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ANALYSIS OF COMMUNITY PREPAREDNESS FACING EROSION DISASTER IN SAMBAS REGENCY

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ABSTRACT

This research was conducted to analyze the community's preparedness in the face of erosion in Sambas Regency, which is erosion caused by filing by river water. This research is a mixed methods research. This mixed research combines qualitative research and quantitative research, with a sample of people living in riverbank areas. The head of the local household was also asked for information on preparedness to face erosion disasters. The results of the research on community preparedness for erosion in Sambas District were based on the researchers' view that the community was not ready, people who had filled out the new research questionnaire were about 15% out of 100% who were ready. The results of interviews with residents indicated that there was no counselling, training on this preparedness was also one of the causes of the low level of community preparedness.

Keywords*: Preparedness; Disaster; Erosion.*

A. INTRODUCTION

Indonesia's geographical position is included in the confluence of the three earth plates, namely Eurasia, the Pacific and Indo-Australia. The position of the meeting made Indonesia's territory endowed with fertility and mineral wealth in the bowels of the earth, but on the other hand, our country's position was unstable, easy to shift, and of course prone to disasters (Saanun et al., 2017).

According to (Undang-Undang Republik Indonesia No. 24 Tahun 2007 Tentang Penanggulangan Bencana, 2007) states “a disaster is an event or series of events that threatens and disrupts people's lives and livelihoods which are caused by both natural and non-natural factors, as well as human factors that cause casualties, environmental damage, property loss and psychological impact”. Natural disasters are events that occur in nature that have a major impact on the development of the population of living things, whether humans, plants or animals. Natural disasters are damage to normal life patterns, detrimental to human life, social structures and the emergence of community needs (Haryanto, 2012). Watersheds as rainwater catchment areas are prone to erosion and sedimentation problems. One of the natural disasters that often occurs in Indonesia is Erosion Erosion is something familiar to our hearing, namely the erosion of solids

(sediment, soil, rock, and other particles) due to the influence of wind, water or ice, characteristics of rain, increase in soil and other materials under the influence of gravity, or by creatures Living (Arsyad, 2010) argues that erosion is the removal or transportation of soil or a part of the soil from one area. Erosion that most often occurs with the highest level of sediment production (sediment yield) is sheet erosion, trench erosion, and riverbank erosion. Human activities and related land-use changes are the main causes of accelerated soil erosion, which have substantial implications for nutrient and carbon cycling, land productivity and, in turn, world socio-economic conditions (Borrelli et al., 2017). Human attitudes and behaviour greatly affect the natural condition and the surrounding environment, it is proven that if a group of people who occupy an area does not care or protect the area, it may cause a catastrophe that threatens at any time.

Overall, the rate of erosion that occurs is caused and influenced by five factors, namely climate, soil structure and type, vegetation, topography and soil management factors. The climatic factor that most determines the rate of erosion is rain which is expressed in the rain erosion index value (Arsyad, 2010). Rainfall that falls directly or indirectly can erode the soil surface slowly with increasing time and the intensity of the accumulated rain will cause erosion (Asdak, 2007). From the damage caused by erosion, events can occur in two places, namely on the land where erosion occurs and the land transported to the final destination is deposited (Arsyad, 2010). The impact of this erosion process can cause a decrease in soil productivity, soil bearing capacity and environmental quality. The surface of the earth's crust will always undergo a process of erosion, erosion will occur in one place while in other places there will be accumulation so that its shape will always change over time. These events occur naturally and take place so slowly that their effects do not appear until decades or even hundreds of years later.

Humans are creatures of God Almighty who have the most potential to interact with the natural environment because humans have a mind, mind with all its functions and potentials that are subject to natural rules, experience birth, grow, develop, die and so on. According to (Soemardjan & Soemardi, 1974), Humans are humans who live together and produce culture. Meanwhile, according to (Horton & Hunt, 1998) Society is a group of people who are relatively independent by living together for a long time, living in certain areas with the same culture, and most of the activities in the group. Communities who live in disaster-prone

areas and are at risk of disasters are required to have good preparedness and mitigation to prepare themselves in the event of a disaster at any time because natural disasters that occur do not give definite signs.

The shoreline in the South, Sambas Regency, West Kalimantan is in very poor condition after being eroded by beach waves which caused erosion on Sunday, February 14, 2021. At least as a result of this erosion there were 7 houses that collapsed due to the sea waves. The head of Jawai Laut Village, Sudarni, asked the government for attention so that the location where erosion occurs should immediately be built beach protection or wave breakers so that erosion does not get worse and can be minimized (Delik, 2021).

