



## DISASTER RESILIENT VILLAGES AS A LEVEL FOR TSUNAMI PREPAREDNESS

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### ABSTRACT

*Indonesia's geographical location which is located between three plates makes Indonesia a country that is prone to disasters, one of which is the threat of a tsunami disaster. Tulungagung, which is located on the southern coast*

*of the island of Java, is one of the areas prone to tsunamis. The new disaster management paradigm is focused on efforts to reduce disaster risk (DRR). Strengthening village capacity by creating a Disaster Resilient Village (DESTANA), is one of the effective efforts to reduce disaster risk. The purpose of this study was to provide an overview of the readiness of the Besole hamlet, Tulungagung Regency. The research method used is descriptive*

*research by collecting the results of in-depth interviews with the DESTANA community activists in Besole hamlet, Tulungagung Regency. The results obtained from this study were participation, the Besole Village community*

*was involved from the beginning, namely from the start of preparation for the establishment of the DESTANA by conducting disaster risk studies, making evacuation route maps, determining gathering points, as well as installing and maintaining early warning system tools. For the role of participation, there is no sustainability in the community, readiness is good and management is good.*

**Keywords:** Disaster Resilient Village, Tsunami

### INTRODUCTION

#### Background

Tsunamis can be triggered by earthquakes, landslides, volcanic processes, meteorological events, and asteroid impacts. Earthquakes, and especially megathrust earthquakes in subduction zones, are the main cause of the largest tsunamis (Basili et al., 2021). Based on the tsunami trigger, the geological condition of the Indonesian Archipelago which is influenced by the interaction of three plates, namely the Indian-Australian Plate, the Eurasian Plate and the Pacific Plate (Handayani et al., 2018), makes Indonesia a country prone to tsunami events.

Areas directly bordering the Indian Ocean are at risk of earthquakes and thus the potential for tsunamis. Tulungagung Regency is one of the areas on the southern coast which is located at the confluence of the Indo-Australian plate and is one of the areas on the island of Java that is prone to tsunamis (Budisusanto et al., 2019). The high risk of a tsunami occurring in the Tulungagung area must be accompanied by the preparedness of the Tulungagung community in facing this disaster, so that it can reduce the risk due to disaster events (Dewi: 2019).

The results of the initial survey conducted by Dewi (2019), illustrate that the preparedness of Tulungagung district health centers is still in the under-prepared category

with an index figure of 58.5% in 2019. Therefore, participation from all parties is needed to increase preparedness in the area, one of them is by strengthening preparedness in villages by building Disaster Resilient Villages.

According to the Regulation of the Head of the National Disaster Management Agency (BNPB) Number 1 of 2012, a Disaster Resilient Village (DESTANA), is a village that has the independent ability to adapt and face the threat of disaster, and recover immediately from the detrimental impacts of a disaster, if a disaster occurs (BNPB: 2012). DESTANA, according to the definition in the regulations above, boils down to 3 main roles, namely the role of participation, management and preparedness. Optimization of DESTANA's role is a preparedness lever.

This research aims to describe DESTANA's preparedness facing the tsunami disaster seen from the roles mentioned above.

## **METHOD**

This research is a descriptive study conducted on the entire population of the DESTANA activist group regarding the role of participation, management and preparedness in Besole hamlet, Tulungagung Regency. Data was obtained using a questionnaire that refers to the Regulation of the Head of the National Disaster Management Agency Number 1 of 2012 concerning General Guidelines for Disaster Resilient Villages/Subdistricts and in-depth interviews.

## **RESULTS AND DISCUSSION**

### **Participation**

The results of the research show that the level of community participation in risk reduction in

the DESTANA application is that activities have been carried out in the form of preparing a disaster risk assessment followed by outreach to the community, making maps and routes.

Evacuation and refugee camps, as well as the creation and maintenance of an early warning system (EWS). Meanwhile, activities that have not been implemented are activities in the form of training aimed at increasing the disaster management capacity of village officials, volunteers and the community on a regular basis as well as regular emergency preparedness and response simulations.

According to SP, one of the FPRB members, until now there are no more activities for capacity building and preparedness simulations. In fact, this activity is very important. Considering that the growth and dynamics of the population in Besole Village is always developing, meanwhile the threat of a tsunami disaster is always there. From the results of interviews with the DESTANA management, represented by the chairman of the DESTANA management, Besole Village, Sumarianto, he explained that since the beginning of the formation of DESTANA, disaster risk studies had been carried out in the Besole village area involving various elements of society. Meanwhile, the results of this risk study are also disseminated to the public. The community is involved in making evacuation route maps, because there must be mutual agreement in determining routes and gathering points. This agreement was made because several of the agreed gathering points were on residents' private land. The installation and maintenance of early warning system equipment is also carried out together with the community. This was also stated by the Head of Besole Village, Suratman, that there had been a disaster risk study, namely tsunamis and earthquakes in Besole Village, and outreach had been carried out to the community. The role of participation was also felt by

Rohmat Adrianto from the disability representative, who was involved in making risk assessments, creating and determining evacuation routes, as well as when installing early warning system equipment.

According to Theresia, et all (2014: 196) participation means the participation of a person or group of people in carrying out an activity. Meanwhile, Bornby is deep Theresia, et all (2014: 196) define participation as the action of participating or taking part in activities or statements with the aim of gaining benefits.

