

# **Disaster Mitigation Management By The Regional Disaster Management Agency (BPBD) In Management of Drought Disaster In West Lombok District**

**Selamat Jalaludin**

Institut Pemerintahan Dalam Negeri  
E-mail: jallaludin@ipdn.ac.id

## **ABSTRACT**

*Drought is a natural disaster that can result in reduced water availability which is far below needs. West Lombok Regency is one of the districts in NTB Province that is prone to drought. Based on BPBD data from 2019 to 2021, there are six sub-districts that experience drought every year in West Lombok district. The aim of this research is to examine drought disaster mitigation management in West Lombok Regency. The research method used in this research is a qualitative research approach in analyzing the problems that have been determined. The type of data used is descriptive qualitative data. This research uses George R. Terry's management function as a reference. Based on the research results, the West Lombok Regency BPBD is still encountering obstacles or problems, namely related to organizing, actuating and also monitoring (controlling) the drought disaster in West Lombok Regency. Therefore, when one of the indicators of these management functions is not fulfilled, then the drought disaster mitigation management carried out by the West Lombok BPBD will not be optimal. Supporting BPBD activities consists of internal factors, namely from BPBD and external factors from communities outside BPBD. The inhibiting factors that hinder BPBD activities are 3 aspects, namely road access to the affected areas is still inadequate, the budget for carrying out activities and equipment for implementing the program is still inadequate.*

**Keywords: Disaster, Drought, West Lombok, Management, Mitigation**

## **A. INTRODUCTION**

Indonesia is a country that is prone to disasters because geographically Indonesia is located between two oceans, namely the Indian and Pacific Oceans. Indonesia is also an archipelagic country that has a tropical climate with two seasons, namely the dry season and the rainy season. Irregular seasonal changes such as prolonged dry seasons can cause drought in several regions in Indonesia (Prasetyo, 2018).

Drought is a natural disaster that can result in a reduction in water availability that is far below needs, both for living needs, agriculture, economic activities or the environment. Drought can occur as a result of El-Nino symptoms which result in decreased rainfall in Indonesia. The impact of El-Nino not only affects the decrease in rainfall but also causes the rainy season to delay, thereby extending the dry season (Trianasari, 2009).

West Lombok Regency is one of the districts in NTB Province that is prone to drought. West Nusa Tenggara (NTB) Province is one of the provinces in Indonesia with low rainfall and groundwater availability. The average annual rainfall in the NTB region only reaches 1900 mm and the length of the rainy season is quite short, only 4 (four) months (Yasin, et al., 2004).

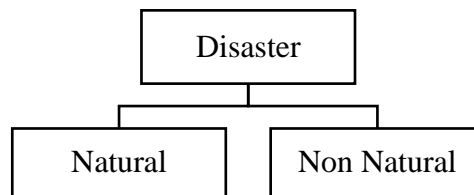
Based on West Lombok Regency BPBD data from 2019 to 2021, there are six sub-districts that experience drought every year in West Lombok Regency. The sub-districts that are hit by drought every year are Sekotong Sub-district, Sheet Sub-district, Gerung Sub-district, Kuripan Sub-district, Gunungsari Sub-district and Batu Layar Sub-district.

The drought disaster in West Lombok Regency has caused huge losses to the community, therefore efforts are needed that can reduce the risk of the drought disaster, including by carrying out disaster mitigation. Disaster mitigation according to Law no. 24 of 2007 concerning disaster management, namely: "Disaster Mitigation is a series of efforts to reduce disaster risk, both through physical development and awareness and increasing capacity to face the threat of disaster." This mitigation will involve all related parties, both the community and the government.

Seeing the problems related to drought disasters, especially in West Lombok Regency, which always occur in the same location every year, it is appropriate that the implementation of disaster mitigation needs to be maximized to prevent threats and minimize the risk of disasters in the coming year. Therefore, the author is interested in research related to drought disaster mitigation management in West Lombok Regency.

## B. LITERATURE REVIEW

Based on Republic of Indonesia Law Number 24 of 2007 concerning Disaster Management, a disaster can be defined as an event or series of events that threatens and disrupts people's lives and livelihoods caused by both natural and non-natural and human factors, resulting in human casualties, environmental damage, property loss and psychological impact.



Based on Law Number 24 of 2007, the types of natural and non-natural disasters are described. Natural disasters are defined as disasters caused by an event or series of events caused by nature, such as earthquakes, tsunamis, volcanic eruptions, droughts, floods, hurricanes and landslides. Meanwhile, non-natural disasters are disasters caused by non-natural events or series of events such as technological failure, modernization failure, epidemics and disease outbreaks.