According to (Jan et al., 2006) regarding the preparedness of a government, a community group or individual, proposes actions that allow governments, organizations, communities, communities and individuals to be able to respond to disaster situations quickly and effectively. Preparedness measures include preparation of disaster management plans, maintenance of resources and training of personnel.

Disaster management is represented as a cyclical model, increased preparedness is part of the disaster risk management process which shows the role of increasing disaster preparedness in a disaster management model that applies the concept of the contract extension, which more represents the role of various components (Nurjanah et al., 2012). Disaster management activities run in parallel.

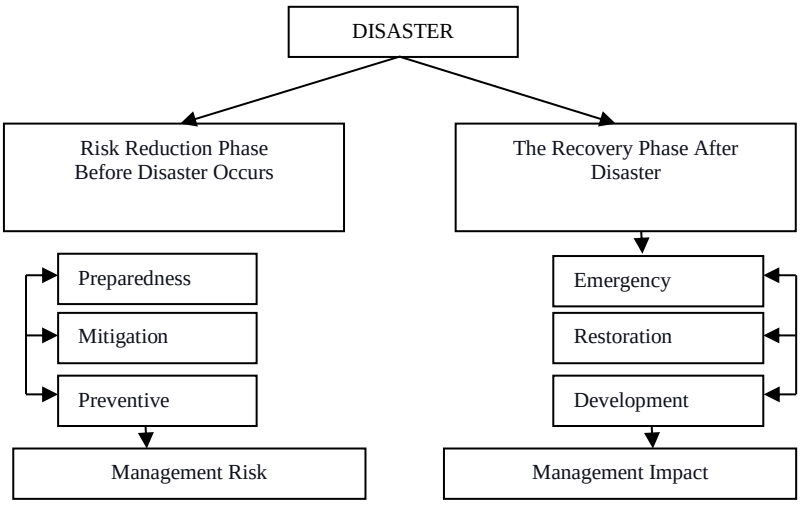

Figure 1. Preparedness in the Disaster Management Process (Model Expand-Contract)

(LIPI - UNESCO / ISDR, 2006: 6)

Based on the description above, it can be concluded that every individual, both the general public, organizations, communities and the government must have a preparedness attitude which is carried out by providing guided training which is the key to the safety of every individual as a human being. a series of activities undertaken to anticipate various threats of disasters through proper organization and steps and to minimize losses incurred by victims and the government.

Disaster management is needed to prepare for a disaster. Several researchers have conducted disaster management studies of both erosion and flooding (Mahmud et al., 2019). Flood mitigation can be done through a combination of development and evaluation of geographic technology information with integrated spatial planning (Ran & Nedovic-Budic, 2016). Erosion that gradually depletes the soil on the riverbanks encourages a bigger disaster because objects or something that is above the surface will fall and fall, this is dangerous if not anticipated. The harmful effects of soil erosion can accelerate deforestation, over-cultivation and inappropriate agricultural practices are known and documented, as are the mechanisms. It can be made worse, not only through land degradation and loss of fertility but through several side effects, for example, sedimentation, silting and eutrophication of waterways or increased flood disasters (Borrelli et al., 2017).

The sedimentation barrier (*groin*) is a dam that is arranged high and very long to hold the waves from being directly struck on the coast and houses (Wulandari et al., 2020). Soil erosion on the banks of rivers can cause sedimentation in rivers and can lead to silting so that flood disasters are easy to occur when the rainy season arrives because the function of rivers is reduced and the tamping capacity of water is not optimal, it is necessary to take action to prepare for the possibility of a disaster.

The parameters used in measuring community preparedness (Jan et al., 2006) consist of five pillars, namely first, knowledge and attitudes towards disaster risk are actions that can influence people's attitudes and concerns so that they are ready and ready to anticipate disasters, especially for disasters. Community who live in coastal areas prone to natural disasters. Second, policies and guidelines related to preparedness to anticipate natural disasters constitute a concrete effort to carry out disaster preparedness activities. Third, natural disaster emergency planning is an important part of preparedness, especially regarding evacuation, rescue and rescue, so that

disaster victims can be minimized. Fourth, a disaster warning system is a warning sign and the dissemination of information on a disaster. Fifth, the last is resource mobilization, namely empowerment, utilization, application of available resources, both human resources (HR), as well as funding and essential infrastructure for emergencies. Based on the above parameters in natural disaster preparedness, one must understand and be able to apply the guidelines to utilize and minimize the loss of life and property in the evacuation, rescue and rescue system.