In other words, participation is a process of involvement, active participation of community members to obtain better benefits in the life of their group or community. In this case, participation is the main factor in the development and running of a community activity. Through participation, the community can control every activity process carried out. So, community participation in this activity can be realized through community empowerment activities. (Ni Made Ayu Andriani, et al:2017)

In accordance with (BNPB PB: 2014) Concerning Community Participation in Implementing Disaster Management, it is stated that community participation is a process that involves the community in implementing disaster management in a planned, integrated, coordinated and comprehensive manner with the aim of providing protection to the community from the risks and impacts of disasters. . DESTANA's role is in accordance with the Regulation of the Head of the National Disaster Management Agency Number 1 of 2012 concerning the General Guidelines for Disaster Resilient Villages/Subdistricts state that DESTANA has a participatory role, by involving the community to recognize the threat of disasters as well as steps to anticipate and minimize destructive forces so that it can contribute to DRR efforts.

## **Management**

The research results show that DESTANA's management role in DESTANA activities has been the implementation of activities in the form of structural (physical) mitigation to reduce disaster risk by strengthening the structure of community houses, structural (physical) mitigation to reduce disaster risk by strengthening building structures for public facilities (ports, fish auction places, bridges, schools, places of worship, etc.), structural (physical) mitigation for economic resilience by strengthening building structures for public facilities supporting the economy (markets, banks, cooperatives), structural mitigation by planting mangroves to protect areas prone to tsunami disasters , quality of buildings and number of health facilities (posyandu, polindes, puskesmas) and protection for vulnerable groups.

According to Terry (2013) management is a typical process consisting of planning, organizing, movement and control carried out to determine and achieve predetermined targets through the use of human resources and other resources. The same understanding is given by Toner (2013) who states that management is the process of planning, organizing, leading and supervising the efforts of members of an organization by using other resources to achieve predetermined goals. Management can be interpreted as a series of processes starting from planning, organizing, controlling to monitoring so that the goals that have been prepared and determined can be achieved effectively and efficiently. In other words, management is the process of supervising everything involved in implementing policies and achieving goals, so that the goals that have been set can be realized and are useful according to needs.

## **Readiness**

The results of the research show that DESTANA's role in readiness is budgeting funds for emergency response sourced from the District APBD, APBDes/ADD, community

independent funds and the private sector or other parties, budgeting funds for recovery (rehabilitation and reconstruction) sourced from the APBD Regency, APBDes/ADD, community independent funds and the private sector or other parties, Conduct MSME skills training for post-disaster economic resilience.

What has not been done is increasing economic resilience to reduce community vulnerability (increasing awareness of saving) and increasing protection of important community assets from the threat of disaster (building/ship/vehicle insurance).

Based on the results of interviews with AW, the management role in Besole Village is very good. The community is aware that the various facilities that have been built must be maintained. The community is also trying to increase knowledge and strengthen the structure of their homes. Mutual cooperation is even carried out to plant and care for prawn cypress on the coast, as part of mitigation in the event of a tsunami disaster. In terms of DESTANA readiness, Besole Village can be said to be good, and is even poised to become first place in the 2017 East Java level DESTANA competition in the category of funding independence. From the results of the interview with the village head, it was stated that the village had budgeting funds for emergency response and recovery sourced from the APBDes/ADD, and, even though the value of these funds fluctuates, due to policy adjustments, specifically the reallocation of funds to tackle the Covid-19 pandemic.

However, from the role of this readiness, there are several things that DESTANA Besole Village has implemented well, namely efforts to increase economic resilience to reduce community vulnerability (increasing awareness of saving), as well as increasing protection of important community assets from the threat of disasters (building/ship/vehicle insurance). ). This was acknowledged by Purwanto as a member of the Besole Village BPD, that efforts to increase residents' awareness of economic resilience by saving and insurance had not been implemented well. DESTANA Besole Village has not made such efforts, although there are people who have personally done so.

According to BNPB, preparedness is a series of activities carried out to anticipate disasters through organization and appropriate and effective steps. Meanwhile, according to Gillespie and Streeter in Bevaola Kusumasari, preparedness is planning, identifying resources, warning systems, training, simulations and other pre-disaster actions carried out with the aim of increasing security and the effectiveness of community response during a disaster.

Preparedness is an important or key part in minimizing disaster risk, as stated by Schneid. This means that preparedness before a disaster occurs has a role in minimizing potential risks and damage that could occur. For this reason, preparedness must be prepared by the community and other stakeholders, so that conditions can be created where disaster risks can be reduced. This is in line with Carter's opinion, that preparedness is an action that allows governments, community organizations, communities and individuals to be able to respond to a disaster situation quickly and effectively.

## **CONCLUSION**

In their participatory role, the Besole Village community was involved from the start, namely from the start of preparations for the formation of DESTANA by carrying out disaster risk assessment activities, making evacuation route maps, determining gathering points, as well as installing and maintaining early warning system equipment. However, for this participatory role there is no continuity in the community, namely there is no continuity of activities involving community participation in disaster management capacity building training for village officials, volunteers and the community and regular emergency

preparedness and response simulations.

In terms of readiness, the community, Besole village is already good, meanwhile in terms of management roles it is progressing well. The Village Government together with the community jointly carry out a special management role for structural mitigation for disaster risk reduction by strengthening the structure of community houses, strengthening the structure of buildings for public facilities (ports, fish auctions, bridges, schools, places of worship, etc.), strengthening building structures for public facilities supporting the economy (markets, banks, cooperatives), planting mangroves or shrimp pine to protect areas prone to tsunami disasters, improving the quality of buildings and the number of health facilities (posyandu, polindes, puskesmas). The various facilities that have been provided are maintained and well cared for by the community.

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