also relocation of residents' houses.

Preparedness is the preparation of a plan to act when a disaster occurs or is likely to occur. Planning consists of assessing needs in an emergency, identifying available resources to meet those needs, and education and training activities. This planning can reduce the adverse impact of a threat. Building preparedness is an important element, but it is not easy because it involves mental and cultural attitudes and discipline in the community. Preparedness is the most strategic stage because it determines the resilience of community members in the face of a disaster such as a flood. From the information obtained by the researchers, the preparedness of the residents in the Wanggu River was built through outreach activities or outreach to the community. This is carried out to provide understanding to the community and children about what to do if a flood disaster arrives. Flood disasters that will occur, especially in flood-prone areas in Kendari City, include the Wanggu River. This preparedness activity is carried out to anticipate the occurrence of flood disasters. Apart from socialization activities for BPBD, in this case, the Prevention and Preparedness Sector also makes a planning program, namely a Contingency Plan, by forming a quick reaction team (TRC). Contingency planning is also referred to as a process of planning in uncertain circumstances.

Regarding the preparedness response in flood disaster management in the Wanggu river area, the Regional Disaster Management Agency (BPBD) will form a Rapid Response Team (TRC) on duty in the Kali Wanggu Watershed. At almost all points, the team, in this case, the Rapid Response Team, will not reach all affected areas so that the disaster preparedness groups formed by the BPBD in each sub-district will become BPBD partners in flood disaster management. The Kendari City BPBD has carried out its duties quite effectively. The BPBD has formed a disaster preparedness group in the Kali Wanggu river area, then formed a Rapid Response Team (TRC) who served in the Kali Wanggu watershed, then carried out socialization involving the sub-district government and local communities.

### **When There Is Flood Disaster**

In the event of a flood disaster, the Kendari City Regional Disaster Management Agency (BPBD) carries out disaster management tasks in two ways: Emergency Response and Flood Disaster Management, which have been regulated in the SOP for coordination of disaster management. In emergency response and flood disaster management, the Regional Disaster Management Agency coordinates with relevant agencies. Based on the results of the interview, it is described that the emergency handling of the flood disaster in the Kali

Wanggu area was carried out by the Kendari City Regional Disaster Management Agency by involving several institutional units or Stake Holders and other volunteers in carrying out evacuations, distribution of food logistics and medicines, the establishment of emergency tents, kitchens, and other operational actions. The Regional Disaster Management Agency also coordinates all units involved in flood disaster management times. Canggu Disaster emergency response is a series of activities carried out immediately at the time of a disaster event to deal with the adverse effects caused. Based on the information collected, the researcher obtained information that one of the emergency response instruments carried out by the Kendari City Regional Disaster Management Agency was through stages such as coordinating the institutions involved in the evacuation of flood victims. Based on the interviews, the Kendari Regional Disaster Management Agency in emergency response activities, namely coordinating the institutions involved in disaster management in carrying out evacuations, distribution of food and medicine logistics, the establishment of emergency tents, and public kitchens, and other operational actions.

In this context, after the flood disaster, the role of the Kendari City Regional Disaster Management Agency is seen by carrying out rehabilitation and reconstruction activities to restore the daily routine of every citizen affected by flooding in the Kali Wanggu river area.

**Rehabilitation** Carrying out rehabilitation after the flood disaster, the Kendari City Regional Disaster Management Agency usually collects psychosocial data to determine the level of the trauma of each flood disaster victim. Based on the results of the interview, it is illustrated that the rehabilitation activities carried out after the flood in the Wanggu river area include repairing and recovering all damage caused by the flood disaster in the Wanggu river area, which is carried out through data collection by the Kendari City Regional Disaster Management Agency carried out continuously through coordination with related units and also collect data on victims. Rehabilitation is improving and restoring all aspects of public or community services to an adequate level in post-disaster areas. Therefore, the Kendari City Regional Disaster Management Agency conducts trauma healing to restore victims who have been traumatized by the flood disaster. After the flood disaster occurred in the Wanggu river area, the first thing carried out by the Kendari City BPBD was social rehabilitation by assisting flood victims. This is done to heal the trauma experienced by the victim and then clean the residents' houses. This rehabilitation activity is intended to restore the psychological function of the community after the flood disaster, on the other hand, to try to return to normal all aspects of community life in the Wanggu riverbank area after the disaster. Disaster. So it can be concluded that the Kendari City Regional Disaster Management Agency not only restores site conditions from the impact of the flood disaster but also carries out social rehabilitation to restore the psychological condition of flood victims quite effectively.

Reconstruction is the rebuilding of all facilities and infrastructure, residents' houses in post-disaster areas, with the main target being the growth and development of economic, social, and cultural activities. In this reconstruction, the Kendari City Regional Disaster Management Agency first conducted field observations and collected data to identify the extent of the physical damage caused by the flood disaster so that they could then draw up a reconstruction plan according to the needs of residents. After knowing what was needed to rehabilitate the physical damage, the Kendari City Regional Disaster Management Agency communicated this to related parties, starting from community leaders to the Local head village. From the results of the interview, it is known that the Kendari City Regional Disaster Management Agency has carried out its role quite effectively in the post-flood period, which can be aimed at the rehabilitation stage, restoring the psychological condition of flood victims. At the reconstruction stage, the Kendari City BPBD has also helped the local community to clean the residents' dwellings from the remnants of the flood and help evacuate

valuables that the local community has for safekeeping in places that are not affected by flooding. Flood dikes and river normalization efforts should be combined. With a B/C Ratio of 1,74, this combination may completely exclude flood inundation (Deby et al., 2019). The disaster level in the west of China is the most severe, followed by the center area and the eastern region, according to the comparison with Kendari. The disaster intensity of the provincial administrative districts can be divided into four classes based on the corresponding relationship between the absolute and relative disaster indexes: the first class has both large absolute and relative disaster indexes, the second class has a large absolute index but a small relative index, and the third class has a small absolute index. The findings of the evaluation, which matched the real local disaster condition, demonstrate that the disaster index evaluation method is useful and appropriate for assessing regional disaster intensity (Yuan, 2011).

## Discussion and Conclusion

The management of the Wanggu River flood disaster in Kendari which the Kendari BPBD carried out after being reviewed based on research instruments, namely pre-disaster indicators, during the disaster and post-disaster, all indicators have been implemented quite effectively, prevention and preparedness during pre-disaster have been carried out with quite good, then at the time of the disaster to mobilize all resources, equipment, logistics, and rescue actions for disaster management have been carried out quite well. In the post-disaster rehabilitation and reconstruction activities have been carried out quite well too. This study uses qualitative methods that rely on data sources only from a few informants. Of course, it will not be satisfactory for researchers who are engaged in quantitative research. In the future, it is recommended to carry out further research using a different research approach.

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