Based on the observation, the community in Sambas Regency, especially in Rambayan, Tekarang District, which is geographically a coastal area surrounded by sea and small rivers, both naturally and artificially formed, has great potential as a tourism, agriculture and fishery area. However, with all these advantages, Rambayan Village, Tekarang District, Sambas Regency is also included in the lowland category, causing erosion to be a big challenge in the area. The natural erosion that occurs slowly results in decreased soil productivity and causes problems in the community, such as reduced soil fertility. Healthy soil is the basis of agriculture and an important resource to ensure human needs in the 21st century, such as food, feed, fibre, clean water and clean air (Amundson et al., 2015). It is an important part of the function of ecosystems and earth systems that support major ecosystem services (Robinson et al., 2017).

Soil nutrients that are carried away by water flows, frequent flooding, and a decrease in the economic income of the community, should take action, rescue efforts such as conservation techniques for rocky and grassy terrace walls are relatively effective in reducing the rate of erosion to below the tolerable erosion value (Setiawan, 2012).

Erosion disasters have also occurred in Sambas Regency and until now there has been no research related to preparedness, so that information and knowledge cannot be accepted by the people living in Sambas Regency. The harmful effects of soil erosion can reduce fertility for agriculture (Montgomery, 2007), while most of the jobs in Tekarang Village are as farmers. Therefore, this study aims to analyze the preparedness of the community is facing erosion disasters by providing information and knowledge briefly to the surrounding communities who live in areas prone to erosion. This research was conducted to obtain information through analysis from researchers to the community through research instruments in the form of questionnaires and interview question

sheets aimed at the community to obtain research results for future improvement so that people are vulnerable to natural disasters, especially erosion. disaster can be alert. and ready to act for natural disasters that occur without prior warning.

In the end, based on the research context that has been stated above, the researcher believes that research related to "Analysis of Community Preparedness for Erosion in Sambas Regency" is very important to do so that it is hoped that this brief research it can raise awareness for the community to protect nature to avoid it. and prevent further erosion from disasters.

B. MATERIALS AND METHODS

This type of research is field research (field research) namely direct observation of the object under study for use get relevant data (Narbuko& Achmadi, 2009). Furthermore, this research is mixed-method research because the data collection process is done qualitatively and quantitatively or (*mixed method).* Mixed research is a research approach that combines qualitative research with quantitative research. Combined method research *(mixed method)* is a research method that combines or combines quantitative methods with qualitative methods to be used together in research activities, so that more complete, valid and reliable and objective data are obtained (Sugiyono, 2016).

This study uses a sequential mixed methods strategy. This research is the first stage of collecting and analyzing qualitative data in answering the first, second and third problem formulations, namely what causes soil erosion. How are community activities from the impact of soil erosion, and how are solutions to overcome soil erosion in Rambayan Village, Tekarang District, Sambas Regency. The second stage is the collection and analysis of quantitative data to answer the formulation of the fourth problem, namely how the community is prepared to face soil erosion in Rambayan Village, Tekarang District, Sambas Regency. Retrieval of data using a questionnaire or research instrument with the help of the Guttman scale which describes the question and presents the answer with 2 answer choices, namely Yes and No Yes has a score of 1 while does not have a score of 0. This helps this study. to make it simpler and tidier in the data processing.

The research subjects were local people who had experienced erosion and its impacts. Data collection was carried out through observation, interviews and research questionnaires. Early in this

study, simple observations and documentation were carried out to obtain data that could support this research. Furthermore, the research instrument in the form of a preparedness questionnaire was distributed to the community, after the instrument was filled in, interviews were conducted with community leaders and the head of the RT or related parties to conduct interviews to strengthen the quantitative data on the results of this study.

