

The Role of Youth for Landslide Disaster Risk Reduction and Its Implication for Villages Sustainability - Case Study: Taji Village, Malang Regency, Indonesia

Shofiyatul Azmi¹, Heni Masruroh², Indria Kristiawan³, Umi Afdah⁴

^{1,3}Department of Civic Education, Wisnuwardhana University, East Java, Indonesia

²Department of Geography, Malang State University, East Java, Indonesia

⁴Department of Agriculture, Wisnuwardhana University, East Java, Indonesia

Corresponding author: [heni.masruroh.fis\[at\]um.ac.id](mailto:heni.masruroh.fis[at]um.ac.id)

Abstract: *The purpose of this study was to analyze the role of youth in reducing the risk of landslides in Taji Village. The research method used is descriptive qualitative. Data was collected through Focus Group Discussion, observation, and deep interviews. To facilitate the discussion of research results, researchers used three stages in conducting data analysis, namely data reduction, data display and data verification. The results of the study indicate that youth have a major role in reducing the risk of landslides. Taji Village has formed a disaster preparedness community whose members are youths. Youth play an active role in disaster risk reduction efforts through socialization, disaster risk reduction training, participatory mapping, and area conservation through the development of tourist villages. Through youth empowerment, it is one of the entry points in the resilience and sustainability of Taji Village against the threat of landslides. Through empowering the youth of Taji Village, they are able to change the threat of disaster in their area into opportunities for village development in the form of Tourism Villages. In fact, currently Taji Village is known as a tourist village with 1000 coban*

Keywords: Role of Youth, Landslide, Disaster, Risk, Taji

1. Introduction

Indonesia is one of the countries that has the potential for disasters. Hydrometeorological disasters are one of the disasters that often occur in Indonesia. Landslides in the 2021 period are the second most frequent disasters in Indonesia after floods (DIBI, 2021). East Java as one of the provinces in Indonesia has a high vulnerability to landslides. Landslides usually occur at the peak of the rainy season and occur in areas that have extreme morphology with thick soil conditions. The physical condition of the environment is one that initiates the occurrence of landslides, but the potential for landslides will also increase due to the influence of humans who in environmental management consider ecological aspects [1]– [3], so that humans can become trigger factors for landslides. But on the other hand, when people can manage their environment properly and consider ecological aspects, the risk of disaster will be reduced [4]

Taji Village is one of the villages located in Malang Regency with an altitude of 1, 200 meters above sea level and has geomorphological conditions as part of the Bromo Tengger Semeru (BTS) area. Taji village has a characteristic area with thick soil resulting from volcanic process deposition in the area (BTS) (Fig.3). There have been many shallow landslides that have occurred in Taji Village. The landslide that occurred in Taji Village caused losses in the form of cutting off road access and affecting community settlements. Almost every rainy season in Taji Village landslides occur. The cause of the high potential for landslides that occur in Taji Village is cutting slopes for

roads and settlements. Slope cutting that does not consider slope stability can increase the potential for landslides.

As people who live in landslide - prone areas, they have challenges to survive and adapt to their environment. Community experience in disaster management and local wisdom can be one of the efforts that can be made for disaster risk reduction. Reducing the risk of landslides can not only be done through structural mitigation through the construction of geronjong or sand sacks to block the movement of soil material, efforts to reduce landslide risk can be done through non - structural mitigation, namely community empowerment. Through community - based activities, it can increase community empowerment in strengthening social capital so that it can become an internal strength and play an increasingly important role in planning and implementing disaster risk reduction independently. One of the elements of society that plays a very important role in reducing disaster risk is youth. The active role of the community, especially youth, in efforts to reduce disaster risk is a very important part [5].

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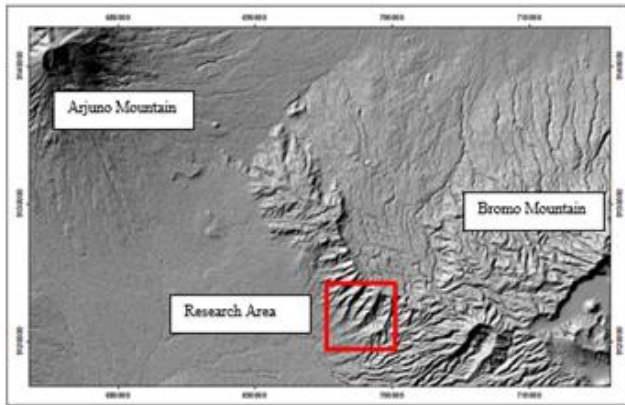


Figure 3: Research Area

Community - based risk reduction is a participatory approach as a driver for disaster risk reduction and to increase community resilience at the local level [6], [7]. In this approach the community is actively involved and involved in various levels of the decision - making process related to disaster. Community - based disaster risk reduction integrates bottom - up and top - down measures by supporting local communities in strengthening their abilities and skills to be able to analyze various conditions in a disaster study. The community is the element at risk that has the greatest potential for losses due to disasters, but the community can also be an element for disaster risk reduction.