Disasters are a consequence of a combination of natural activities, both physical events such as mountain eruptions, earthquakes, landslides and human activities due to poor preparedness management and emergencies causing financial and structural losses, even death. Natural disasters can also be interpreted as disasters that are very natural and usually occur on earth, but only when these natural phenomena affect humans (loss of life) and all agricultural products (possession of property) can we call it a disaster (Kodoatie and Sjarief, 2009 ).

Drought is a situation of lack of water supply in an area for a prolonged period (several months to years). Drought usually occurs when an area continuously experiences below average rainfall. Drought is an event where water is scarce in an area at a certain time and is caused by certain events. Dryness can occur naturally or due to humans. Droughts that occur naturally are divided into four, namely meteorological drought, hydrological drought, agronomic drought and socio-economic drought (Surya and Suwetha, 2021).

Drought can have many adverse effects on communities and the surrounding environment. In connection with this opinion, it can be explained that the number of droughts depends on the strength of the drought and the length of time an area experiences drought.

Based on its parameters, according to Wilhite (2010), drought is divided into three groups, namely:

- a. Meteorological drought, defined as a lack of rain from normal conditions in a certain period
- b. Agricultural drought is characterized by a lack of soil moisture parameters and is also related to crop production.
- c. Hydrological drought, defined as a shortage of surface and groundwater supplies in the form of water in lakes, reservoirs, rivers and groundwater levels.

Disaster management is a science that studies disasters and all aspects related to disasters, especially disaster risks and how to avoid disaster risks. Disaster management is a dynamic process regarding the operation of management functions which include planning, organizing, actuating and controlling (Nurjanah et. al, 2013).

According to Nurjanah et al. (2013), disaster management activities can be divided into three phases or stages, namely:

1. Pre-Disaster

Implementation of disaster management at the pre-disaster stage includes situations where a disaster does not occur and in situations where there is a potential for a disaster to occur. Non-disaster situations include disaster management planning, disaster risk reduction, prevention, guidance in development planning, requirements for disaster risk analysis, implementation and enforcement of spatial planning, education and training, as well as technical requirements for disaster management. Meanwhile, in situations where there is the potential for a disaster, activities that can be carried out are preparedness, early warning and disaster mitigation.

2. Emergency Response

Organizing disaster management during a disaster emergency response includes a quick and precise assessment of the location, damage, losses and resources; determining the status of a disaster emergency; rescue and evacuation of disaster-affected communities; fulfilling basic needs; protection of vulnerable groups; restoration of facilities and infrastructure.

### 3. Post Disaster.

After a disaster occurs and the emergency response period is completed, it is hoped that disaster victims will return to their original homes where they live. This can be done through rehabilitation activities, namely activities aimed at restoring the condition of disaster-affected areas.

Mitigation is efforts or efforts made consciously to reduce the impact of a disaster, whether physical impact reduction can be in the form of physical buildings that are able to minimize the impact of a disaster. Non-physically, it can take the form of emphasizing the negative impacts of disasters through legislation and training related to disasters or it can take the form of education, providing sanctions and rewards, counseling and provision (Yuhanah, 2014).

Mitigation efforts for disaster risk according to Suprayitno & Soemitro (2019) can be realized in three ways, namely:

#### a. Mitigation efforts to avoid disaster risks:

Implementing efforts to avoid disaster risk can be done by avoiding disaster-prone areas, thereby avoiding the threat of physical and non-physical loss.

#### b. Mitigation efforts to face disaster risk:

Implementation of mitigation efforts when dealing with disaster risks can be done by minimizing the threat of disasters by increasing the strength of infrastructure in order to minimize damage to infrastructure due to disasters.

#### c. Mitigation efforts shift from disaster risk: A form of effort to recover from disaster risk can be done by using insurance services.

## **C. RESEARCH METHODS**

The research method used in this research is a qualitative research approach in analyzing the problems that have been determined. The type of data used is descriptive qualitative data. The data sources used are primary and secondary data. Data collection techniques were carried out by means of observation, interviews and documentation. The subjects of this research are the West Lombok Regency BPBD and communities affected by drought.

## **D. RESULTS AND DISCUSSION**

These results and discussion describe the problems in the research by describing and analyzing data originating from observations, interviews, and supporting data that has been

obtained directly from the field related to Drought Disaster Management in West Lombok Regency by BNPB Central Lombok.