C. RESULTS AND DISCUSSION

Results of the Analysis of the Preparedness Questionnaire

Research conducted to determine community preparedness in the face of erosion disasters, resulted in an analysis that the community was not ready to face the erosion disaster that occurred. Below will be described the research results obtained from the preparedness questionnaire:

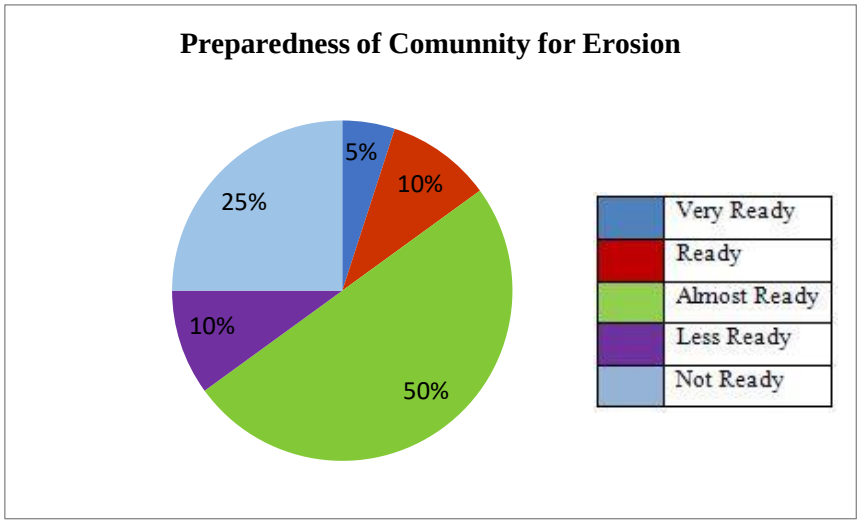

Figure 2. Community Preparedness for Erosion

Based on figure 2 above, it is explained that the community's preparedness in facing erosion due to high tide is more than 50% in the category of almost ready, unprepared and unprepared. Whereas for the community who are ready only about 10%, various things affect the readiness of the community in an area including the completeness of facilities and infrastructure in the area, besides that Tekarang Village, Sambas Regency is in a remote location so it needs attention and effort that is right on target. from the local government to be more concerned in providing information on preparedness to face natural disasters.

Whereas, soil erosion disasters in Sambas Regency showed that the

community preparedness process in dealing with soil erosion disasters in Sambas Regency was carried out in two stages, namely observing the community environment on November 10 2019 regarding several aspects including the suitability of the environment with these problems. Research, collection of data sources through the daily activities of local communities, and the process of evaluating data through observing the efforts made by local communities in response to soil erosion. The second stage of observation of community leaders and the surrounding community was carried out from November 22 to December 1 2019 with 2 different people based on profession, including the head of the RT / RW and the surrounding community.

Result of Interview Preparedness

An interview is a conversation to procure information where an interviewer acts questioning as well as an interviewee responds to the asked questions (Chahal, 2020). As long as the research obtained quite conclusive data as follows, data collection through interviews was also carried out to strengthen analyzes related to community preparedness. The results of interviews with disaster-affected communities will be described in the explanation. The first interview was obtained from a 46-year-old RT head who said: “Erosion is caused by erosion from river flows that occurs all the time and will get worse when the rainy season arrives”.

According to him, community activities affected by erosion are disrupted and community activities cannot run as usual. The hope awaited by the RT head and the community is the improvement of supporting infrastructure such as road elevation, bridge construction and improvement of drinking water channels that are good for the surrounding community, as well as community preparedness in the area which is also not good because related parties such as government agencies have not provided adequate knowledge. to the community so that they are ready to face natural disasters that will occur at any time in their area.

Also, an interview was conducted with a resident, namely Ms.Nurhalimah, who argued that "The cause of erosion in her village was due to the strong natural flow of water and the dredging was done deliberately for a specific purpose". Road access is also disrupted due to being submerged by water due to rising tides of river water (road access) and reduced soil nutrients, which causes community crop yields to decline and also has an impact on the people's economy.

Improvement efforts have not been carried out optimally to reduce losses to the community, dredging of the land

around the river is still carried out because efforts to minimize flooding, even though it only lasts a short time and there have been no efforts to build walls along the riverbanks, still low because you don't understand and understand what its readiness is.

D. CONCLUSIONS

Conclusions of this study indicate that the preparedness of the community against erosion in Sambas District in the face of erosion due to high tide overall is more than 50% in the almost ready, unprepared and unprepared category. Meanwhile, only about 10% of the ready people, various things affect the readiness of the community.

Based on the results of interviews in the research village, it was stated that until now there had been no counselling related to knowledge and information that had to be received by the community and there had not been any guided and systematic training from the government. So that only certain people receive education about natural disaster preparedness, especially soil erosion disasters.

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