Many studies on community empowerment for disaster risk reduction have been carried out [8]– [10], but the role of youth in disaster risk reduction is still very rarely done. Disaster risk reduction by youth is part of community - based disaster risk reduction which aims to empower youth through skill improvement, competency development and encouraging active participation in households and communities to reduce disaster risks and impacts. This research will elaborate on the role of community - based disaster risk reduction, mainly based on the role of youth.

2. Method

The research method used is descriptive qualitative research method. Data was collected through focus group discussions with village heads, representatives from each neighborhood unit, and youth. The number of people who participated in the focus group discussion was 20 people. Observations were made at points where landslides had occurred, both rotational and translational landslides. The data collection technique for deep interviews was carried out by purposive sampling, namely young people who were indeed part of the disaster risk reduction community in Taji Village. There are three stages carried out for data analysis 1) data reduction, namely identifying and sharpening, classifying and organizing data according to the research objectives; 2) presentation of data from the results of data reduction; 3) data verification, namely re - checking the data that has been collected. The results of this study will elaborate on the role of the community, especially youth in reducing the risk of landslides.

3. Discussion

3.1 Hazard Analysis and Landslide Characteristics in Taji Village

Landslides are natural disasters that are influenced by the shape of the earth's surface [11], [12]. Several other characteristics that affect landslides are surface material, land use, slope and rainfall [13]– [15]. The shape of the earth's surface with a sloping topography can increase the potential for landslides. Landslides mostly occur in unconsolidated materials. In this material, the soil is more erodible, so that when exposed to water, the soil is easier to disperse. The potential for landslides will increase on thick soil that is more than 2 meters, usually areas with thick soil are areas where weathering is very intensive. In addition, inappropriate of land use with land suitability also has a major influence on the potential for landslides [16].

As a village which is one of the villages located in the Bromo Tengger Semeru area. The physical condition of this area is that it has a texture in the form of dust from the deposition of Bromo Volcano material and most of it has a sloping morphology. At some points the former landslide can be identified that this area has thick soil. Based on several landslide events in the research area, one of the causes of the increase in landslide potential is cutting slopes for roads and settlements. [17] carried out landslide mapping in the research area, based on landslide maps made using automated topography using watershed boundaries which are part of Taji Village explaining that this area has landslide susceptibility which is categorized as stable and unstable class. For stable class, such peak interfluvial (0.6%) and channel bed (40.49%) for unstable class, namely upper slope (10%), middle slope (9.49%), and lower slope (39.36%)

Landslides are a problem in the research area. Every rainy season landslides occur. Most of the landslides that occurred in Taji Village caused the loss of road access, settlements and occurred on agricultural land. One of the most dominant causes of landslides in the research area is slope cutting. As a result of cutting slopes, the slopes are unstable. In the study area there are active landslides and inactive or dormant landslides. The presence of active and inactive (dormant) landslides can be identified through the surface cover. For the most part, lands where active landslides occur are not found with cover crops. Usually this landslide occurs in less than 3 months, while for inactive (dormant) landslides it can be identified through the presence of vegetation on it. Non - active (dormant) landslides in the study area can also be identified by the shape of the slopes. The shape of the concave slope is one indicator that can be used to identify landslide areas due to the movement of material down the slope as the landslide process causes changes in the shape of the earth's surface.

The typological characteristics of landslides in the research area are rotational and translational. Each type of landslide has its own characteristics. Based on the position of occurrence, rotational landslides that occurred in the study area mostly occurred on agricultural land with the type of plant being cassava. For landslides with the translational type, most of them occur in association with roads and

settlements. The land used for landslides with rotational type is used by the community for agriculture with crop types such as carrots, coffee, chilies, and cabbage [18].

3.2 The Role of Youth in Disaster Risk Reduction

The people of Taji Village have various types of work backgrounds, namely having civil servants, teacher, entrepreneur, driver and farmer types of work. However, the difference in the type of work and educational background is not a differentiator in Taji Village. The people of Taji Village are able to live together, have a high sense of kinship and apply the values of tolerance. One of the things that unites the community and the sense of kinship in Taji Village is the similarity that they live in areas prone to landslides.