This research uses George R. Terry's management function as a reference in determining the extent of disaster mitigation management by the regional disaster management agency (BPBD) in overcoming drought disasters in West Lombok Regency. The George R. Terry model has four benchmarks that can measure whether the objectives have been achieved or not. Drought disaster mitigation in West Lombok Regency includes planning, organizing, acting, monitoring.

### **1. Planning (Planning)**

Planning according to George R. Terry in Dallas et al. (2020), is the selection and connection of estimates or assumptions for the future by describing and formulating the activities needed to achieve the desired results. The benefits of planning are directing organizational activities which include the use of resources and their use to achieve organizational goals, establishing consistency in the activities of organizational members so that they are in line with organizational goals, and monitoring organizational progress.

Based on the results of observations and interviews, it can be seen that planning has been carried out by BPBD West Lombok Regency, namely by analyzing and identifying areas prone to drought disasters every year and also by creating a drought disaster alert status so that it can be seen which areas are still affected by drought and require handling from BPBD. . As stated by Harsono (2010), good planning will of course produce good performance.

Apart from that, West Lombok Regency BPBD also has an operational plan and is making various efforts to mitigate this drought disaster, both structural and non-structural mitigation. Furthermore, West Lombok Regency BPBD also has a budgeting plan, where the budgeting is prepared through the government and several communities such as PMI, SOCIAL OFFICE, BANK NTB and others. West Lombok Regency BPBD also specifically budgets for disaster management and if there is a budget shortfall, it can use BTT (Unexpected Expenditure) funds. This is in accordance with what Amirullah (2015) said, that the main activity in the first planning is setting work goals and targets.

### **2. Organizing**

Organizing according to George R. Terry in Dallas et al. (2020), is the determination, grouping and arrangement of various activities needed to achieve goals, placement of people (employees), provision of physical factors suitable for work needs and appointment of

authority relations delegated to each person in each in relation to the implementation of each expected activity. Organizing is carried out to collect and arrange all necessary resources, including humans, so that the desired work can be carried out successfully.

Based on the research results, it can be seen that the organization of the West Lombok Regency BPBD has been carried out quite well. This is proven by the division of work in disaster management at BPBD Central Lombok Regency, where the formation of the disaster management organizational structure is divided into several different areas, namely the Prevention and Preparedness Sector, the Emergency and Logistics Sector and the Rehabilitation and Reconstruction Sector.

Disaster management carried out by each sector in the Central Lombok BPBD is in accordance with the mechanisms and duties of each sector itself. Coordination between agencies within BPBD is also good. This is proven by each field having its own head of field who can act as a representative to convey information so as to facilitate collaboration between institutions to carry out disaster management.

Meanwhile, as an effort to mitigate disasters in West Lombok Regency, the West Lombok BPBD has not yet formed a special organization or institution outside the BPBD organizational structure itself. BPBD is still the main coordinator for every drought disaster management in West Lombok Regency, and in its activities it is only assisted by social organizations outside BPBD such as PMI, DAMKAR, POLRES, PDAM. However, BPBD itself does not or does not yet have a special organization to mitigate disasters, especially drought in West Lombok Regency.

### **3. Implementation (Actuating)**

Implementation according to George R. Terry in Dallas et al. (2020) is to inspire and encourage all group members to try hard to achieve goals sincerely and in harmony with the planning and organizing efforts of the leadership. The implementation carried out by the West Lombok BPBD is quite good although it still encounters several obstacles. BPBD's movement in dealing with drought disasters has been carried out as optimally as possible, for example by providing continuous water dropping programs, and providing assistance with water storage equipment in the form of reservoirs and buckets. Apart from that, the West Lombok BPBD also often provides outreach to communities affected by drought as well as always dropping clean water because areas affected by drought are quite difficult to provide water sources for.

The implementation of drought disaster mitigation activities in West Lombok Regency by the West Lombok BPBD also still meets various obstacles. As we can see in this implementation, almost every affected area is affected again every year and it is still difficult to find clean water sources due to the location of the area itself. The condition of the roads to access several areas is also the reason why this implementation is less than optimal so that it cannot fulfill the shared goals that have been set. According to the West Lombok BPBD, the roads leading to several locations have quite high inclines, making it difficult for cars carrying clean water supplies to drop water.