Youth as part of the community element plays an important role in efforts to reduce disaster risk and develop the village of Taji to remain sustainable even though it is in an area prone to landslides. So far, the community has realized that Taji Village is prone to landslides, so the community has formed a disaster preparedness community with the name SIBAT, which is community disaster alert. Most of the members of SIBAT are youths from Taji Village. There are several disaster risk reduction efforts carried out by SIBAT of Taji Village. Disaster risk reduction socialization and training. Organizing the role of youth in disaster risk reduction in Taji Village is carried out collaboratively with village officials, the community and the government, especially with the Malang Regency Regional Disaster Management Agency (BPBD). As a disaster - prone village, disaster risk reduction socialization and training activities are activities that are often carried out by the Taji Village disaster preparedness community.

Taji Village disaster preparedness community as an organization engaged in disaster and youth organizations as youth organizations have a strategic role in disaster risk reduction activities. Youth organizations have a strategic role in organizing activities and mobilizing youth resources in outreach activities to the community and training for youth capacity building [7]. The socialization and training carried out did not only provide information to the public. The socialization and training carried out not only provided information to the community but more importantly to increase the capacity of youth in disaster risk reduction in Taji Village. Youth is a dynamic driving actor, so one of the important assets in disaster risk reduction.

The application of community - based disaster risk reduction is one of the means for empowering the community in terms of communicating with various parties to make it easier to understand. Disaster risk reduction activities carried out in a participatory manner can facilitate the community to actively participate together to recalculate potential threats and resources, and be able to assess capacities and vulnerabilities in Taji Village.

3.3 Implications for the sustainability of Taji Village

The community plays an essential role in the sustainability of the village. In a disaster study, the community can be the

initiator of the disaster, but on the other hand, the community also has the capacity for disaster risk reduction. People who live in disaster - prone areas usually have local wisdom that can be used as an effort to reduce disaster risk [8], [10]. One element of the community that plays an important role for village sustainability and development is youth.

Based on the physical condition, the Taji Village area has a landslide threat. As people who live in areas that have threats, the people of Taji Village have the value of local wisdom that is used as an effort to reduce disaster risk. The Taji Village community is able to adapt to the environment, so the threat of landslides is not a barrier to being able to develop Taji Village. Community empowerment, especially youth, is one of the main points implemented in Taji Village.

Taji Village youth through youth organizations and tourism - aware communities are able to turn threats into opportunities. With the physical condition of the disaster - prone area, it becomes an opportunity in tourism development and provides an entry point for the community's economic sustainability. Taji Village youth who are members of the disaster preparedness community, youth organizations and tourism - aware communities are able to make Taji village a tourist village. In addition, through the role of the community and youth, they are able to find strategies to survive in landslide - prone areas. Some of the activities that have been carried out by the community and youth of Taji Village in order to maintain sustainability and reduce disaster risk in Taji Village, such making Taji Village a disaster - resilient tourist village and making Taji Village a disaster - resilient village.

Through youth empowerment in Taji Village, it can be an entry point in maintaining the sustainability of Taji Village. Youth who are members of SIBAT have duties and responsibilities, namely 1) Carry out efforts to empower the capacity and organize the community so that they can take initiatives and take action to minimize the impact of disasters that occur in their environment; 2) Socialization and public awareness about the level of danger, vulnerability and disaster risk from house to house or from family to family as well as the wider community in various forums/opportunities; 3) Together with the community mapping the village on the level of vulnerability/vulnerability, as well as mapping resources; 4) Provide training/counseling to the community in their environment regarding disaster preparedness and emergency response efforts as well as early warning systems and mitigation efforts; 5) Mobilizing the community in implementing the activity plan; 6) Organizing training/simulation for the community so that the community becomes accustomed and able to carry out evacuation measures and efforts to save and secure themselves when a disaster occurs; 7) Help formulate ways to maintain the continuity of activities through social awareness and others; 8) Growing public awareness to participate in planning, implementation, monitoring, evaluation and sustainability.

4. Conclusion

Taji Village youth who are members of the disaster preparedness community and youth organizations play an active role in disaster risk reduction through several activities carried out collaboratively with the community and policy makers in Taji Village. Several activities were carried out as an effort to reduce risk in Taji Village, such as DRR socialization and training, participatory mapping, and environmental conservation activities as an effort to reduce disaster risk. The role of the youth of Taji Village also has an impact on the sustainability of Taji Village. Through several activities, the youth were able to make Taji Village a Tourism Village and Disaster Resilient Village.

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