#### **4. Supervision (Controlling)**

Supervision according to George R. Terry in Dallas et al. (2020) is the process of determining what must be achieved, namely standards, what is being done, namely implementation, assessing implementation, and if necessary, making improvements so that implementation is in accordance with the joint plan or in line with standards. The results of this supervision will then be used as material for management, in this case making decisions for the formulation and planning of further activities. The supervision carried out by the West Lombok BPBD in mitigating drought management in West Lombok Regency has not been implemented optimally, where the BPBD always reports activities but still does not provide enough exposure to the public, for example through websites or through social media which should be able to help the public access information easily.

Apart from that, mitigation monitoring in terms of evaluation has also not been carried out optimally. This can be seen from the same handling program every year, namely only providing clean water dropping assistance, so that there are no significant changes in any activities carried out. Therefore, further evaluation needs to be carried out so that a solution can be obtained on how to at least reduce drought in West Lombok Regency.

#### **5. Supporting Factors**

Supporting factors that encourage West Lombok Regency BPBD disaster management arise from internal and external sources. An internal factor that supports the performance of BPBD Central Lombok is the existence of SOPs regarding disaster management at BPBD West Lombok. Based on the results of observations and documentation, it can be seen that the existence of SOPs regarding disaster management in West Lombok Regency facilitates and supports disaster mitigation management by the West



Lombok BPBD. The guidebook contains everything related to the duties and functions of the West Lombok BPBD as well as procedures for disaster management.

External supporting factors are factors that come from outside the BPBD itself. The external factor that supports West Lombok BPBD is the assistance from several communities who at any time help BPBD to carry out disaster management activities. Based on the results of the interviews, it can be seen that communities or organizations that always help West Lombok BPBD activities include PMI, DAMKAR, POLRES, PDAM, SOCIAL SERVICES, and BANK NTB.

## **6. Inhibiting Factors**

Inhibiting factors that become obstacles to implementing activities are based on weaknesses in disaster management according to research by the National Safety Council, Carl Griffith, National Safety Council Utilities Division Manager in Ramli (2010), which explains several factors that can cause disaster management system failure in an organization, namely lack of support, top management, lack of employee and community involvement and support, and little or no planning.

Based on the results of research that has been carried out, the West Lombok Regency BPBD has made various efforts in terms of planning and implementing disaster mitigation. However, there are several factors that hinder the implementation of West Lombok Regency BPBD activities. The first factor is that road access to the affected area is still difficult to reach so that clean water dropping has not been carried out optimally. According to the West Lombok BPBD, road access for water dropping must pass through many inclines and the road conditions are not good, so there are not many operational cars that can carry out water dropping to areas affected by drought.

The second factor is that there is still a lack of budget to carry out treatment because there are many affected areas and BPBD has not used Indirect Expenditure (BTL) funds. Due to the difficulty of access to the location and the large number of hamlets in each sub-district affected, BPBD had to spend quite a lot of money to carry out water dropping activities. However, the BPBD budget is still insufficient to fulfill drought mitigation activities in West Lombok. The third factor is that equipment or equipment for emergency response is still inadequate. One of the mitigation efforts to face disaster risks is by increasing the strength of infrastructure in order to minimize damage to infrastructure due to disasters. However, West Lombok BPBD cannot increase the strength of facilities and infrastructure because the budget is basically unable to meet disaster management needs.

## **E. CONCLUSION**

West Lombok Regency BPBD has made various efforts related to drought disaster mitigation. BPBD West Lombok is still encountering obstacles or problems, namely related to organizing, implementing (actuating) and also monitoring (controlling) the drought disaster in West Lombok Regency. Therefore, when one of the indicators of these management functions is not fulfilled, then the drought disaster mitigation management carried out by the West Lombok BPBD will not be optimal. This is proven by the absence of other programs apart from dropping clean water to reduce the number of droughts that occur in West Lombok Regency.

Supporting factors for BPBD activities consist of internal factors, namely from BPBD and external factors from communities outside BPBD. The inhibiting factors that hamper BPBD activities are 3 aspects, namely road access to the affected areas is still inadequate so water dropping has not been carried out evenly. The second aspect is that the budget for carrying out activities is still inadequate so that the BPBD cannot continue existing programs. The third aspect is that the equipment to implement the program is still inadequate.

## **F. SUGGESTION**

1. There is a need to form a special team to carry out evaluations outside the fields that are structured in the BPBD organizational structure such as the Destana (Disaster Resilient Village) group.
2. Continuous evaluation needs to be carried out, especially regarding the efficiency of using clean water from the water dropping program so that water can be utilized as well as possible.
3. It is necessary to create an early warning system for drought disasters, for example by actively providing information to the public regarding information about the upcoming dry season.

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